Case Study

A Chermside home upgraded with a high-performance Volt solar roof.

Where architecture and design-led sustainabile energy align

Project *Chermside*

CREATED BY
VOLT SOLAR TILE PTY TLD

A VOLT, INTEGRATED SOLAR UPGRADE AT RESIDENTIAL SCALE

The Chermside project is a residential solar upgrade delivered as a fully integrated Volt solar roof system, designed to work precisely with the home's existing Planum terracotta roof tiles in Slate. While the property had previously utilised an integrated solar tile system, long-term material degradation and declining performance led the homeowners to seek a solution that would improve reliability and energy output without compromising the architectural integrity of the roof.

The upgrade was conceived to retain complete visual continuity across the roof plane. Compatibility was a non-negotiable requirement: the new solar system needed to integrate seamlessly with the existing Planum terracotta tiles supplied by Bristile Roofing, maintaining uniformity across the roof and avoiding the visual disruption commonly associated with surface-mounted solar panels. Beyond aesthetics, the homeowners were seeking a system capable of delivering stronger, more consistent performance over time. The previous installation had experienced a gradual reduction in output, attributed largely to material and thermal limitations, and the new system needed to resolve these issues while remaining fully roof-integrated and suitable for a residential energy system supported by battery storage.

To meet these requirements, the roof was reconfigured using 218 Volt Planum P3 Solar Tiles, creating a 25 kW integrated solar power system. Unlike the earlier system, the Volt Solar Tile laminate is fully encapsulated in an industry-standard anodised aluminium framing, improving long-term durability, structural stability, and thermal performance. The solar tiles interlock directly with the existing Planum roof tiles, forming a single, continuous roof plane rather than a surface-mounted array. By treating solar as a roofing material rather than an applied technology, the system delivers high-capacity energy generation while remaining visually discreet.

The solar tile system was paired with a Fronius inverter and Tesla Powerwall batteries, enabling efficient energy conversion, on-site storage, and improved energy autonomy throughout the day and night. This configuration allows the home to maximise self-consumption of solar energy while reducing reliance on grid-supplied electricity.

The upgrade was delivered as a coordinated roofing and solar project, with close collaboration between Bristile Roofing's contractors, Solar Install Co (a Volt Installation Partner), and Volt's technical team, who provided direct onsite support throughout the installation. Sections of the roof were stripped back, new sarking and battens installed for the new solar tile system.

Installation was completed in stages. On the first day, the existing solar tile system and surrounding roof tiles were removed, the roof was prepared, and the initial 3.5 kW of Volt Solar Tiles were installed. On the second day, the remaining 21.5 kW of solar tiles were installed, the system was commissioned, and the roof tiling works were completed. This staged approach ensured accuracy across the roof plane, reliable system integration, and optimal long-term performance.

Since commissioning, the system has delivered substantially stronger and more consistent energy outcomes. Within the first three weeks of operation, the homeowners recorded a 70 per cent reduction in electricity costs, with the system continuing to exceed performance expectations. The battery system is regularly fully charged, allowing the home to operate predominantly on solar energy during daylight hours while exporting excess energy to the grid. The upgrade demonstrates the capacity of a roof-integrated solar tile system to deliver meaningful residential-scale energy performance without compromising roof design or material integrity.

Reflecting on the upgrade, the homeowners noted that the Volt system represents a significant improvement over their previous installation. In addition to the immediate performance gains, they highlighted the seamless integration of the solar tiles with the existing roof, describing the system as low-profile and visually refined, enhancing the home's overall appearance while delivering reliable clean energy.

While this project involved upgrading from an existing integrated solar tile system, such an approach is not universally applicable. Compatibility depends on roof tile profile, condition, layout, and structural considerations. Any potential upgrade requires assessment by a Volt consultant to determine whether existing roof tiles are suitable and whether sections of the roof can be reconfigured to accommodate a Volt Solar Tile system. This process ensures that performance, safety, and long-term durability are not compromised.

TECHNICAL SUMMARY

Project type: Residential integrated solar roof upgrade
Location: Chermside, QLD

Solar system configuration
- Total system capacity: 25 kW
- Solar tiles: 218 × Volt Planum P3 Solar Tiles
- Tile output: 115 W per tile
- System type: Building-integrated photovoltaic (BIPV)

Roof integration
- Existing roof tiles: Planum terracotta tiles (Slate)
- Integration method: Tile-for-tile replacement
- Roof plane: Continuous, flush finish (no surface-mounted panels)
- Solar tile framing: Anodised aluminium for improved durability and thermal stability

Power electronics & storage
- Inverter: Fronius (20 kW)
- Battery storage: 4 x Tesla Powerwall 2 batteries
- Monitoring: Online performance and generation monitoring via inverter and battery platforms

Installation methodology
- Coordinated roofing and solar delivery
- Section of roof stripped for installation
- New sarking and battens installed
- Two-day staged installation and commissioning

Performance indicators
- Approx. 150 kWh average daily generation
- Batteries are regularly fully charged by late morning
- ~70% reduction in electricity costs within the first three weeks of operation
- Reduced grid reliance through on-site generation and storage

Warranties
- Solar tile performance warranty: 30 years
- Solar tile product warranty: 15 years
- Roof tile warranty: 100-year product and lifetime colour warranty

ABOUT VOLT

Volt designs and manufactures building-integrated solar roofing systems that combine architectural materials with high-performance photovoltaic technology. Founded and engineered in Australia, Volt's solar tiles are developed to replace conventional roof tiles, allowing solar generation to be seamlessly integrated into the building envelope rather than applied as an afterthought.

Volt works closely with roofing manufacturers, installers, architects, and builders to deliver coordinated solar and roofing solutions for residential and projects.

Our products are designed for durability, efficiency, and ease of installation, and are supported by long-term performance and product warranties.

Volt systems are installed across Australia and internationally, including North America, Europe, the Middle East, and the Asia-Pacific region.