

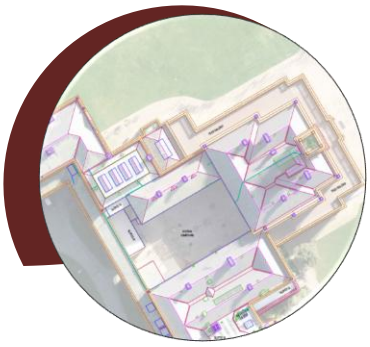
Surveying and spatial solutions for **Heritage Architects**

Landair Surveys

Across Victoria and New South Wales, Landair Surveys is enabling heritage architects **to plan and design with confidence** – by accurately capturing and sharing intricate building details and site features. **Learn more at landair.com.au**

Why choose **Landair Surveys**

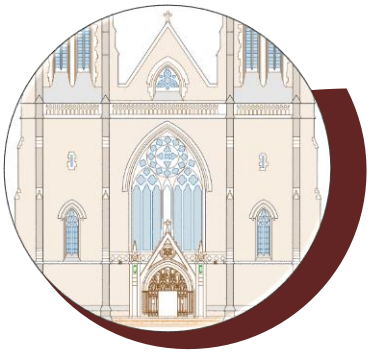
We know how important it is for heritage architects and consultants to understand every detail of their projects – down to the millimetre. **That's why:**



we make accuracy our priority, to deliver data that architects can trust



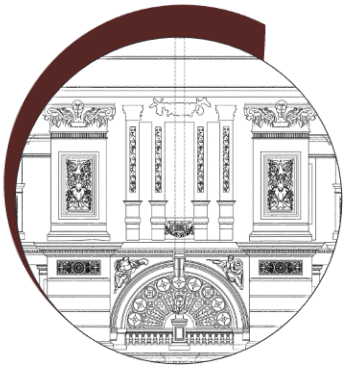
we capture all the details you need from intricate coursework to overall site context



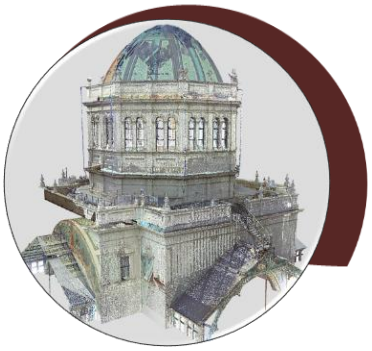
we have decades of experience surveying all things heritage



we know your processes and are with you each step of the project



We take safe work seriously and have the right insurance levels – PL & PI



We always work professionally and commit to ongoing communication

What some of our **Long-term Clients** say about us…

Data quality and attention to detail are what Landair do best. We have a close working relationship with the team and they provide input and intellect you won't get elsewhere."
Harry Jess
Director at Conservation Studio

Landair has a lot of experience with heritage sites, which not all surveyors do, so they can provide a level of detail that others don't. Plus, they're very open and transparent on project timings."
Max Bracher
Associate at Extent Heritage

3D Reality Capture
Mobile Laser Scanning



Never experience a data shortfall again. At Landair we use the wearable NavVis VLX3 for our mobile scanning tasks.

How it works…

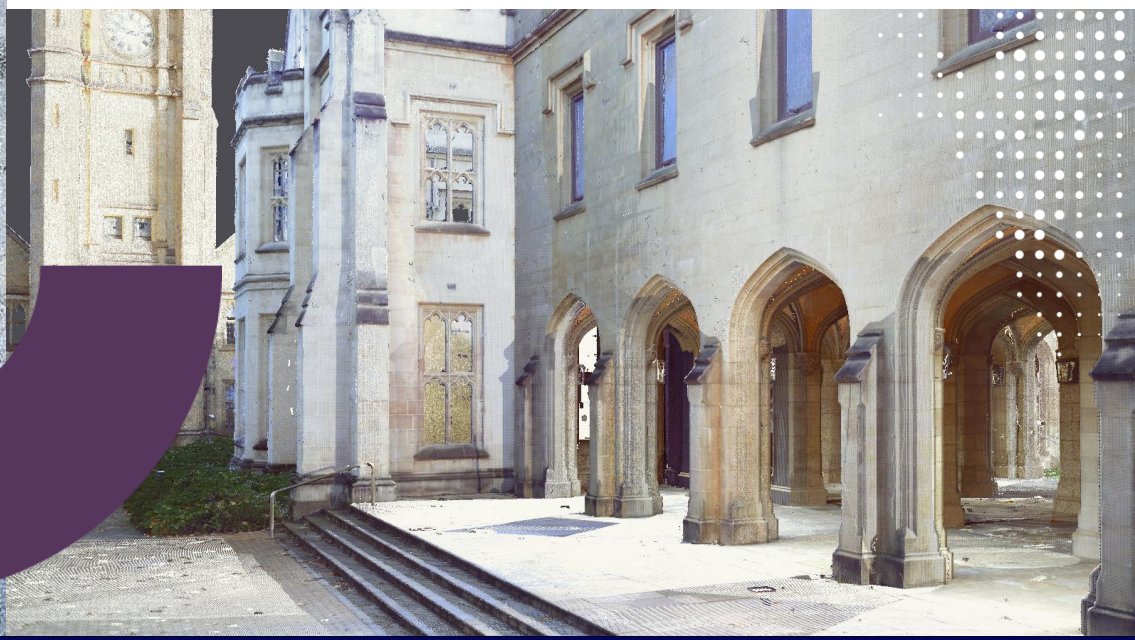
Essentially, everywhere we walk we measure. A site walkthrough becomes a full site pickup leading to faster fieldwork, lower costs, and no compromise on the data quality heritage architects need. Mobile scanning hits that Time/Cost/Quality sweet spot. It flips the traditional scanning process. Instead of fixed setups, the VLX3 uses the stable geometry around it to track its position building up a 3D picture as it moves.

The Result – a clean, colour-balanced pointcloud accurately aligned to your project's coordinate system.

You get a virtual snapshot in time, a dense project pointcloud with 5mm point spacing. Choose between structured and unstructured pointclouds – with structured pointclouds you can take advantage of the 100s of embedded 360° images for virtual walkthroughs; with unstructured pointclouds you benefit from lower file sizes suitable for architectural software import.

Where it works best…

- **When time on site is critical: think heritage church precincts or universities**
- **Where project specs allow ±10mm indoor / ±15mm outdoor accuracy**
- **Where the built environment provides strong geometry for positioning**
- **Where broad site context matters more than sub-5mm details**
- **When large areas make traditional scanning inefficient**



3D Reality Capture
Static Laser Scanning



When the finer details are paramount, a traditional laser scanner is the best tool in the Reality Capture toolbox

Why traditional?

Sometimes the ornate coursework on a heritage façade is more important than the overall site context. When the intricate details matter, traditional laser scanning is the method of choice. Static, or stationary, laser scanners are set up on a tripod at each critical location and moved systematically throughout the survey zone. The surveyor makes sure there is enough overlapping calibration targets (like scanning spheres) between scans to ensure highly accurate scan-to-scan registration and tight alignment to the site coordinate system.

What you get? A highly accurate, structured pointcloud with point spacings between 1 & 5mm.
How accurate? Think ± 3mm for individual scans and normal overall pointcloud accuracy of ±5mm.

When traditional 3D scanning makes sense…



- When ornate details matter
- When data accuracy is non-negotiable
- When facades or building interiors are complex
- When the scanner needs to be raised or lowered to measure critical locations



Drone Flyovers
& Roof Inspections

Whether it's restricted roof access or the need for up-to-date aerial imagery, **Drone Flyovers** are one way heritage architects gain that additional site context



With over a decade of RPA (drone) flying under our belts we stand ready to take to the skies above your heritage site for a bird's eye view



All our drone pilots are CASA-licensed and fly under our RPA Operator's Certificate (ReOC). We maintain a strong safety culture and proactively engage with all the stakeholders on our heritage projects. Our fleet of mapping and inspection drones are all CASA-registered and we even have additional drone-specific Public Liability Insurance

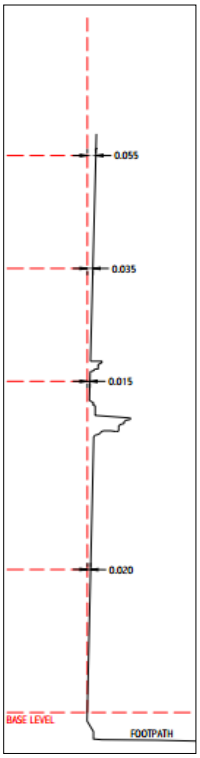
How we help...

- **Orthoimages for overall site context and plan underlay**
- **Close-up roof imagery to assist with condition assessment reports**
- **Turn drone images into pointclouds for site terrain or rooftop infill data**





Monitoring Surveys



The team at Landair are often engaged by heritage consultants for ongoing analysis of façade movement or structural deformation.

High-accuracy measurements are taken at key locations on the building to track changes in movement and verticality over time. These measurements fall into two survey categories:

Traditional, static **3D Laser Scanning** is often the best tool to initially determine locations on a façade showing wall lean or bowing. With a scanning accuracy of ±3mm the stationary scanner measures millions of points across the façade. Back in the office the surveyor is then able to analyze the data and show areas of deviation based on input tolerances.

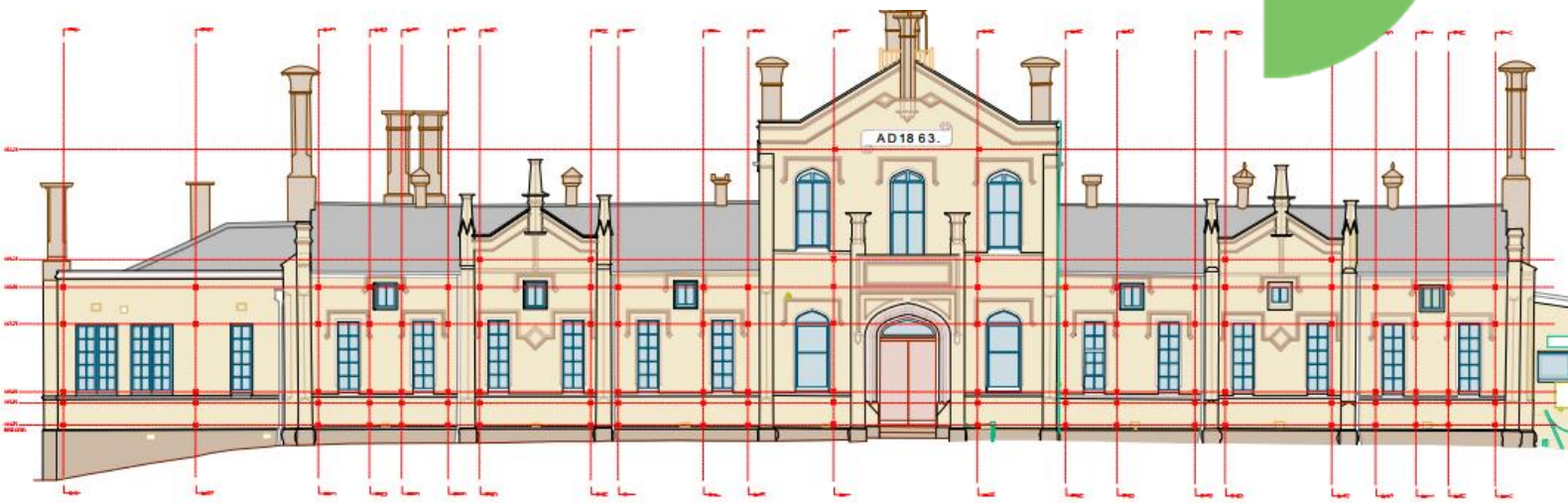
Once areas displaying potential movement or verticality issues are isolated, the surveyors then use **Total Station** technology to accurately pin-point distinct locations on the façade. These are often in the form of reflective tape targets attached to the stonework. Initial measurements are taken as a baseline to compare with periodic return site visits.

For both methodologies, it is essential an **accurate survey control network** is placed on site so each round of measurements can be reduced back to the starting baseline. This is what allows movement trends to be observed.

The steps involved…

1. **Determine the extents through an initial laser scanning survey or visual analysis.**
2. **Place the required amount of targets on the façade using a boom lift or cherry picker.**
3. **Set up the survey control network and take the initial base-line measurements.**
4. **Periodically return to site and record the position of each fixed target following the same measurement procedures.**
5. **Highlight any movement trends over time.**





Existing Conditions Surveys



If your project involves site assessments, design or development then **Existing Conditions Surveys** are one of the first – and most important – steps to complete. We understand every site is different, unique in both challenges and opportunities. At Landair, we want you to have the right foundational data informing your decisions. We help by accurately documenting existing site conditions, including:

Feature & level surveys

We measure site infrastructure and topography to map out your project extents, providing 2D site drawings and 3D terrain contours so there are no surprises down the track

Title surveys

We search and review the title data and complete the required survey measurements to calculate the position of your site's title boundary noting easement locations and checks of existing occupation

Underground services tracing

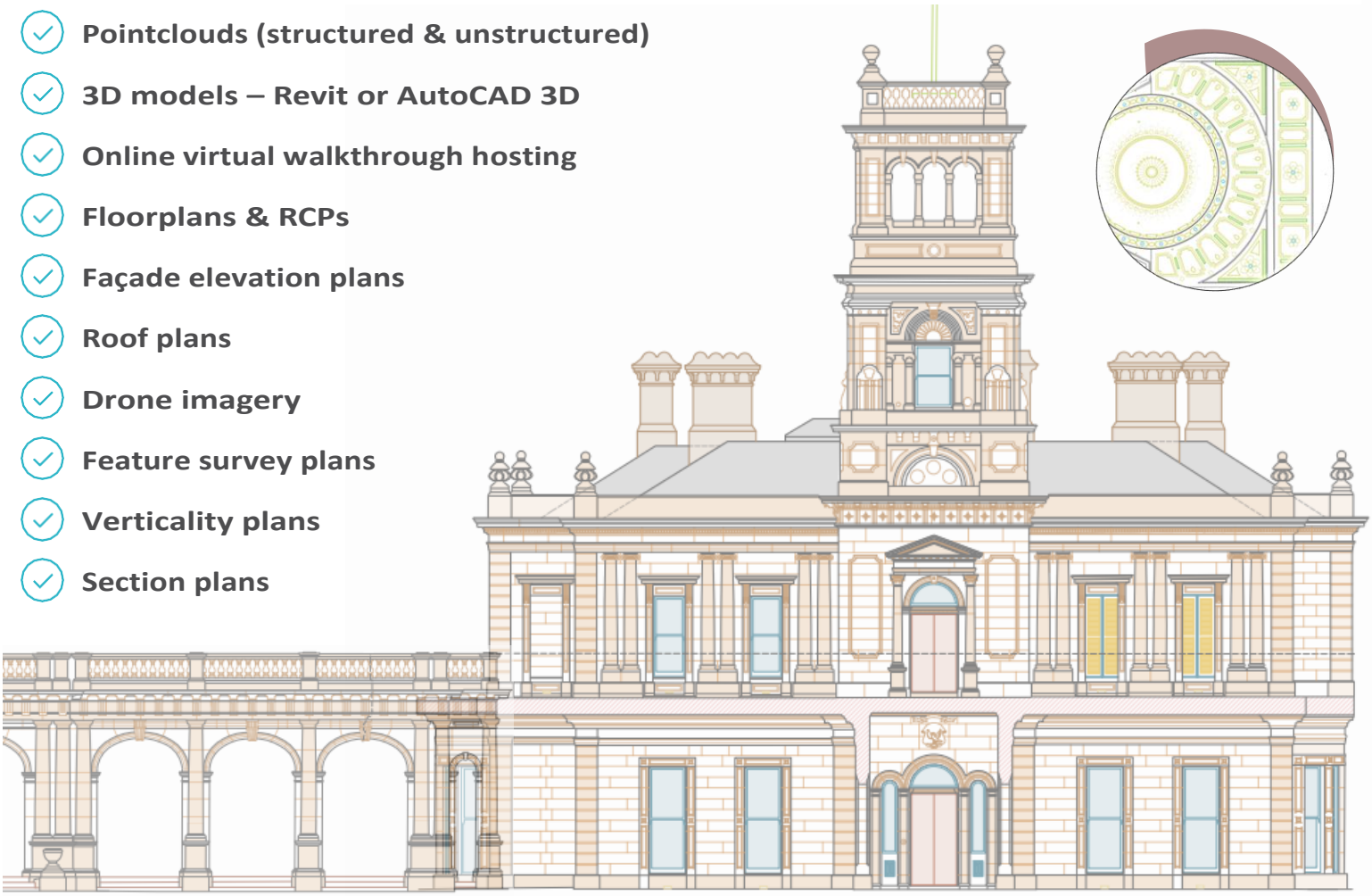
Using a combination of BYDA records and electro-magnetic tracing equipment, we identify and record underground services such as electricity, water, gas and sewerage



Survey Deliverables

With decades of experience in surveying on heritage projects, we pride ourselves on building lasting relationships with our clients, not just completing jobs. Whether it's a simple existing conditions pickup or a precinct-wide scanning survey, our team gives you the advice and precise data needed to move forward confidently. Our usual data sets for heritage architects include:

- Pointclouds (structured & unstructured)
- 3D models – Revit or AutoCAD 3D
- Online virtual walkthrough hosting
- Floorplans & RCPs
- Façade elevation plans
- Roof plans
- Drone imagery
- Feature survey plans
- Verticality plans
- Section plans





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