



DRONEHAB AUSTRALIA

CAPABILITY STATEMENT · 2026

Survey & Spatial

Surveying, UAV mapping, LiDAR and spatial data for mining, civil, infrastructure, renewable energy and rehabilitation projects — field acquisition through to engineering and GIS-ready deliverables.

MINING · CIVIL · INFRASTRUCTURE · RENEWABLES · REHABILITATION

Dronehab Pty Ltd · ABN 18 664 915 557 · CASA ReOC holder · ARN 1210588 · +61 456 902 327 · Enquiries@dronehab.com.au

Survey-grade spatial data, end to end

Dronehab delivers integrated survey, UAV mapping, LiDAR and spatial data services across mining, civil construction, infrastructure, rehabilitation and environmental projects.

We manage the complete spatial data lifecycle – survey control and field acquisition, through processing, quality assurance and analysis, to final engineering or GIS-ready deliverables. Senior surveying expertise is combined with enterprise UAV systems, RTK / GNSS positioning, LiDAR, photogrammetry and GIS-based workflows, under one CASA-certified operation.

25+

YEARS SENIOR SURVEY EXPERIENCE

RPEQ

ENGINEERING REGISTRATION, IN-HOUSE

1.5–2.5cm

TYPICAL ORTHOMOSAIC GSD PER PIXEL

WHAT WE DELIVER

Production & mine survey

Pit and dump surveys, stockpile volumes, end-of-month reconciliation, drill and blast support, open-cut and underground.

UAV photogrammetry

High-resolution RGB capture processed to orthomosaics, point clouds, surfaces, contours and volumes.

UAV LiDAR

High-density 3D capture with vegetation penetration for terrain definition and complex landform modelling.

Survey control & RTK / GNSS

Control establishment and verification, RTK corrections, independent checkpoints and accuracy reporting.

Earthworks design & as-builts

Design surfaces and 3D models prepared from survey, cut / fill and design-to-survey volumes, machine control models for site plant, set-out support, and as-constructed surveys with conformance reporting against design tolerances – the record behind progress claims and quantity verification.

Spatial & GIS delivery

CAD and GIS-ready datasets, change detection, repeat monitoring and spatial compliance reporting.

Solar farm thermography

Radiometric aerial thermal and RGB inspection of utility-scale PV, delivered as a georeferenced anomaly register.

Thermal inspection

Radiometric thermal capture of structures and infrastructure, alongside high-zoom visual inspection.

Across the project lifecycle

Survey and spatial services delivered from a single contractor, scaled from individual survey tasks to recurring monitoring programs and large-area spatial projects.

FIELD SURVEY

Topographic and detail surveys
Mine and quarry surveys
Open-cut and underground survey
RTK / GNSS surveys
Survey control establishment & verification
Drill and blast survey support
Pit and dump surveys
Tailings and water storage surveys
Dam, drainage and creek surveys
As-built and as-constructed surveys
Machine control modelling and support

VOLUMES & EARTHWORKS

Stockpile and material volume surveys
Cut / fill and earthworks calculations
End-of-month and progress surveys
Design-to-as-built comparison
Contractor quantity verification
Machine control data preparation
Rehabilitation and final landform surveys
Change detection and repeat monitoring
Earthworks verification
Haul road and infrastructure survey

AERIAL & SPATIAL PRODUCTS

UAV photogrammetry
UAV LiDAR
High-resolution orthomosaic imagery
Point cloud generation and processing
Digital Terrain Models (DTM)
Digital Surface Models (DSM)
Contours and surface models
Slope, drainage and landform analysis
CAD and GIS-ready deliverables
Volumetric and comparative reporting



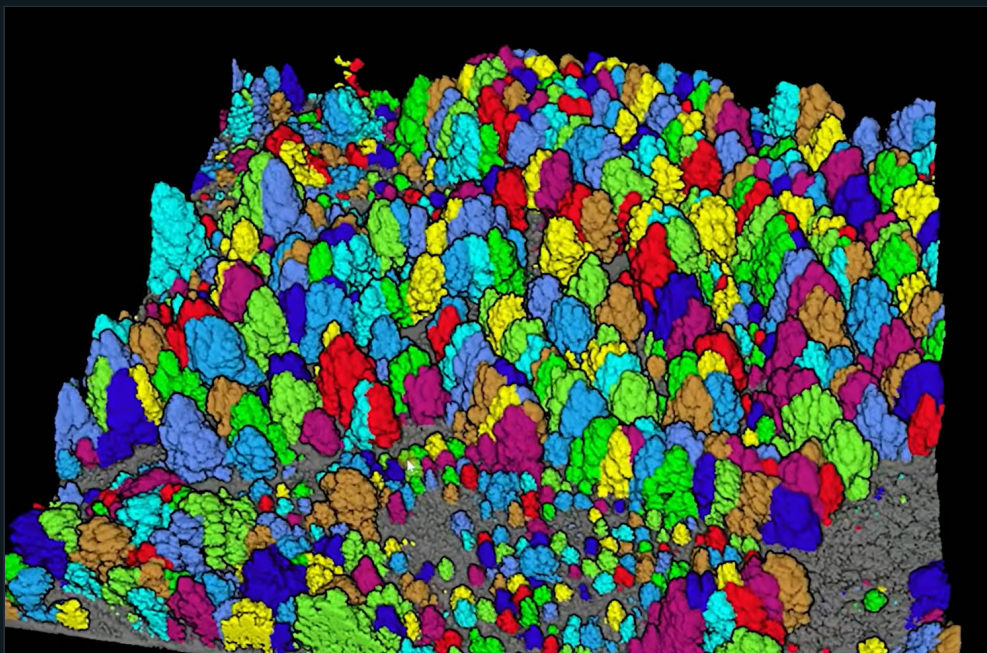
SURVEY-GRADE RGB ORTHOMOSAIC – REHABILITATION LANDFORM

DELIVERED IN YOUR ENVIRONMENT Outputs are produced in your nominated datum and projection – GDA2020 / MGA, AHD or local mine grid – and issued in the formats your survey, engineering and GIS teams already work in.

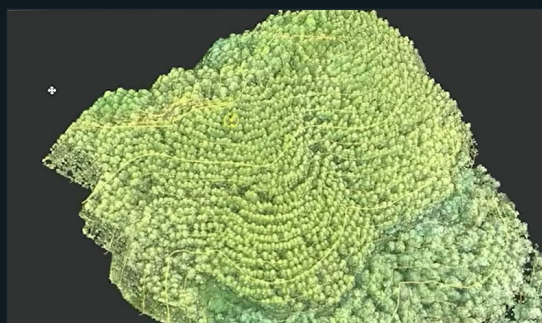
CAPABILITY

UAV surveying & LiDAR

Conventional survey methodology combined with enterprise UAV systems, to capture large, remote and difficult-to-access areas efficiently. High-resolution RGB photogrammetry generates orthomosaic imagery, 3D point clouds, surface and terrain models, contours, volumetrics, cut / fill analysis, progress comparisons and as-built information.



LIDAR POINT CLOUD – CLASSIFIED RETURNS AND INDIVIDUAL-TREE SEGMENTATION



CANOPY SURFACE WITH DERIVED CONTOURS

WHY LIDAR

High-density 3D data where terrain definition, vegetation penetration or detailed landform modelling is required – recovering bare earth beneath canopy that photogrammetry alone cannot resolve.

CONTROLLED

RTK / GNSS control and independent verification incorporated through the workflow, giving traceability between ground control, aerial acquisition and final deliverables.

OUTCOME

Rapid capture of large areas under a controlled and defensible survey methodology.

Design-to-survey volumes, issued properly

Reservoir earthworks for a civil contractor: natural surface captured by UAV, compared against the design surface, and issued as an A3 colourfill plan and a volume report.

72,690m² COMPUTATION BOUNDARY	38,172m³ NET FILL	0.036 CUT : FILL RATIO	1:3500 PLAN SCALE @ A3
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COLOURFILL CUT / FILL – DESIGN SURFACE AGAINST SURVEYED NATURAL SURFACE, MGA ZONE 55 / AHD

CAPTURED

UAV photogrammetry of the full site, processed to a natural-surface model in the project datum.

COMPUTED

Prism volumes between design and natural surfaces within the DTM boundary, with area broken down by 0.5 m depth band.

ISSUED

Drawing-numbered A3 plan with revision control, plus a report stating the basis of quantity – boundary, material factors and exclusions.

Quantities are issued as in-situ geometric volumes with their basis stated, so they cannot be mistaken for haulage or supply figures. Client and project withheld.

SECTOR

Mining & resources

Dronehab already operates across mining, rehabilitation and environmental projects in the Bowen Basin and Central Queensland. Our survey capability complements those services, supporting production surveying, earthworks, rehabilitation and spatial compliance through a single contractor.



SURVEY CREW ON SITE – CONTROLLED LAUNCH AND RECOVERY AREA



STORAGE CELL – BEACH, DECANT POND AND EMBANKMENT CREST

PRODUCTION & OPERATIONS

- Pit and dump surveys
- Stockpile surveys and reconciliation
- End-of-month volumes
- Drill and blast survey support
- Survey control
- Haul roads and mine infrastructure

COMPLIANCE & CLOSURE

- Tailings storage facilities
- Rehabilitation landforms
- Drainage structures
- Earthworks verification
- Contractor quantity verification
- Repeat monitoring and change detection

Survey workflows are built around operational mining environments, where accuracy, repeatability, data integrity and turnaround time are critical. Crews hold current mine inductions, work under job-specific SWMS and mobilise self-contained to remote sites.

SITE-READY

Mine-inducted crews, compliant vehicles, self-contained field rig

SAFETY RECORD

Zero recordable injuries since operations commenced in May 2023

SUPPLIER SYSTEMS

Avetta · Pegasus / Onsite Track Easy · ICN Gateway

Solar farm thermography

Aerial infrared inspection of utility-scale PV – every module, radiometric, and referenced to block, row and string.

Radiometric thermal and high-resolution RGB are captured together in one pass. That lets us flag thermal anomalies at cell, module, string and connection level across a whole plant far faster than handheld inspection, then hand your O&M team an anomaly register they can act on directly. Capture and classification follow the IEC TS 62446-3 methodology for outdoor infrared thermography of PV systems.

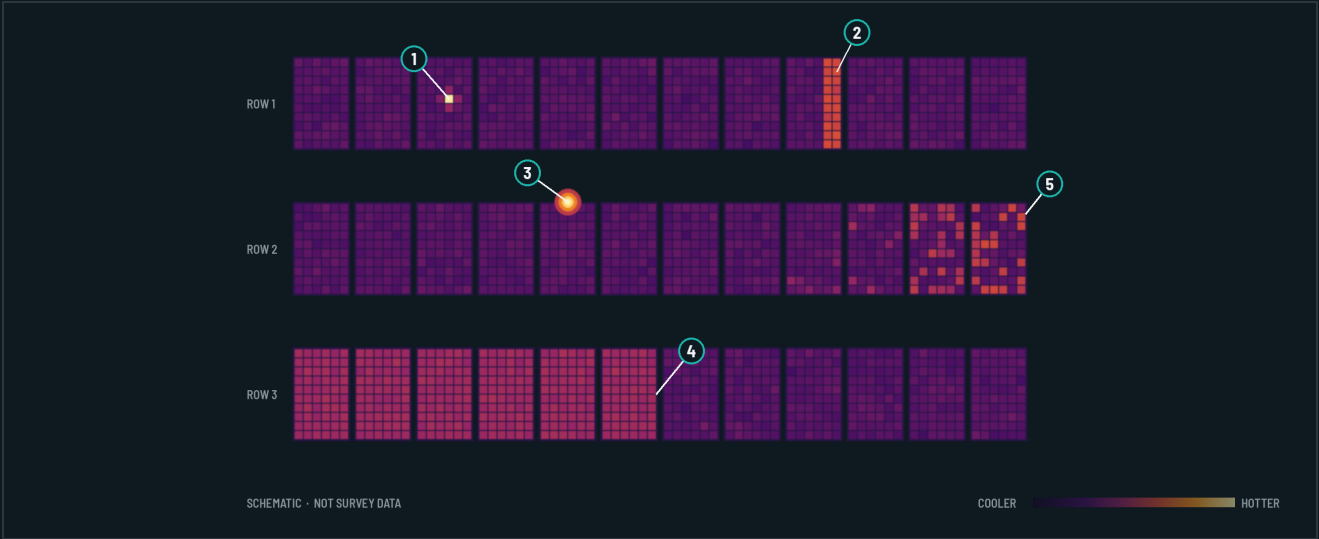
1280×1024 RADIOMETRIC THERMAL	≤50mK THERMAL SENSITIVITY	600W/m² MINIMUM CAPTURE IRRADIANCE	5×5 MINIMUM PIXELS PER CELL
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THERMAL – SIGNATURES WE FLAG

- Hot-spot signatures consistent with cell defects or cracking
- Sub-string patterns suggesting bypass diode activation
- Suspected open-circuit or offline strings
- Patterns consistent with potential-induced degradation
- Elevated temperatures at junction boxes and connectors
- Suspected combiner box hot spots

RGB – SAME FLIGHT

- Visible glass and frame damage
- Soiling and bird fouling
- Shading and vegetation encroachment
- Tracker misalignment and stow faults
- Missing or displaced modules
- Drainage, fence and access condition



SCHEMATIC – TYPICAL ANOMALY SIGNATURES ON A PV ARRAY. ILLUSTRATIVE, NOT SURVEY DATA

- 1 Hot-spot signature
- 2 Sub-string pattern (suspected diode)
- 3 Junction box heating
- 4 Suspected offline string
- 5 PID-consistent pattern

From flight to work order

01

Plan

Plant layout and string map loaded. Altitude set so every module resolves at 5x5 thermal pixels per cell or better.

02

Capture

Flown near solar noon under clear sky, at or above 600 W/m² in-plane irradiance, near-nadir to limit reflection. Conditions logged.

03

Analyse

Each anomaly measured as ΔT against comparable modules and classified by severity, from no abnormality to safety-relevant.

04

Report

Anomalies referenced to block, row, string and module, with thermal and RGB evidence and a recommended action.

DELIVERABLES

Anomaly register

CSV / XLSX ready for CMMS import – location ID, coordinates, anomaly type, ΔT, class and recommended action per record

Orthomosaics

Georeferenced thermal and RGB GeoTIFF of the full plant

Field layers

KML / SHP anomaly layers so technicians can navigate straight to the module

Report

PDF with capture conditions, equipment, method, findings by class and block, and limitations

ID	LOCATION	ANOMALY	ΔT	CLASS	ACTION
A-0142	B03 · R12 · S04 · M17	Hot-spot signature	24.6 °C	2	Warranty review / detailed inspection
A-0143	B03 · R14 · S02 · M05	Junction box heating	47.3 °C	3	Priority electrical inspection / isolate if confirmed
A-0144	B05 · R02 · S07 · —	Suspected offline string	3.2 °C	2	String, fuse and connector inspection

Sample register format — example values only.

ACROSS THE ASSET LIFE

BUILD

Pre-construction topographic survey
Drainage and earthworks design support
Construction progress and as-built survey
Commissioning baseline thermography

OPERATE

Annual O&M and warranty thermography
Post-storm and hail damage assessment
Vegetation mapping between rows
Weed control across the site, in-house

INDEPENDENT

Inspection independent of the owner, operator and EPC.

ONE CONTRACTOR

Thermography, survey and vegetation management from one mobilisation.

WHOLE PLANT

Every module inspected, not a sample.

ASSURANCE

Survey quality & data integrity

Survey-grade outcomes require more than an accurate aircraft.

Structured quality assurance and quality control is applied through the survey workflow, scaled to the accuracy and deliverable requirements of each project.

CONTROL & ACQUISITION

- Survey control verification
- Coordinate system checks
- RTK corrections
- Independent checkpoints
- Horizontal and vertical accuracy verification

DATA & DELIVERABLES

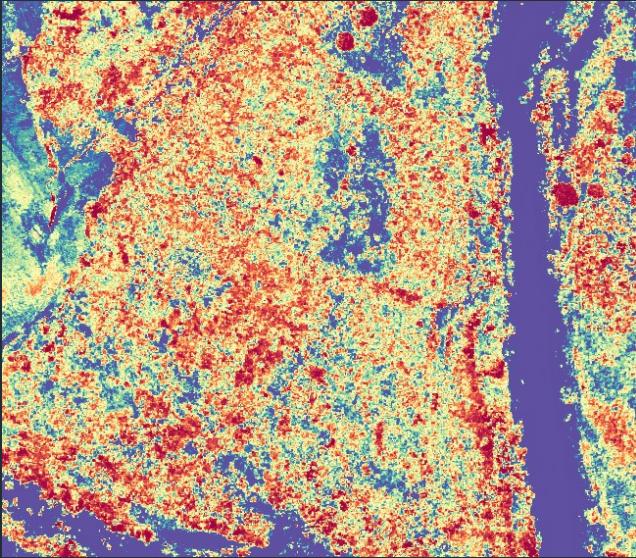
- Point cloud validation
- Surface validation
- Ground classification checks
- Design-to-survey comparisons
- Repeatability checks between campaigns

DATUMS & COORDINATE INTEGRITY

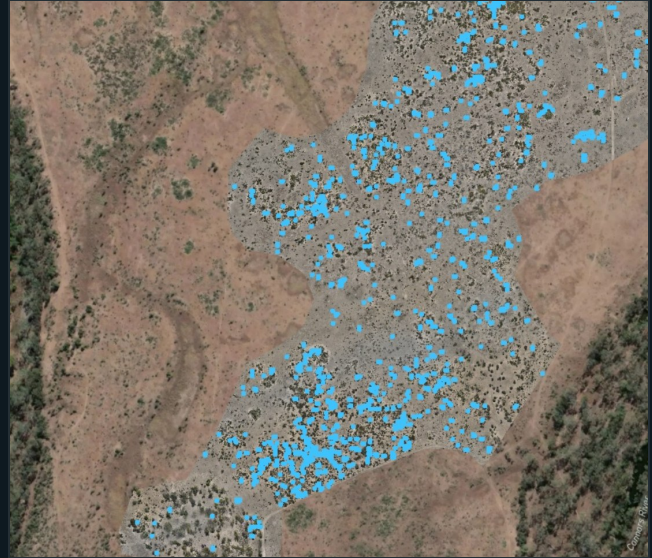
Coordinate systems	GDA2020 / MGA zones, AHD, project datums and local mine grids – with documented transformations between them.
Control information	Control provenance, occupation records and checkpoint residuals retained and reported with the deliverable.
Personnel	Survey work is led by personnel with more than 25 years of senior survey experience across mining, civil construction, infrastructure and land surveying.
Engineering registration	Registered Professional Engineer of Queensland (RPEQ) in-house. RPEQ is an engineering registration and is separate from Surveyors Board of Queensland registration and endorsements.
Data handling	All project data held as commercial-in-confidence; deliverable ownership and access arrangements set per engagement.

One mobilisation, multiple datasets

A key advantage of Dronehab's model is the integration of surveying with our existing UAV, environmental and GIS capability. A single mobilisation can support several project requirements at once, from the same captured data.



VEGETATION INDEX DERIVED FROM THE SAME SURVEY
MOBILISATION



SPECIES-ATTRIBUTED MAPPING OVER A SURVEY-GRADE
ORTHOMOSAIC

FOR ENGINEERING TEAMS

- Digital terrain models
- Contours and slopes
- Drainage analysis
- Cut / fill information
- Landform verification
- Design-to-as-built comparison

FOR ENVIRONMENTAL TEAMS

- Rehabilitation boundaries
- Erosion monitoring
- Vegetation monitoring
- Weed mapping
- Disturbance mapping
- Spatial compliance reporting

Clients extract greater value from each mobilisation while maintaining consistency across survey, engineering, environmental and GIS datasets — one coordinate framework, one provider, one record.

Systems & software

AERIAL PLATFORMS

DJI Matrice 400 — heavy-lift survey

- Phase One iXM-100 — 100 MP medium-format aerial survey camera
- Zenmuse L3 LiDAR
- Zenmuse H30T thermal / zoom

DJI Matrice 4T — rapid inspection

DJI Mavic 4E — rapid mapping

DJI Mavic 3 Multispectral — indices

POSITIONING & GROUND SURVEY

Survey-grade GNSS — base and rover

RTK and PPK workflows

Total station systems

Ground control and checkpoint survey

Leica, Trimble and Topcon systems

Machine control data preparation

PROCESSING & DESIGN

AutoCAD · CivilCAD

Surpac · Datamine

Geocomp · Magnet Office

Photogrammetric & LiDAR processing

Point cloud classification

GIS mapping and analysis

DELIVERABLE FORMATS

Raster	GeoTIFF, ECW — orthomosaics, DTM / DSM, hillshade and derived surfaces
Vector & GIS	SHP, GeoPackage, KML / KMZ with full attribution and calculated areas
CAD & point cloud	DWG, DXF, LAS, LAZ — classified, ready for design and machine control workflows
Reporting	CSV volume and comparison tables, PDF map products and accuracy statements

ACCURACY & CONTROL

RTK / PPK georeferencing with surveyed ground control and independent checkpoints. Orthomosaics are typically 1.5–2.5 cm/ pixel GSD. GSD is image resolution, not positional accuracy: achieved horizontal and vertical accuracy is verified separately against independent checkpoints and reported per project. Acquisition parameters, control density and checkpoint counts are set to the accuracy class the deliverable requires, not to a fixed template.

Survey, aerial and spatial under one contractor

Integrated capability

Survey, UAV, LiDAR, GIS and environmental spatial services delivered through a single contractor and a single coordinate framework.

Senior survey experience

More than 25 years of senior survey experience across mining, civil construction, infrastructure and land surveying, with RPEQ engineering registration in-house.

Resources sector experience

Already operating across mining, rehabilitation and environmental projects, and familiar with delivering inside active resource environments.

Enterprise aerial capability

High-productivity UAV systems capture large sites, difficult terrain and areas inefficient or hazardous to survey conventionally.

Controlled methodology

Survey control, RTK / GNSS, independent verification and QA/QC applied to project accuracy and deliverable requirements.

Scalable delivery

Individual survey tasks through to large-area programs, recurring monitoring campaigns and multidisciplinary spatial projects.

COMPANY

Dronehab Pty Ltd — specialist UAV, survey, spatial and environmental services to mining, civil, infrastructure, government and natural resource clients.

OPERATING MODEL

Field survey capability combined with enterprise UAV technology, LiDAR, photogrammetry, GIS and environmental data capture.

OUTCOME

Accurate, repeatable and practical spatial information supporting engineering, production, construction, rehabilitation and environmental decisions.

CREDENTIALS & COMPLIANCE

Certified, registered, site-ready

CASA REOC HOLDER ARN 1210588	CHIEF REMOTE PILOT · REPL HOLDER ARN 1210579	ENGINEERING REGISTRATION RPEQ, in-house	SENIOR SURVEY EXPERIENCE 25+ years
ECOLOGICAL SIGN-OFF Ecologist / SQP, in-house	SAFETY RECORD Zero recordable injuries since May 2023	SITE READINESS Mine-inducted crews	ICN GATEWAY Business ID 1890843

SUPPLIER SYSTEMS & REGISTRATIONS

Avetta	Pegasus · Onsite Track Easy	ICN Gateway
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APPROVED VENDOR & SUPPLIER

	
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Registered / approved supplier to the organisations above.

ENQUIRIES

Director	Buster Shoesmith — +61 456 902 327 · Buster.s@dronehab.com.au
Locations	Mackay QLD · Brisbane QLD · Gold Coast QLD · Sydney NSW