



Drone Operations

Who we are

Henley Air is a SACAA licensed drone operator with BVLOS (Beyond Visual Line of Sight) approval. Henley Air, based at Rand Airport has been around for 22 years, specializing in helicopter operations. We proudly serve many long-standing customers with the likes of Impala Platinum, Lonmin, Sasol, Cartrack and Matrix vehicle recovery. Henley Air is also the proud operator of ROCKET HEMS, a 24/7 emergency response helicopter.

DJI M300 RTK

About

Range	8-16km
Endurance	40 minutes
Thermal	640x512 px
Zoom	23x Optical 200x Digital
Video	3840x2160@30fps (4k)
Photo	1/1.7" CMOS, 20 MP 5184 x 3888
Live view:	Live stream footage to control room



Our offerings

Estate security	Day/Night operations - Neighbourhood cost model options
Security Contracts	Options for employees to be trained as pilots
Solar Inspection	IEC Comprehensive Level (thermal and visual)
Industrial inspections	High-res grid photos - 3D and orthomosaic mapping
Tailor made	Chat to us about your need

DJI Inspire 2

About

Camera	Zenmuse X7 & X5S
lenses	15/16/24/35/50 mm F2.8
Photos	24 MP Stills 6016 x 4008
Quality	5.2K Apple ProRes / 6K CinemaDNG
Cinematic	14 Stops of Dynamic Range / Super 35 Sensor



Our offerings

Filmshoots	Film industry experienced pilot and camera operator
Event coverage	Live event coverage & filming/photography
Mapping	3D and orthomosaics - Point cloud
Tailor made	Chat to us about your need

Contact us

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Drone Surveillance

Why drones

Drones provide an additional layer of security by being the 'eyes in the sky'. During routine missions, a drone can fly an automated route along the perimeter whilst the camera operator scans the outside boundary, this is particularly beneficial when the property neighbours vacant land. Criminals tend to hide at the first sound of a vehicle or person with a torch approaching, utilizing a thermal camera from an aerial perspective eliminates the option to hide. Working closely with security ground forces we'll be able to follow the criminals and direct the ground crews, thus leading to a successful apprehension. Early detection and prevention rather than reaction is essential.

DJI M300 RTK

Henley Air is proud to be utilizing the latest in drone technology currently available with our flagship DJI M300 RTK paired with the powerful H20T thermal and daylight zoom camera. Our operational radius ranges from 8km to 16km* with a flight endurance time of 35 minutes including battery reserves. With battery hot-swap capability, downtime is limited to less than a minute when time is of the essence. Our crew is either stationed at a base or in a mobile command vehicle for multiple area coverage. Security control rooms have live access to the video feed and location of the drone to assist in coordinating ground personnel.

Estate and commercial

We offer a 12 or 24-hour package with a base station setup or mobile command vehicle. Two qualified pilots will be on shift at all times. Standard Operating Procedures will be tailored for the operation to ensure seamless integration with the security company.

Cost sharing

We offer the option for you to partner up with neighbouring estates or businesses to share the cost and service. Our team will be stationed in a mobile command vehicle and will have the ability to cover all areas during the shift whilst still being able to rapidly deploy to an incident at an affiliated property.

Security companies

Wanting to stay ahead of the competition? It's time to add drone surveillance to your current service offering. We offer the option to up-skill your current employees in obtaining their RPL and have them act as the drone crew. This greatly reduces the overall cost and addresses the job displacement impact drones may have on the workforce. A mobile command vehicle will be provided and you will have the ability to act as a response unit as well as patrol multiple locations during a shift.

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Drone Surveillance

FAQ



Is Henley Air a licensed drone company?

Yes, Henley Air is licensed by the South African Civil Aviation Authority (SACAA).
ROC Number CAA/G576D.

Can the footage be legally used for court proceedings?

Yes, the footage recorded from our drones is in accordance with SACAA.

Are the drone pilot's licensed?

Yes, the drone pilots are licensed by the SACAA with a Remote Pilot License (RPL) and Beyond Visual Line OF Sight (BVLOS) rated.

Will the drone make a lot of noise?

No, our drone will be flown at heights high enough to prevent disturbance.

Will the drone spy on us and look into our homes?

No, the primary concern is the surveillance of the outside perimeter and not that of monitoring residents. Footage is recorded with timestamps and may be audited.

How long can the drone fly for?

40 minutes. The drone is able to swap batteries in under a minute and return to its last point.

Can the drone be seen at night?

We have the ability to switch the lights off and be full incognito however we prefer a combination of lights on and off as it serves as a deterrence if seen.

How much are we able to see at night?

We are able to detect anything from a cat upwards and have heat signature alerts enabled.

Is there only one pilot?

No, there will be two pilots. One pilot will monitor the drones automated flight path and take control if need be. The second pilot will control the camera position. Roles will be alternated throughout the shift.

When can recorded footage be viewed?

Immediately after the flight, footage will be uploaded in timestamp order for post-incident analysis.

What information can a live stream give?

A live stream will show the live camera view of the drone and its position overlaid on a map. The pilot can pinpoint locations which will display on the live stream view with coordinates, essential for a security control room. The control room may also annotate search areas for the pilot which will display on their screen. The annotation is excellent when multiple estates are being patrolled and one of the estates require assistance, their control room will annotate the specific area and we will be able to divert the drone immediately to render assistance.

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Drone Surveillance

Exclusive

The exclusive use of the drone is available in two options; a 12-hour service with a combination of night and day time operations or a 24-hour service. In order to minimize disruption to residents, a dedicated operations area will be used. Pre-programmed routes will be flown at random with heights sufficient enough to cause minimal noise disturbance. Footage from the drone will be saved securely for post-incident analysis. The drone will have a constant live feed with secure login keys. Our aim is to work in synergy with the current security company, radio communication and live video feed is essential to the deterrence and successful apprehension of criminals. Exclusive use of our services means you will have a dedicated drone patrolling the area at all times. Our aim is to be an early detection and prevent a perimeter breach before it happens.

Neighborhood

Under the neighborhood model, the drone's cost is shared among the estates in the area. A 12-hour service with a combination of night and day time operation or a 24-hour service remains the same. Drone flight path analysis will be done to ensure a fair usage throughout the area with focus on each estate at a randomized period. Our drone team will be stationed in a vehicle fitted with monitors, internet, inverters and radio communication. Our vehicle allows us to base ourselves at random throughout the shift to avoid patterns being detected by criminals as well as provide rapid transport to an incident. Radio communication with each estate will be established to our control vehicle ensuring a rapid response to an incident. Working in synergy with the current security providers allows us to be their eyes in the sky leading to successful arrests.



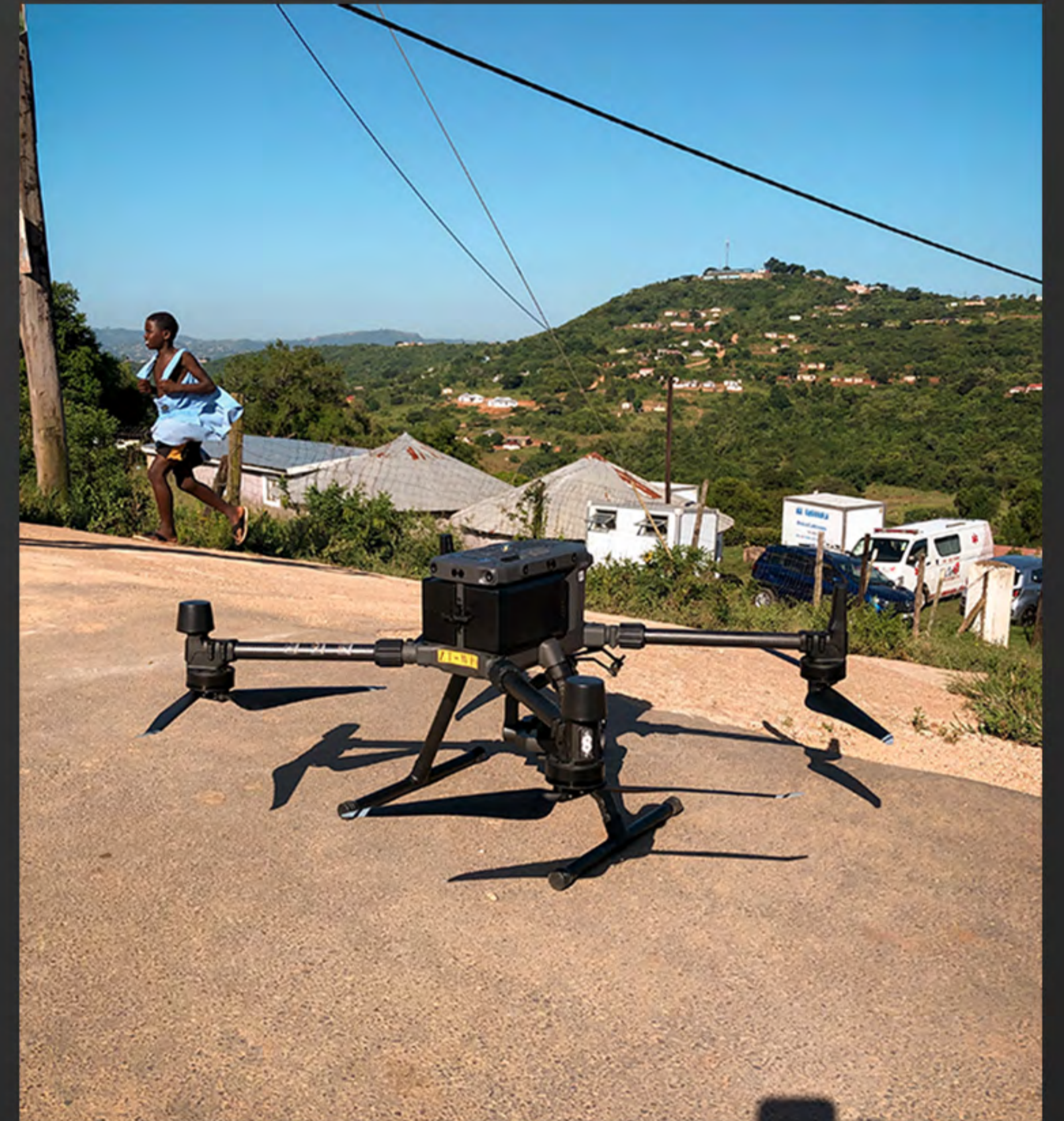
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Drone Surveillance

Day Ops





Drone Surveillance

Night Ops





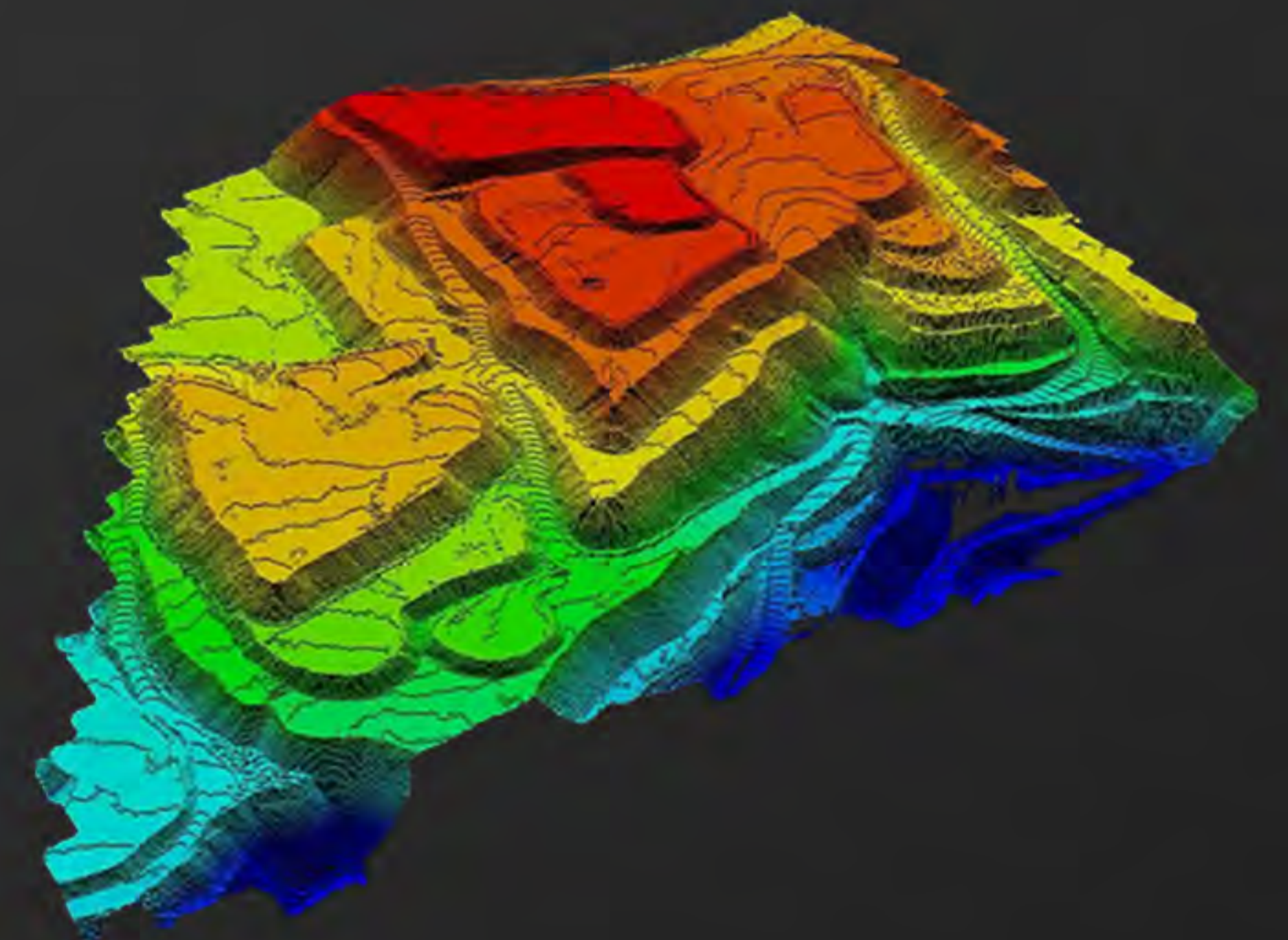
Drone Inspections

What we provide

Henley Air provides detailed inspection data for various industries using specialized software analytics, reducing time and increasing planning accuracy. We make use of the Zenmuse P1 for photogrammetry, Zemuse L1 for LIDAR scanning and the CoroCAM UVS1 for Corona discharge, but are able to source your required equipment for the job.

Our deliverables

- Orthomosaic maps
- 3D point cloud
- Digital Surface Models (DSM)
- Digital Elevation Model (DEM)
- Digital Terrain Model (DTM)
- Contour Maps
- 3D Textured Maps
- 3D BIM
- Thermal
- Quantity
- Timelapse
- Corona discharge (Power utility sector)
- Stockpile volumetric measurements
- Cadastral Surveying



Industries

- Construction
- Development planning
- Mining
- Transport infrastructure
- Cell towers
- Power utility
- Solar



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Solar Inspections



Anomaly	Anomalies (%)	Modules (%)	Est. Affected DC (%)	Est. Affected DC (%)	Est. Annual Impact (kWh) (%)	Est. Annual Impact (\$) (%)
Cell	17	17	1.93 kW	0.00%	3178.68 kWh	\$794.67
Cell Multi	6	6	1.02 kW	0.00%	1683.00 kWh	\$420.75
Cracking	2	2	0.68 kW	0.00%	1122.00 kWh	\$280.50
Diode	75	75	8.50 kW	0.02%	14023.60 kWh	\$3505.90
Diode Multi	1	1	0.23 kW	0.00%	374.00 kWh	\$93.50
Junction Box	1	1	0.34 kW	0.00%	561.00 kWh	\$140.25
String	8	120	40.80 kW	0.08%	67320.00 kWh	\$16830.00
Vegetation	121	121	13.71 kW	0.03%	22624.74 kWh	\$5656.18
Totals	231	343	67.20 kW	0.13%	110887.02 kWh	\$27721.75

Filename	Tag Name	Section	Row X	Row Y	String X	String Y	Severity
img	Module	2	2	4	8	2	High
img	Module	1	3	28	4	2	Medium
img	Module	1	3	27	2	1	Medium
img	Module	1	2	5	2	14	High
img	Diode	2	3	6	4	3	Medium



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Solar Inspections

Why drones

Aerial images provide a broader perspective of solar farms and allow maintenance teams to receive valuable information. When analyzing thermal images, it is easier to identify potential anomalies across cells, strings, or panels. Combining thermal and visual data helps you determine if the heat anomalies are caused by faults found physically on the panel, such as delamination, cracks, dust, or internal issues such as the inability to connect to a panel due to an inverter or cable failure. Early detection of faulty elements within a solar farm will help to prevent major output deficiencies. The faster and more accurately a maintenance team can detect possible defects, the quicker they can respond and prevent major system failures. Inspections and maintenance that are effectively conducted translate into protecting the interests of investors and ensuring that the the PV system is operating at its peak efficiency.

Detailed reports

With use of thermal and visual images, the data is run into our industry leading software to detect all anomalies. These issues are then tagged, geo referenced, and reviewed for efficient remediation. Each defect from cell to string level is described with thermal and visual images for reference. Our reports also include an interactive map of your solar plant.

Overview Level Inspection

Summary: An Overview inspection is flown at the highest altitude, inspections are performed very quickly, due to a maximum flight speed of 30 MPH (48 KMH), allowing for very large sites to be inspected quickly.

Infrared thermal imagery: 10-15 cm/px resolution

HD RGB Imagery: 5 cm/px resolution

Identifiable Anomalies Include: Offline Inverters and Combiners, Anomalous Strings, Tracker Off Alignment or in Stow, and Module Level Faults affecting the entire module's performance.

Standard Level Inspection

Summary: Standard level aerial inspections balance altitude, speed, and granular site data. The level of detail in the collected data provides teams an understanding of the performance of 100% of the PV system modules.

Infrared thermal imagery: 5-6 cm/px resolution

HD RGB Imagery: 1.5-2 cm/px resolution

Identifiable Anomalies Include: All anomalies identified at the Overview level, as well as physical and visible module damage including cracked/broken modules, thin-film delamination, soiling and surface coverage of the PV module(s). Additional sub-module findings also include: diode faults, cell and multi-cell defects, and faulty junction box. Suspected PID, shading issues due to tree lines, obstructions, or adjacent rows, and damage to rows and tables.

Comprehensive Level Inspection

Summary: Comprehensive level aerial IR inspections are performed in compliance with IEC standards. It provides highly detailed, sub-module level granular data and allows teams to thoroughly understand the performance of each PV module. This inspection level offers absolute temperature accuracy and enables accurate sorting and prioritization of both module and string-level anomalies by temperature intensity.

Infrared thermal imagery: 3 cm/px resolution

HD RGB Imagery: 1 cm/px resolution

Identifiable Anomalies Include: All anomalies identified at the Overview and Standard levels as well as data analysis in accordance with IEC TS 62446-3 Technical Specification: Photovoltaic (PV) systems. More detailed classifications of single-cell hot spot with $\Delta T > 10$ K, heated junction box with $\Delta T > 4$ K, and substring in short circuit with $\Delta T > 4$ K.

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Drone Filming

Why us

Henley Air is ready to go above and beyond for your next film production with our professional team and equipment. The team consists of professionals with experience from the film industry, including Maze Runner 3, Jim Button & Luke, Garmin, The Queen, The River, Kings Of Joburg, Unmarried, Rockville, RedBull and Netflix. We are licensed by the Civil Aviation Authority (CAA) with approved flights over roads, people, controlled airspace, National key points, restricted/prohibited airspace, nighttime flights and Beyond Visual Line Of Sight (BVLOS).



DJI Inspire 2

Camera	Zenmuse X7 & X5S
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