

Cultural Precinct

This vibrant cultural hub in Perth, Western Australia, boasts deep pre-settlement history and a strong arts presence. The heritage-listed public space features a gallery, a dedicated museum, artist studios, workshop spaces, a restaurant, and a playground. Facing large crowds and extensive areas, the precinct needed better asset management and crowd/resource control. CCR was selected to deploy its technology, creating a smart ecosystem that combines heritage with efficiency and sustainability.

Aim:

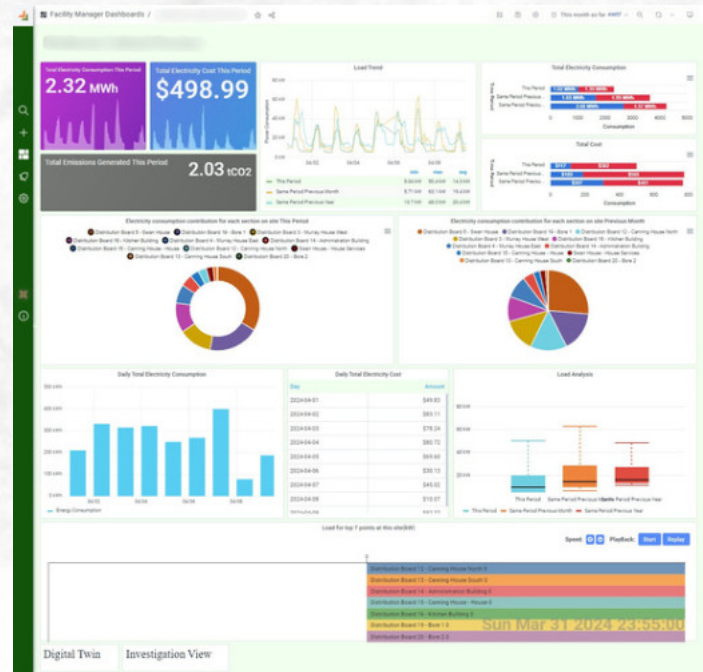
To deploy CCR's AI digital twin-enabled solution to manage the cultural precinct's large crowds and expansive areas. This includes providing accessible technology with hardware, connectivity, and analytics, analyzing overall air quality and asset management, and ensuring visitor comfort and security.

Challenges:

- Effective resource management.
- Proper asset management and monitoring building health and environment.
- Maintaining visitor comfort and safety.
- Ensuring efficient energy usage.

Solution:

- Creating a smart grid and developing a digital twin to monitor real-time data, consumption patterns, multiparametric comparisons, and visualizations and get AI-enabled insights for improved facility management and utility monitoring.
- Sensors and cameras were installed throughout the facility to manage all aspects of its indoor environment including visitor comfort and safety through its advanced people counting and video analytics solution.
- By harnessing AI and Machine Learning, predictive maintenance and condition monitoring were implemented, which reduced unnecessary downtime.
- Incorporating motion detectors within the area enabling managers to identify peak visiting times and assist authorities in pinpointing popular hotspots within the premise, all while reinforcing the safety system.



Network:

Modbus, Bacnet, 4GLte, LoRa, LoRaWAN, Ble.

Scope of Expansion:

- Enhanced video analytics and motion detection to reduce theft, robbery, and trespassing.
- Implementation of smart parking for tourist convenience and improved reviews.
- Introduction of smart stores to expand the heritage site's franchise and generate additional revenue streams.



Success Criteria:

- Improved energy efficiency and reduction in wastage.
- Enhanced visitor comfort.
- Asset management and monitoring of building health.

 Key Outcomes	
Reduced Carbon Footprint	Optimized Resource Utilization
Predictive Maintenance based Equipment Fault Detection	Real Time Asset Monitoring And Management

