



• 360° panoramic views

TerraScenetm Capability Statement

TerraScene offers fast, reliable 360° digital data services across Australia. We have the specialised experience to provide custom 360° panoramic views whenever and wherever required.

ABOUT YOU

You're interested in promoting your organisation and saving time and/or money

- Do you need immersive 360° scenes to allow your customers to 'see before you go'?
- Would your organisation benefit from 360° data being web accessible, or available offline in the field on a tablet?
- Would panoramic scenes immerse your customers so they experience your products or imagine your services?
- Do you need vivid, interactive images to market your products, services or location on the web?
- Does your asset management system need integration with geotagged, date-stamped, immersive imagery so you can complete pre- inspections, or compare two time periods from your office?
- Do you need to locate and measure assets from your desktop using Photogram software, or integrate existing asset locations into the 360° panoramas with Asset Finder software?
- Do you need NDRAA compliant documentation to protect your large assets in case of fire or natural disasters?
- Do you need start, progress and completion documentation for your large civil engineering projects?
- Do you have teams in multiple offices that would benefit from reviewing 360° views as part of project management controls, design reviews or progress updates?

Interactive street or landscape images can promote your business and support your customers.

Call us today to discuss how we can assist with cost-effective image capture for promotion or documentation.



PO Box 169, Freshwater, Queensland 4870
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<https://www.terrascene.com.au/>

ABOUT US

TerraScene data capture is suitable for large applications such as, asset management, Infrastructure, natural disaster relief, mining, environmental management and tourism. The imagery we provide may be reviewed within your computer system, or online. All data is geotagged with embedded location and date that, for example, makes it invaluable for pre- and post-disaster relief claims or periodic inspections.

Based in far north Queensland, TerraScene is a registered Australian business incorporated in 2019, The company is fully insured with Public Products & Liability, Equipment and Professional Indemnity insurance (see appended certificates). You can be confident that all work will be completed to the highest professional and digital standards with customer satisfaction our goal for every job. We will work with you to understand your business needs and deliver processed digital data with full IP rights to support your organisation.

Whether you need a specific site review or periodic 360° data capture that can be archived and compared to current conditions, contact TerraScene to discuss your requirements.

DIRECTORS

Alys Wall

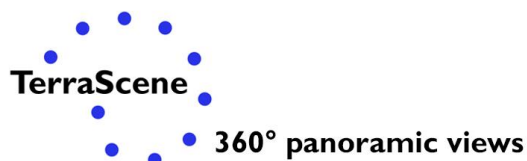
Alys brings over 30 years of Spatial Science and Geographic Information Systems (GIS) experience to the role of Director at TerraScene. She is an experienced project manager, GIS data manager and technical analyst. She is a former small business owner and was certified as a Project Manager in 2015 with the Australian Institute of Project Management (AIPM).

In Australia she has worked for all levels of government including Brisbane City Council, Cairns Regional Council, Queensland Government and for the Commonwealth at the Murray-Darling Basin Authority, the Bureau of Meteorology and the National Water Commission. She has a solid history of delivering high quality, multi-million-dollar projects on time and within budget.

Alys is a Geographer with a Master of Science in Physical Geography from The Pennsylvania State University and a Bachelor of Art from the University of Hawaii in Geography, Business and Environmental Science. She was a NASA Space Grant Fellow at the University of Hawaii. She has strong skills across many business sectors: infrastructure, planning, transportation, regulations, water, business management, climate and environmental science.

Graham Warden

Graham Warden graduated from Imperial College, London with an honours degree in mining metallurgy. He brings to TerraScene extensive scientific and management experience including former board membership of a number of industrial research associations, including those for the sugar industry and welding. Previous posts include research metallurgist with High Duty Alloys in UK, Principal Scientific Officer at the Royal Mint in UK and Technical Manager for Exide in India. The main themes of his 16 years in CSIRO at senior executive level were patents, licensing and communication with industry.



USE CASES

Asset Management

TerraScene mobile mapping supports government and private sector asset planning, construction and maintenance. Give your teams desktop and web access to 360° digital data to inspect, measure and mark-up road, building and property assets. All faces and license plates can be blurred for public data, so private information is protected.

High definition panoramic data can be viewed online or offline using the web player, or use G-publisher for integration with Google maps. All TerraScene views are device agnostic and can be viewed on any platform giving you seamless access to data in the office or in the field.



Emergency Management

Natural Disaster Relief and Recovery Arrangements (NDRRA) and State Disaster Relief (SDR)

TerraScene 360° data views provide critical evidence for pre- and post- disaster documentation that will support NDRRA and SDR submissions.

The NDRRA is a joint funding initiative of the Commonwealth and state governments to provide disaster relief and recovery payments and infrastructure restoration to help communities recover from the effects of natural disasters and terrorist acts. In Queensland, this program is managed on a whole-of-government basis by the Queensland Reconstruction Authority (the QRA).

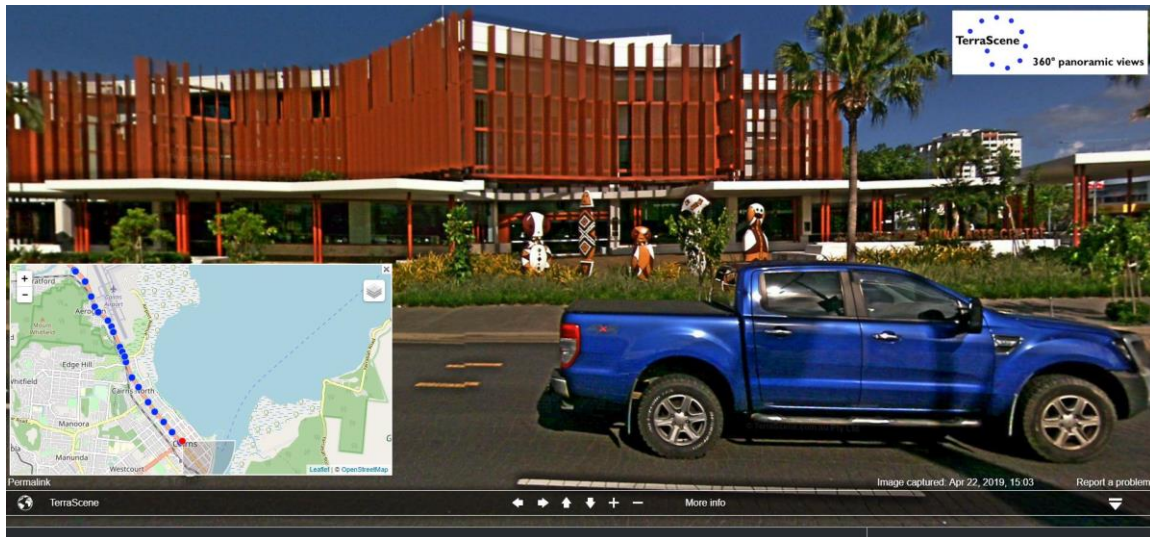
Local Government must provide evidence of asset condition that includes:

1. pre-disaster condition evidence of public assets within the last four (4) years
2. geospatial photos that are date stamped prior to damage for local government essential public assets no older than four (4) years before the eligible disaster

3. post-disaster evidence geospatial photos after damage and after repair
4. the asset is classified in an asset register with reference to asset type

We provide timely data collection of assets that may be impacted by flood, cyclones, fire or other natural disasters. All data are date and time stamped and will meet state and Commonwealth requirements.

Timely, periodic 360° data capture with TerraScene will support your asset management system and provide required pre-disaster documentation when emergencies arise that impact those assets. Contact us today to discuss your business needs and requirements.



Infrastructure

TerraScene will record your industrial projects at the frequency you request. Your customers will have web access to documentation that can be used for discussion, review and project promotion. Easily accessible 360° digital, panoramic views provide certification of pre and post planning, project progress phases, construction and maintenance.

TerraScene data supports projects in urban development, infrastructure, climate adaptation, energy, mining and health.



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Tourism

TerraScene data will capture tourist hubs for publication on your website. Potential visitors can 'Explore before you go'. Use vivid, panoramic 360° views to give visitors a compelling visual story that will sell and promote Australia as a visitor destination. TerraScene will deliver cost effective, high quality data to promote popular or unfamiliar tourism destinations.

The government tourism office in Morocco used the same 360° camera technology that TerraScene deploys to capture links to major tourist cities and sites. Visit at: <http://www.carte.ma/>

Mining

Panorama 360° data can record and track your mining assets such as equipment, terrain and buildings. Accurate field data provides important documentation for maintenance, planning, insurance and occupational, health and safety reviews. All TerraScene processed digital data for your project will be delivered to the you with full Intellectual property (IP) rights for your business needs. Contact us to discuss how to give your teams desktop and web access to 360° digital datato inspect, measure and mark-up your important assets.

Environmental Management

TerraScene data supports all types of projects including monitoring the environmental impacts or revegetation strategies during construction or remediation of closed industrial sites. We offer flexible, timely 360° panoramic data capture to support your business requirements.



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TerraScene – Frequently asked questions

What additional information is collected with each image?

The time, location, direction and position are recorded along with each image. A GNSS receiver with three GPS systems in combination with the integrated spatial unit ensure accurate position and leveled streetviews

Is there a set distance between each image?

We normally use the industry standard of 5-metre intervals; however, this may be readily adjusted to suit the application. Shorter distances provide more detail. For example, a 1-metre distance is used for data captured on foot with the backpack setup. TerraScene can also use time for data capture and set it to a maximum of 7 frames per second.

Are there limits to the time and distance travelled during image collection?

Not really! Image collection may be subject to weather conditions and daylight, but our equipment has solid-state drives that can record large volumes of information. At 5-metre intervals, approximately 200 images per kilometer can be captured. It is best to capture data between 9am and 4pm, with 200-300 km of data is typical.

Will there be GPS tracking with the project's images?

Yes. Data collection automatically captures GPS location as the 360° camera records the project. We provide route tracks as part of our deliverable.

How big are the images?

Each panorama image is 8192 x 4096 pixels, file size 4-5MB, at over 8 k resolution. For example, 100 km of processed Streetviews would require about 100GB of storage space in a corporate system.

Does the panoramic image include the full 360°?

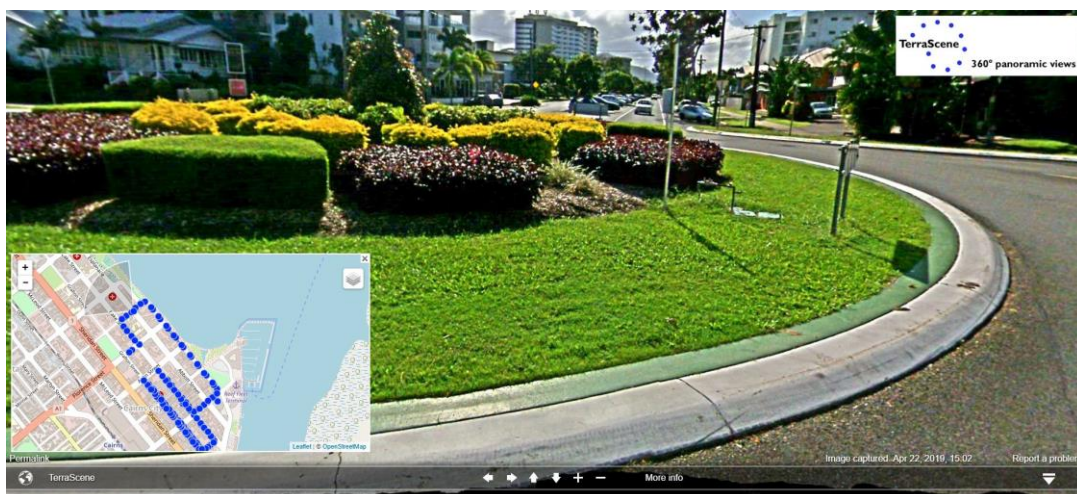
Yes, horizontal 360° and 160° vertical – showing everything but immediately below the camera.

How much space is needed for storing the images on my website?

The camera records to swappable SSDs and backed up with cloud storage. Data can be delivered to clients as a cloud download or on an external hard drive.

Can TerraScene store our images?

We provide the data to you for your enterprise system. We store a backup and can provide secure, cost effective, web- accessible storage for clients on Amazon Web Services.



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20 February 2019

To Whom it May Concern,

Jardine Lloyd Thompson Pty Ltd
ABN 69 009 098 864

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CAIRNS QLD 4870
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Certificate of Currency

Our Ref: 024556

INSURANCE CLASS	Professional Indemnity	
POLICY HOLDER	Alys Wall and Graham Philip Warden T/as Terrascene Pty Ltd	
PROFESSIONAL BUSINESS DESCRIPTION	Photographer – Provision of advice, consulting services in connection to 360 degree digital photography, videography and processing of data imaging.	
PERIOD OF INSURANCE	From: 20 February 2019 at 4 PM Local Time (QLD). To: 20 February 2020 at 4 PM Local Time (QLD).	
RETROACTIVE DATE	Unlimited, excluding known claims and/or circumstances	
LIMITS OF LIABILITY	\$1,000,000 any one Claim and \$2,000,000 in the aggregate.	
EXCESS	\$1,000 including defence costs by the insured for each and every claim.	
INSURER	DUAL Australia Pty Ltd on behalf of certain underwriters at Lloyd's	
INSURER	PROPORTION	POLICY NUMBER
Lloyd's of London through Dual Australia Pty Ltd	100.000%	PPI021797519K0

This certificate of currency provides a summary of the policy cover and is current on the date of issue. It is not intended to amend, extend, replace or override the policy terms and conditions contained in the actual policy document. This certificate of currency is issued as a matter of information only and confers no rights upon the certificate holder. We accept no responsibility whatsoever for any inadvertent or negligent act, error or omission on our part in preparing these statements or in transmitting this certificate by email or for any loss, damage or expense thereby occasioned to any recipient of this letter.

Tracey Norton
Account Manager

STD DOC [Policy Certificate of Currency for TERRASC - Policy 24556 - 20/02/2019 - NORTT]

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Fax +61 7 4035 8699
www.au.jlt.com

Certificate of Currency

Our Ref: 024709

INSURANCE CLASS	Public & Products Liability
INSURED	Alys Wall and Graham Philip Warden T/as Terrascene Pty Ltd including subsidiary or controlled companies now or previously existing or hereafter formed or acquired.
BUSINESS	Photographer – Provision of advice, consulting in connection to 360 degree digital photography, videography and processing of data imaging.
JURISDICTIONAL SCOPE	Worldwide excluding USA, Canada and their protectorates
PERIOD OF INSURANCE	From: 20 February 2019 at 4 PM Local Time (QLD). To: 20 February 2020 at 4 PM Local Time (QLD).
LIMITS OF LIABILITY	General Liability \$20,000,000 any one occurrence. Products Liability \$20,000,000 any one occurrence and in the aggregate any one Period of Insurance.
SUB-LIMITS OF LIABILITY	Property in Your Physical or Legal Control \$250,000
DEDUCTIBLE/EXCESSES	\$500 of each and every claim
UNDERWRITER	Dual Australia Pty Ltd on behalf of certain underwriters at Lloyd's

INSURER	PROPORTION	POLICY NUMBER
Lloyd's of London through Dual Australia P/L - General Liability	100.000%	PPL021797519K0

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Tracey Norton
Account Manager

STD DOC [Policy Certificate of Currency for TERRASC - Policy 24709 - 20/02/2019 - NORTT]

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