Historic Australian City

This historic city in New South Wales, Australia, lies northwest of Sydney. As one of the oldest inland settlements in the country, it currently boasts a population of 44,112 residents. The city's strong local economy, proximity to Sydney, and affordable living costs contribute to its status as a rapidly growing area, with projections estimating a population of 56,560 by 2041. Celebrated for its vibrant and diverse community, this city provides an ideal setting for living, working, and raising a family.

Aim:

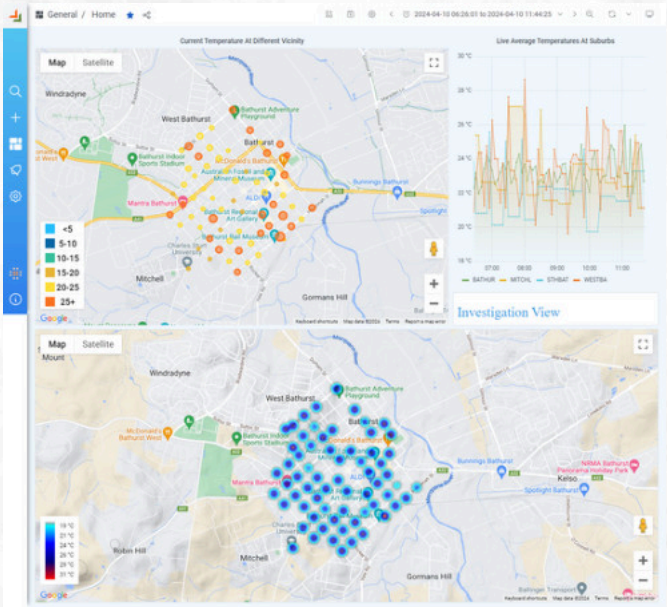
- Assess local climate conditions to understand urban heat islands and their impact on the city's environment and residents.
- Gather temperature data from various urban zones to initiate efficient smart city cooling strategies.
- Provide necessary hardware, connectivity solutions, and set up a real-time monitoring dashboard to support cooling strategies.
- Ensure scalability in connectivity, monitoring, data analytics, and automation for sustainable and adaptable smart city solutions.

Challenges:

- Lack of temperature data in various city zones.
- Lack of real-time monitoring
- Agility and scalability concerns.

Solution:

- CCR's solution included conducting a comprehensive urban heat mapping using advanced sensors and satellite technology and deploying state-of-the-art hardware and connectivity solutions for continuous temperature monitoring.
- Implemented a system with 100 Zhaga-based NEMA sensors for real-time temperature monitoring in various city areas.
- Automated temperature monitoring to optimize efficiency, reduce costs, lower emissions, and support smart city cooling strategies.
- Operates efficiently on a 220V power supply, managed through five LoRaWAN-based gateways for seamless connectivity and data transmission.
- CCR's system in the city has catalyzed a Smart City movement with enhanced data transparency and immediate benefits. It manages diverse data points for environmental and asset oversight, with future plans for environmental control, smart street solutions, video analytics, and precise city planning and decision-making.



Network:

LoRaWAN

Scope of Expansion:

- Conducting comprehensive data analysis across multiple parameters.
- Monitoring citizen mobility and overseeing parks, open spaces, and irrigation systems.
- Implementing efficient traffic control and moving towards Net Zero Infrastructure through DER integration.
- Assessing natural ecosystems, monitoring air quality, and utilizing AI/ML for data analysis and insights.

Success Criteria:

- Achieve significant cost savings.
- Achieve the project objectives within specified time and budget constraints.
- Implemented a complete system with smart monitoring, control, and analytics.
- Provided value in alignment with project goals.

Key Outcomes

Reduced Complexity & Increased visibility	**Automated Controls**
Real-time Monitoring & Management	**> AU $5,000,000 over 10yrs***

* Figures based on opportunities identified & captured to date