veris

Renewable Energy
Capability

About Veris

Veris is a trusted, leading provider of spatial data services. With over 450 people and 15 office locations across Australia, we combine national strength with local knowledge and expertise to ensure the best outcomes for our clients.

We provide our services to both private and public sector clients across the infrastructure, property, resources, utilities, government and defence sectors. Our impressive client list includes Australia's premier property groups, blue chip mining companies, as well as a host of major Engineering consultancies, Tier 1 contractors and Government agencies.

Our diverse geographical spread includes offices and extensive operations in Victoria, New South Wales, ACT, Tasmania, Queensland, South Australia and Western Australia. Our presence in both the major metropolitan areas and regional centres of most major States and Territories enables our clients to benefit from our local presence and national reach.

Veris has a truly national footprint, with 15 offices and over 450 people across Australia.

Solutions for renewable energy

As Australia's leading provider of spatial data services, we work closely with our clients across the full lifecycle of their renewable energy projects.

Our multi-disciplinary service offering helps our clients navigate the complex nature of renewable energy projects. From early-stage planning and development approvals, through to the application of the latest digital and spatial technologies that support virtual inspections, stakeholder engagement and smarter decision-making. At the construction stage, we offer a suite of engineering survey solutions to ensure accuracy and effectively manage risks.

We have a track record of delivery across renewable energy sources including wind, solar and hydro.

We are proud to be working together with our clients to help shape the future of the renewable energy sector in Australia.

Wind

Solar

Hydro

Our Services

GIS & Data Management

We recognise the importance of effectively and securely managing large volumes of data from diverse sources for the success of wind and solar farm projects. Leveraging our in-house expertise and strategic partnerships, we offer a range of services supported by cutting-edge technology:

- Development of project-specific spatial data specifications and management guidelines to ensure data integrity and accessibility.
- Building, hosting, and maintaining project WebGIS platforms, providing secure password-protected access to data via internet browsers.
- Deployment of mobile GIS solutions on tablets for in-field navigation, observation, and data and geotagged photo capture, enhancing efficiency and accuracy.
- Creation of stakeholder consultation material, including high-quality maps, graphics, visuals, animations, posters, and presentations, facilitating effective communication and collaboration throughout the project lifecycle.

Planning

Every project needs to work within a statutory and regulatory framework. At Veris, we partner with our clients, bringing together all the interested parties to achieve a successful outcome, providing good advice and the reassurance that the best solutions can be achieved:

- Site identification and evaluation
- Statutory and Strategic Planning
- Planning Approvals and Stakeholder Engagement
- Approval Lodgement and Application Management
- Yield Assessment
- Structure Planning
- Town Planning Scheme Amendments
- Working with policies, legislation and statutory frameworks
- Due Diligence Assessment and Reporting

Environmental

As our landscapes and communities continue to evolve, the demand for innovative and sustainable environmental strategies has never been more critical. Veris' environmental services blend cutting-edge technology with multidisciplinary expertise to support clients in achieving environmentally responsible outcomes – on time and with confidence.

Our Services

- Environmental Data Capture and Monitoring: We offer a leading suite of non-intrusive survey-grade data capture technologies for above and below ground and underwater environments.
- Environmental Data Insights: Enabling data-led decision making through analysis of complex datasets across multi-spectral imagery, survey, GIS and reality capture.
- Digital Environmental Reporting and Applications: Making complex environmental reporting easy to read and understand. Transforming your environmental reporting into a dynamic digital experience.
- Digital Environmental Strategy and Implementation: We partner on large infrastructure projects and in-house specialist teams to develop roadmaps and strategies.
- Environmental Assessments and Approvals: We provide specialist environmental services to support you from the earliest stages of project planning through to approvals

Digital Advisory

Veris brings together a unique mix of capabilities through our Digital Advisory service offering. As recognised leaders in cutting-edge technology and data analytics, we drive innovation for our clients. With decades of experience in assessing, designing, developing, and digitising the built environment, we excel in spatial data and asset digitisation. Our comprehensive understanding across the asset lifecycle ensures we are engaged from project inception through delivery, handover, and ongoing operations.

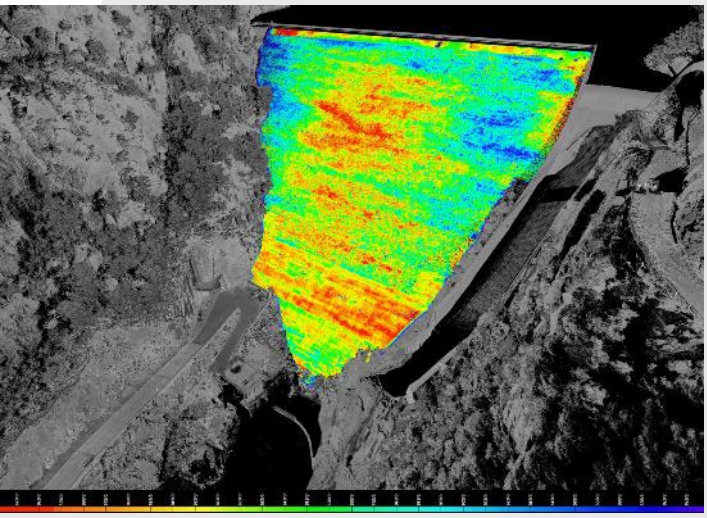
3D Spatial Services

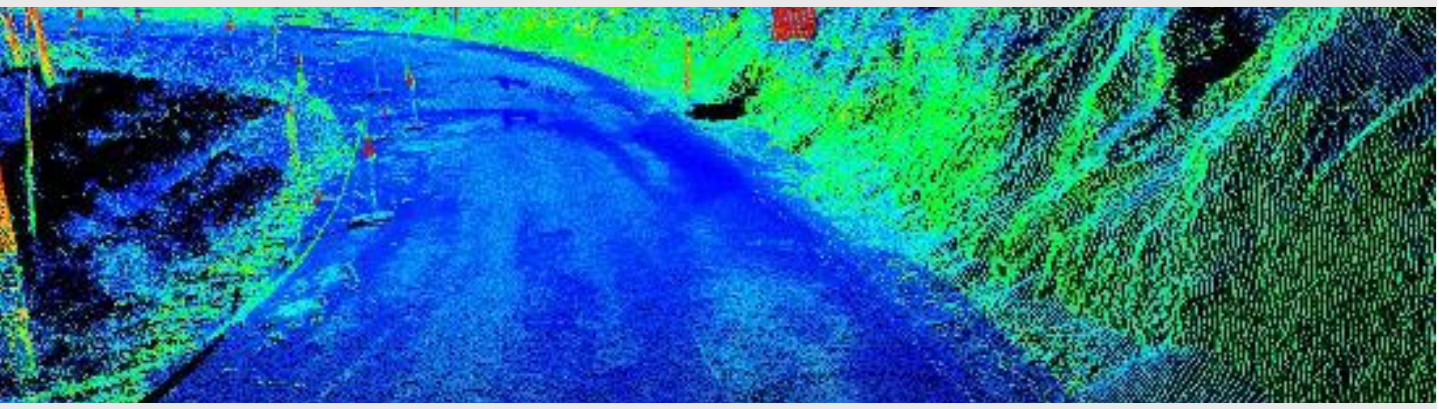
3D Spatial technology harnesses reality capture tools like drones (UAVs), LiDAR, and 3D CAD modelling to generate detailed spatial datasets. With the most seasoned 3D Spatial team in Australia, Veris possesses extensive project and industry expertise capable of meeting the most intricate client demands.

Asset Capture and Digital Twins

- Creation of digital twins from 3D spatial datasets
- Component analysis for detailed insights
- Conducting virtual site visits for remote exploration
- Utilising aerial photogrammetry and topographical mapping for comprehensive data collection
- Mobile laser scanning and corridor mapping with route analysis to facilitate efficient site asset delivery.

Veris' 3D Ground Penetrating Radar (GPR) technology offers a revolutionary method for obtaining a comprehensive, three-dimensional view of subsurface structures and features, ensuring thorough site understanding and planning.





Cadastral & Land Surveying

With Veris' team of local land surveyors and state-of-the-art survey equipment, we are equipped to handle even the most demanding and remote environments. We have teams of land surveyor specialists in each state and pride ourselves on delivering titling and spatial solutions that are one step ahead.

Our services include:

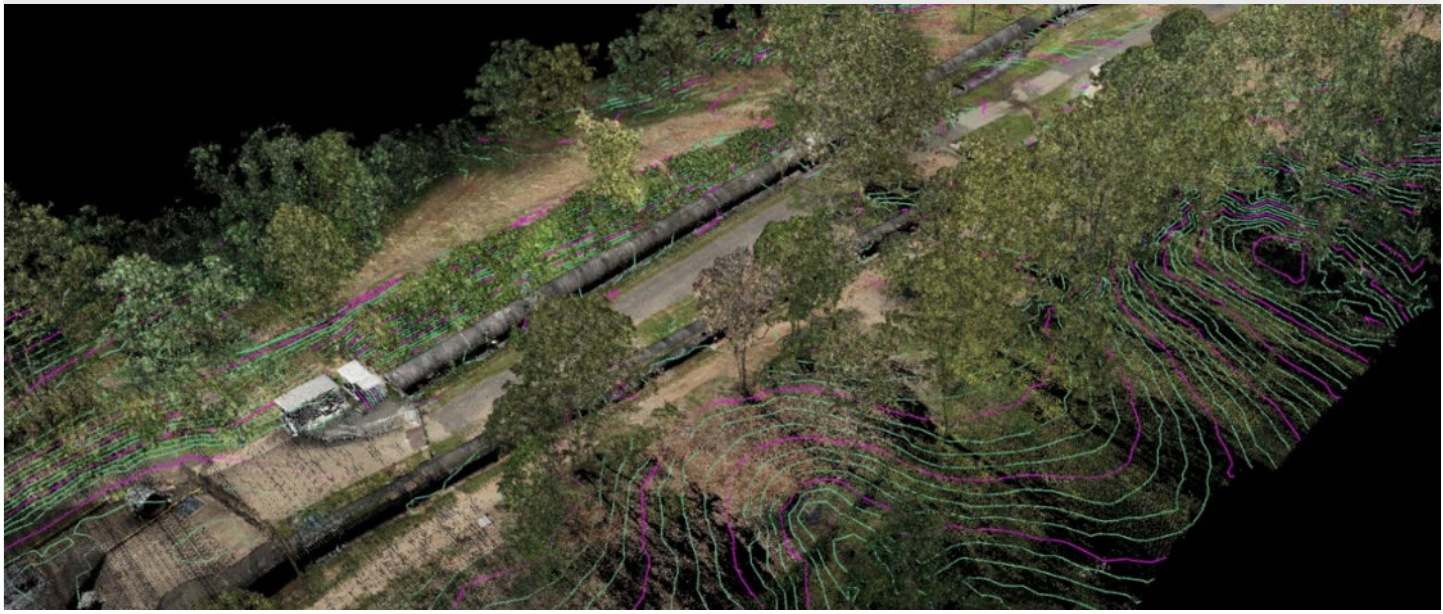
- Thorough title and easement analysis and reporting
- Expertise in subdivision, lease, and easement creation
- Establishment of site and photo control points to facilitate aerial photography and future construction projects
- Conventional feature and level surveying techniques, ensuring accuracy and reliability.

Civil Construction & Engineering Surveying

With a renowned reputation for precision and an extensive track record across various sectors of the building and civil construction industry, we deliver land surveys that guarantee the quality, safety, and success of diverse projects.

Our services encompass:

- Surveying for the layout of civil works, including access roads, services, site buildings, and associated structures.
- High-precision setting out of site assets, such as turbines and photovoltaic panels.
- Conducting as-constructed surveys of completed works to ensure accuracy and compliance.
- Detection, collection, and mapping of underground assets, including utilities.
- Monitoring services for quality control and movement, ensuring the integrity and stability of structures throughout the project lifecycle.



RoadSiDe
a Veris platform

Your Ultimate Solution for Road Condition Assessment on Renewable Energy Projects

RoadSiDe is a comprehensive platform that supports route assessment, road upgrades, and dilapidation reporting, all in one place. By integrating advanced scanning technology, AI-driven analytics, and detailed visualisations, RoadSiDe streamlines the entire process, reducing time and costs.

This unified approach ensures that roads are accurately assessed for transporting renewable energy equipment, identifying necessary upgrades, and managing any damage caused by increased project traffic.

RoadSiDe's capabilities empower efficient decision-making and proactive maintenance, optimising budget allocation and enhancing your road infrastructure's safety and reliability.

How RoadSiDe Works: Unleashing Cutting-Edge Capabilities

Utilising advanced scanning technology and data analytics, RoadSiDe offers a comprehensive understanding of road infrastructure. Mobile laser scanning, drone surveys, and 3D Ground Penetrating Radar enable rapid data capture over vast distances, providing detailed insights along the road corridor. The collected data is processed and delivered through the cloud-based RoadSiDe platform, powered by AI and advanced analytics.

Solution Features

Comprehensive Road Condition Assessment: RoadSiDe integrates sophisticated point cloud, pavement imagery, and spherical imagery capture, providing a holistic record of road features. Advanced analysis includes assessment of pavement surface conditions, identification of cracks, measurement of road width, and documentation of roadside features and signs.

Dilapidation Reporting: RoadSiDe delivers detailed dilapidation reports to assess the current state of roads. Dilapidation reporting on the condition of existing roads will enable the subsequent assessment and management of any damage caused by increased project vehicle traffic throughout the project.

Route Analysis for Equipment Transport: RoadSiDe conducts thorough route analysis to determine whether roads can accommodate the transportation of renewable energy equipment. This includes assessing road width, surface conditions, and potential obstructions.

Proactive Maintenance Planning: Detailed analysis enables a thorough understanding of road conditions, facilitating proactive maintenance planning and informed decision-making for infrastructure development. Periodic scans identify areas of pavement deterioration, aiding in estimating repair costs.

Efficient Clash Detection: RoadSiDe conducts clash detection against objects impeding on the road corridor, identifying potential collisions between heavy vehicles and construction materials. Allowing for the design of solutions before construction commences, mitigating risks and minimising disruptions.

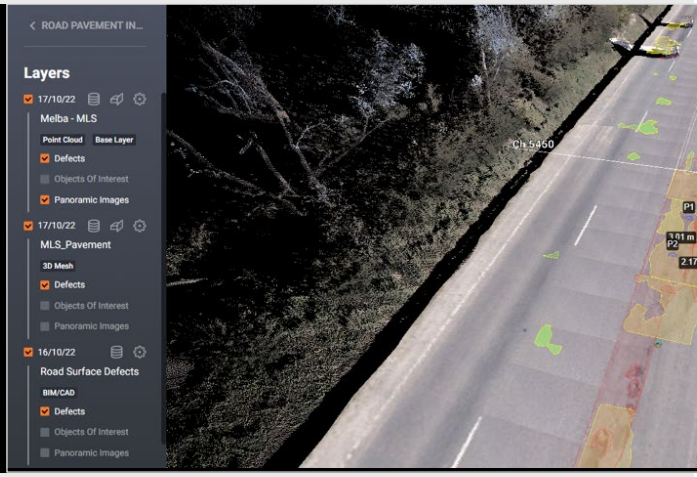
Customised Dashboard Development: Tailored dashboards house and display all captured data, enhancing project transparency and communication. Easy access to critical project information supports efficient management.

User-Friendly Visualisation and Collaboration: RoadSiDe provides a powerful 2D and 3D visualisation and analysis experience accessible through any web browser, eliminating the need for proprietary software and enabling real-time design and collaboration, facilitating efficient project management and decision-making.

Rapid Identification and Analysis: AI and spatial analytics enable faster identification, analysis, and quantification of road damage, surpassing traditional approaches by providing a complete 3D Digital Twin of the road network.

Experience RoadSiDe: Revolutionise Your Road Management

RoadSiDe empowers you to access a complete virtual picture of your road corridor and network. Embrace the future of road maintenance with RoadSiDe and make informed decisions, optimise budgets, and ensure the safety and longevity of your road infrastructure.



RoadSiDe Benefits

Optimised Budget Allocation: Informed decision-making ensures efficient use of resources for road maintenance and upgrades.

Enhanced Safety: Reduced need for on-site inspections minimises traffic management and safety risks.

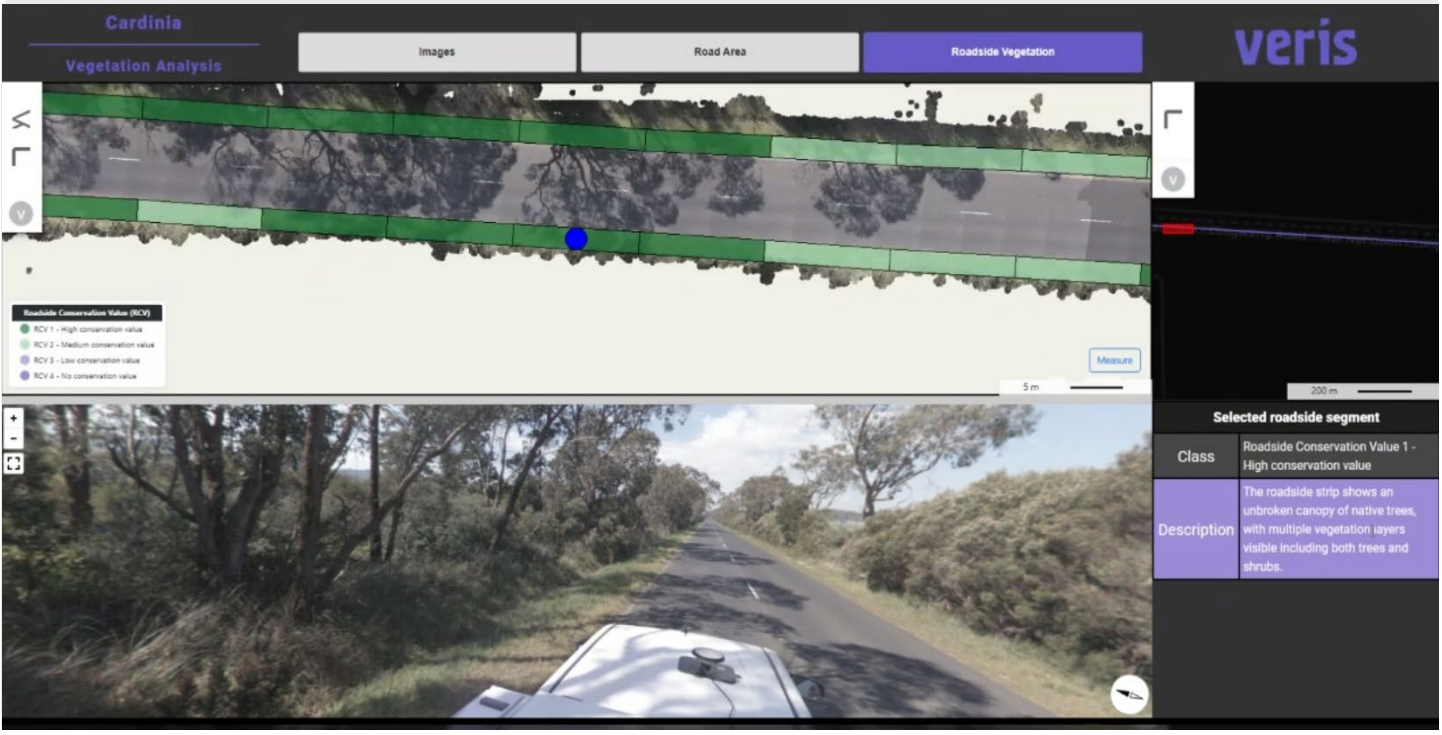
Proactive Maintenance: Predictive analytics help anticipate and address road issues before they become critical.

Streamlined Operations: Faster data processing and analysis support timely project completion.

Collaborative Planning: Real-time data sharing enhances stakeholder engagement and coordination.

Capture Once, Use Many Times: Maximise the value of captured data for road safety, asset management, vegetation monitoring, community engagement, and more. The data can be used for road upgrades, scenario planning, and integration into existing Digital Twin platforms.

Revolutionise your road management strategy for renewable energy projects with RoadSiDe and ensure your road infrastructure's safety, efficiency, and longevity.



Our Experience

RoadSiDe Route Assessment

Client	**Confidential**
Location	**Queensland**
Contract Period	**2024**
Sector	**Utilities**

A $5 billion project was launched to connect a region to the National Electricity Market, involving the construction of 840 km of transmission lines. The survey covered over 1,000 km of road, with tight deadlines and complex data processing requirements.

The Challenge

The project faced several significant challenges, primarily driven by the scale of the task and tight deadlines. The survey covered over 1,000 kilometres of road, making it the largest Mobile Laser Scanning (MLS) RoadSiDe survey to date. The extensive data collection and processing requirements tested the limits of the automated data ingestion and analytics systems. Additionally, the rapid turnaround was critical to allow truck route planning to begin promptly.

A key technical challenge was identifying the width of the roads in sufficient detail to ensure two concrete trucks could pass each other safely at any point along the route. The data collected was essential for identifying bottlenecks, enabling the client to plan roadworks for widening where necessary.

One of the main client concerns was ensuring safe access to the road corridor for surveying without requiring traffic management, prioritising safety at all times.

Customisation of the solution was also needed to meet the specific technical needs of the project, with new algorithms needing to be developed to support the fast-paced delivery.

Balancing the technical demands with the need for a cost-effective solution, all within the tight timeframe of under six months, added to the complexity of the project.

Our Solution

Veris worked closely with the Client to deliver a comprehensive, data-driven solution using automated analytics.

Mobile Laser Scanning (MLS) Deployment

Veris deployed mobile laser scanning (MLS) technology to safely capture detailed data along both sealed and unsealed roads using LiDAR and high-resolution imagery. This process generated an asset-grade visual record.

Renewable Energy Sector Experience continued

RoadSiDe Route Assessment continued

Dilapidation Analysis and Reporting

Dilapidation reports including cracking and rutting were generated for each local government area (LGA) along the project route. These reports, with chainages corresponding to each LGA, included a comprehensive GIS dataset. This approach facilitated early positive engagement between the project team and the local councils.

RoadSiDe Platform

All data collected was uploaded to Veris' cloud-based platform, RoadSiDe. This dashboard, accessible via any web browser, allowed stakeholders to visualise road conditions in both 2D and 3D. Tools within the platform enabled analysis of road width, surface conditions, and a Pavement Condition Index (PCI), giving clear understanding of overall road quality.

Routing Analysis

An automated algorithm performed routing analysis by identifying road widths at two-metre intervals along the route. Roads were categorised based on their suitability for truck routing, with the highly accurate MLS data providing a solid foundation for these calculations.

Intersection extraction for design

Veris extracted detailed features from the MLS data for 44 intersections, including centre lines, fence lines, power lines, road furniture, and changing grades. These features were sent to engineers for intersection design and upgrades and drafted into terrain models and PDF plans to support the next phase of the project.

Outcomes

The use of advanced technology to assess road widths and conditions placed the Client at the forefront of detailed planning and risk management, providing a comprehensive baseline survey of the road network during project establishment.

Key benefits include:

- **Safety:** Positive feedback from the construction manager for keeping personnel off the road corridor, enhancing safety.
- **Rapid Data Capture and Delivery:** 1,000 km of road data captured in under two weeks, with staged delivery via the platform in the following weeks.
- **Improved Route Planning:** Enabled the client to identify areas of concern that were previously unknown.
- **Detailed Baseline:** Remote access to a detailed view of the entire site at project inception, improving risk management.
- **Remote Access and Customisation:** The ability to remotely review the road corridor from Brisbane allowed daily use for planning, with dashboard customisation based on project needs.

This innovative, technology-driven approach empowered the Client to make informed decisions and effectively manage the road network and project risks.

Renewable Energy Sector Experience continued

Offshore Wind Farm

Client	**Confidential**
Location	**Victoria**
Contract Period	**2022**
Sector	**Wind**

The proposed Wind Farm will harness strong Bass Strait winds to supply up to 20% of Victoria's energy needs and create long-term local jobs once it is up and running.

The Challenge

With the project being in the feasibility and development phase, visualisations were critical in telling the story of the project and ensuring community and stakeholder support for the landmark renewable energy project

Our Solution

Veris partnered with Spatial Media to help stakeholders explore the project and see examples of how the wind farm could look from shore. The interactive engagement portal developed includes a virtual tour, rendered images from different viewpoints along the coast, explainer videos including an interactive 3D model of a wind turbine, video tours and a full interactive 3D model on a Kiosk on site in the community information centre.

The specific scope delivered by the Veris team included data capture, ground control, drafting and data processing.

Outcomes

The visualisations are valuable engagement tools allowing the project team to effectively communicate and consult with Traditional Owners, stakeholders, local communities and landholders. It will also play a key role in the community consultation process.

Renewable Energy Sector Experience continued

Granville Harbour Wind Farm

Client	**Granville Harbour Wind Farm**
Location	**Tasmania**
Contract Period	**2020**
Sector	**Wind**

The Granville Harbour Wind Farm is a 112 MW facility located near Zeehan, on the picturesque West Coast of Tasmania. The wind farm's 31 turbines produce around 400,000 gigawatt hours of clean, renewable energy every year.

The Challenge

The Granville Harbour Wind Farm commenced construction in 2018 and reached commercial operations in 2020. Our client required a range of surveying services to support the construction phase and beyond.

Our solution

Our multi-disciplinary service offering for the project included aerial, volume, monitoring and property surveys. This included:

- Ortho-rectified aerial photogrammetry for as-constructed information of the completed wind farm development.
- Monitoring of land slip areas during construction.
- Volume surveys including the calculation of volumes of material used from on-site during the construction phase.
- Preparation of the lease plan including all road accesses and hardstand areas associated with the turbines and infrastructure.

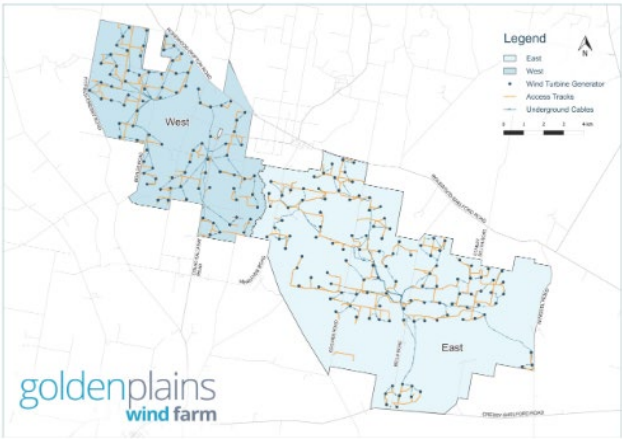
Outcomes

Our capacity to provide services to a remote region on Tasmania's west coast ensured we were able to meet the client's surveying requirements for the Granville Harbour Wind Farm.

Renewable Energy Sector Experience continued

Wind Farm Route Assessment

Client	**CitiPower & Powercor**
Location	**Golden Plains, Victoria**
Contract Period	**2022**
Sector	**Wind**



The Golden Plains Wind Farm project involves the establishment of a wind energy facility including wind turbines and associated electrical infrastructure in the Shire of Golden Plains, Victoria. The wind farm has planning approval for up to 228 turbines, with a current design comprising 215 turbines.

The Challenge

Electricity suppliers CitiPower and Powercor needed to perform a route assessment, in particular the clearance dimensions of the powerlines to the roads, for the purpose of clash detection between heavy loads (including Wind Turbine Components) and powerlines. This included several different routes each over 100 km in distance.

Our Solution

With relative accuracy more important than absolute accuracy, we recommended and deployed a mobile laser scanning (MLS) solution using the Leica *'Pegasus Two: Ultimate.*

The dual head MLS system enabled us to capture two angles on the structures and obstructions in the single pass. Using base stations along the route, there was also no requirement to perform control or infill surveys.

Outcomes

Our methodology for completing the works using a dual head MLS system delivered relative accuracy of <10mm, whilst providing significant safety and efficiency gains compared to other methods. The resulting point cloud delivered to our client will inform future planning and design considerations.

Renewable Energy Sector Experience continued

Willogoleche Windfarm 119MW

Client	**AECOM**
Location	**South Australia**
Contract Period	**August 2018**
Sector	**Wind**

In August 2018 Veris were engaged by AECOM to provide surveying services to assist with the creation of the lease plan over the recently completed Willogoleche Windfarm.

The Willogoleche Windfarm is located approximately 170km north of Adelaide near the town of Hallett in South Australia's Mid-North Region. The windfarm consists of 32 turbines and has a combined generation capacity of 119MW.

Working closely with the windfarm owner Veris's initial task was to create an overall site plan showing all turbines, laydown areas and crane pads at each turbine location. These features were overlayed with the property boundaries in the area and the document used to assist with the negotiations between the asset owner and landowners.

This information was compiled by one of our Licensed Surveyors who was tasked with the re-establishment of the 16 properties that contained the windfarms turbines and associated infrastructure.

Once the required area at each turbine was agreed upon our next task was the creation of the lease plan which delineated all these individual areas. This plan was drafted by our in-house draftsman to lease plan specifications and lodged at the Lands Titles Office.

During the project our team was able to help our interstate client navigate the South Australian requirements and our large resource pool meant we could quickly and efficiently respond to variations to the initial plan. Operating under a tight timeline we were able to prioritise our client's requirements, meet their deadlines and deliver a successful outcome.

Renewable Energy Sector Experience continued

Mt Fyans Wind Farm 400MW

Client	**Woolnorth Renewables**
Location	**Mortlake, Victoria**
Contract Period	**March 2020**
Sector	**Wind**

Veris were engaged by Woolnorth Renewables in March 2020 to provide GIS, Town Planning and Land Surveying consultancy for their Mt Fyans Wind Farm project which is situated 5km north of Mortlake in south western Victoria.

Covering approximately 13,000ha, the project has a projected capacity of 400MW, using around 85 wind turbines with a maximum tip height of 200m. The project utilises nearby existing electrical infrastructure and the Mortlake substation. The project is currently in the planning approval phase with an outcome expected by the end of 2020.

Our scope of works includes but is not limited to the following;

- Establishment of a centralised GIS including associated documented data exchange standards and protocols, data collection and delivery specifications.
- Building and maintaining a WebGIS for sharing spatial data, web maps and web apps.
- Complete a full review of all land ownership, land title and existing easement information and integration within the WebGIS.
- Review existing LiDAR data and acquisition of additional aerial photography and LiDAR data where required.
- Assist the building habitation assessment and ground truthing with town planning and GIS capabilities.
- Prepare and deploy a mobile GIS map app with associated user guides and training for efficient in-field data update and capture.
- Specialised spatial data analysis and research to assist with the wind farm design process (turbines, cable routes, access roads) using multicriteria constraints mapping and route analysis.
- Delivery of GIS visualisations, photographic simulations, project posters and other stakeholder and community engagement collateral.

Renewable Energy Sector Experience continued

Whitsunday Solar Farm 69MWp DC - 149ha
Hayman Solar Farm 69MWp DC - 176ha

Client	**RCR (Engineering, Procurement, Construction & Commissioning)**
Location	**Collinsville, Queensland**
Contract Period	**September 2017 – June 2018**
Sector	**Solar**

Veris were the primary surveyors on Edify Energy's solar farms near Collinsville, called Hamilton and Whitsunday. The solar farms are located approximately 100km West of Proserpine or 80km South West of Bowen and are in the vicinity of the Collinsville coal-fired power station and closely adjoin a Powerlink Substation. The total project is worth an estimated $200M.

Located on a greenfield area, with a combined total of 138MWp DC, over 495,000 solar panels will feed energy into the nearby electrical grid. The project was operational by June 2018 and will produce enough energy to meet the needs of almost 62,000 homes.

Veris were engaged on the project under two separate contracts, providing survey services to St Hilliers (piling) and Nilsen (electrical). Veris services included:

- Ground-truthing to ensure completed earthworks met design parameters
- Calculation of the approximately 58,000 posts that hold up the solar panels
- Establish GPS control onsite and scale the control to ground
- Confirmation of the location of the lease boundaries
- Breaking down the GPS control into 150m loops that can be used by the field surveyors to set-out the posts
- Setout of approximately 58,000 Galvanised Iron Nails (GIN) which mark the corner of the post holding up the panels
- Recording the ground level of each GIN so a grade check can be completed
- Office calculation of the height of the end posts and embedment depth of all the posts to ensure they comply with the design criteria
- Working closely with the piling crews to ensure the correct information is being used onsite
- Setout and as-constructed survey of all electrical services
- Providing as-constructed data of the posts onsite.

Renewable Energy Sector Experience continued

Hayman Solar Farm - 60MWp DC Daydream Solar Farm - 180MWp

Client	**RCR (Engineering, Procurement, Construction & Commissioning)**
Location	**Collinsville, Queensland**
Contract Period	**September 2017 – June 2018**
Sector	**Solar**

Veris were the nominated primary surveyors on Edify Energy's two newest Solar Farms near Collinsville, called Hayman and Daydream. The project is worth an estimated $315M.

Covering approximately 650ha, the project has a combined total of 240MWp DC, using around 2 million solar panels and utilises nearby existing electrical infrastructure and substation. The project was operational in August 2018, producing enough energy for almost 73,000 homes.

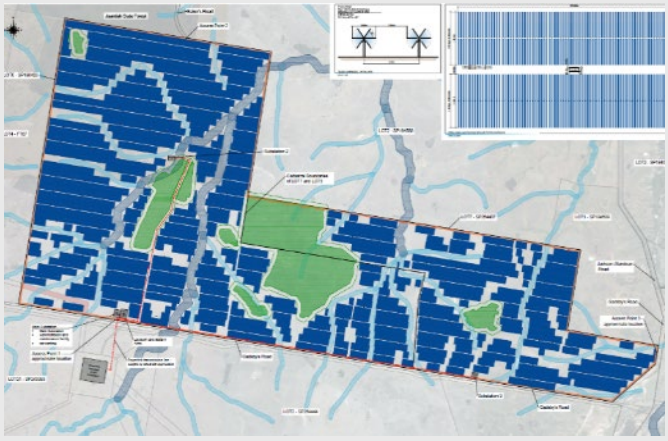
Our scope of works includes but is not limited to the following;

- Site survey control network and setup of a centralised GNSS base station
- Using our solar experience, strategise with the client to create new methodologies for all aspects onsite with the intention of increasing productivity
- Confirmation of Lease boundaries
- Setout survey of:
  - Approx. 113,000 piles
  - Fence lines
  - Electrical lines
  - Internal roads for civil construction
  - Transformer pads
- Ground truthing of LiDAR surveys
- Review of engineering design surface models
- Calculation of cut and fill for the earthworks
- Creation of machine guidance models for onsite machinery
- Calculation of the pile heights to suit the finished surface
- Subsurface mapping of the bedrock using Ground Penetrating Radar or Dualem Connectivity.

Renewable Energy Sector Experience continued

Wandoan South Project 1000MW

Client	**Vena Energy**
Location	**Wandoan, Queensland**
Contract Period	**2017 - current**
Sector	**Solar**



The Wandoan South Solar Project (WSSP) is located near Wandoan, 400km north-west of Brisbane in south-west Queensland. The WSSP will be connected to Powerlink's Wandoan South Substation, located to the south of the project site.

The project, which will consist of solar photovoltaic (PV) panels, has a proposed generation capacity of up to 1,000 megawatts (MWac) and will generate electricity equivalent to the annual needs of up to 400,000 homes. The project will be one of the largest solar projects in Australia once completed.

Veris scope included the validation of the property extents through the location of the property boundaries and easement encumbrances as well as capture of a digital terrain model across the site using aerial lidar and ground truthing to deliver a terrain accuracy of +/- 100 – 200mm.

Veris were responsible for the following service delivery:

- Compilation of survey tenure information including property boundaries and easements
- Ground control and truthing for topographical mapping
- Aerial Lidar capture across the site.

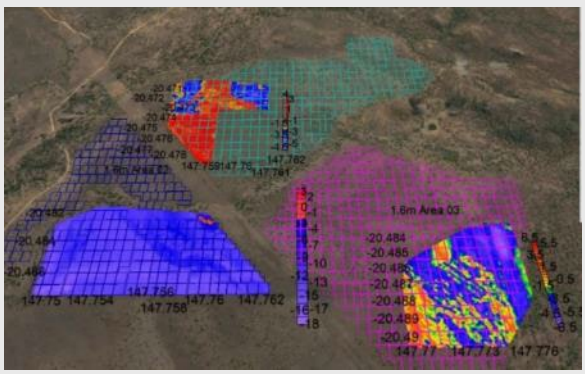
Renewable Energy Sector Experience continued

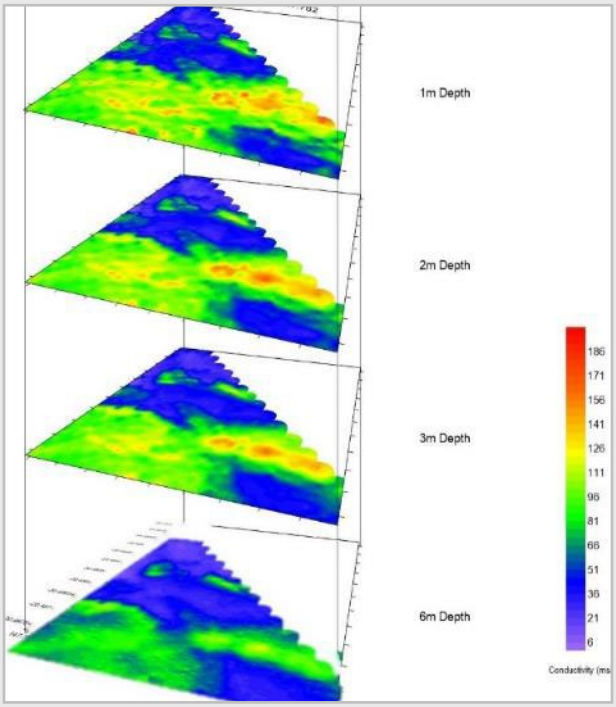
Bedrock Mapping & Survey Whitsunday Solar Farm

Client	**Edify Energy**
Location	**Whitsunday, Queensland**
Contract Period	**2018**
Sector	**Solar**

Veris were tasked with mapping subsurface bedrock on the site that was impacting operations with over 50% of piles being refused. Existing borehole data only identified the presence of bedrock but not the actual extent. The subsurface mapping team at Veris deployed the following innovative approach:

- Ground sampling test using ground penetrating radar to identify underlying surface conditions to determine best geophysical approach.
- Due to extent of site and adverse ground conditions, devising an acquisition technique to measure ground conductivity using a state of the art Dualem Conductivity Sensor towed in a specially constructed cart.





- Calibrating collected conductivity values with existing pile refusal data to increase the accuracy of conductivity findings.

This solution allowed Veris to accurately map the extent of subsurface geology for the entire 600-hectare site in a matter of weeks.

The geophysics team then produced accurate “heat” maps that identified areas of harder bedrock as well as softer geomorphology at target depths.

This allowed site engineers to devise the most efficient ground penetration methods to the mapped subsurface conditions.

The data was invaluable to the client as it allowed informed planning that resulted in significant time and costs savings as well as drastically reducing pile refusals.

Renewable Energy Sector Experience continued

Sandfire Solar Power Project

Client	**DeGrussa Mine**
Location	**Perth, Western Australia**
Contract Period	**August 2015 – February 2016**
Sector	**Solar**

Veris were the nominated primary surveyors on the $40M Sandfire Solar Farm project in WA. Located 900Km NE of Perth, Degrussa Gold and Copper mine is a fully established resource centre for the Asia Pacific region. PV Cells, inverters and battery stations are all new additions to the mine site, ensuring a reliable source of renewable energy.

A total of 4,700 posts were drilled into the surface to support the PV Cells. The tolerance of these posts was strict due to the fixed requirement of the carry-arms and rails on the solar mounted units.

Creating a new independent survey control network, Veris ensured the absolute accuracy of the installation of all posts to a fixed horizontal tolerance of <5mm horizontally, and ensuring the vertical tolerance remained below 2mm with digital levelling accuracy. With a total of four engineering surveyors onsite at maximum output, the project was successfully managed on site by our experienced team.

Due to the nature of the project and the construction methods proposed, it was essential to adopt an intense grid of survey control stations to monitor the accuracy of the installation. With the number of posts exceeding 4,700, sightlines and control visibility would have been an issue. Foreseeing this problem due to previous experience, the survey team were able to carry out their tasks without causing delay to the construction schedule.

It is this forward thinking and risk assessment planning which adds significant value to our clients and is why Veris are requested as nominated surveyors with existing clients time and time again.

The project ran for 10 months, and Veris were involved from original layout and design analysis, from construction and installation of the superstructure, PV Cells and electrical components, through to commissioning and final handover to the client.

Renewable Energy Sector Experience continued

Miriam Vale Solar Farm

Client	**Quinbrook Infrastructure Partners / Private Energy Partners**
Location	**Queensland**
Contract Period	**2023**
Sector	**Renewables**

Veris were engaged by Private Energy Partners to undertake preliminary planning due diligence against the Gladstone Planning Scheme, the State planning regulations (*Planning Act 2016, Planning Regulation 2017 and State Planning Policy*) and Federal policies.

Renewable Energy Sector Experience continued

Data Centre & Battery Energy Storage System

Client	**Quinbrook Infrastructure Partners / Private Energy Partners**
Location	**Queensland**
Contract Period	**2022 - present**
Sector	**Renewables**

Veris are engaged by Quinbrook Infrastructure Partners / Private Energy Partners to provide planning and property surveying consultancy for the Supernode Data Centre and Battery Energy Storage System (BESS) in Brendale, Queensland.

Our scope of works includes, but not limited to:

- Strategic development advice into layout and design
- Confirmation of referrals and environmentally relevant activities
- Management of relevant subconsultants
- Application for and approval of all required planning permits including the substantive Material Change of Use, Reconfiguring a lot and Change (Minor / Other) approvals
- Review of conditions of approval and subsequent negotiation with Council and referral agencies
- Preparation of relevant proposal plans
- Property survey associated with the proposal

Quality Management and Safety Systems

Veris operates under an accredited HSEQ management system ensuring the consistent quality of our delivery to every client. Through proactive planning of all work activities, we ensure that clients receive a streamlined solution and criteria suitable for the specific project.

Veris and its employees are dedicated to the application of our quality processes and systems which govern all business operations.

Veris is committed to providing quality work to a quality standard which achieves high levels of client satisfaction.

Veris operates under an accredited Health, Safety, Environment and Quality (HSEQ) management system that is certified to the highest international standards for

- **ISO 9001 :** Quality management systems
- **ISO 14001 :** Environmental management systems
- **ISO 45001 :** Occupational health and safety management systems.

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