

Sustainable Smart Cities use private 5G

Sustainable smart Cities – An overview

A sustainable smart city uses technology and data to improve urban living while minimizing environmental impact. It promotes renewable energy, efficient transportation, and green infrastructure. Social equity, economic viability, and environmental stewardship are central to its design.

Sustainable cities need comms to be smart

1. **Efficient Energy Management**
Real-time monitoring and control of energy grids
Optimized use of renewable energy sources (e.g., solar, wind)
Smart metering for demand response and reduced waste
2. **Smart Transportation**
Supports connected and autonomous vehicles (CAVs)
Enables intelligent traffic management to reduce congestion and emissions
Improves public transportation systems through reliable, low-latency comms
3. **Water & Waste Management**
IoT-connected sensors detect leaks or inefficiencies in water systems
Smart waste bins optimize collection routes, reducing fuel usage
4. **Environmental Monitoring**
Air and noise pollution sensors send real-time data via secure private networks
Supports early detection systems for disasters like floods or wildfires
5. **Green Infrastructure**
Facilitates smart lighting (e.g., dimming when streets are empty)
Powers smart buildings with automation for HVAC, lighting, and security
6. **Data Security & Sovereignty**
Keeps critical infrastructure data private and secure
Supports local governance and compliance with environmental data regulations
7. **Reliable Connectivity for IoT**
Low-latency and high-bandwidth networks ensure real-time IoT performance
Enables massive IoT deployments without overloading public networks
8. **Supports Circular Economy Initiatives**
Tracks materials and products through lifecycle for reuse and recycling.

5G Outperforms Wi-Fi/Wired networks

1. **Energy Efficiency:** 5G transmits data more efficiently than previous networks, reducing energy use per transmitted bit—important for large-scale IoT deployments.
2. **Massive IoT Connectivity:** 5G supports millions of low-power devices per square kilometre (e.g., smart meters, traffic sensors), allowing real-time monitoring and management of energy, water, and transport systems.
3. **Reduced Infrastructure Footprint:** Unlike cabled networks, 5G doesn't require extensive physical wiring, which lowers material use, disruption during installation, and long-term maintenance costs.
4. **Mobility & Coverage:** Unlike Wi-Fi or wired connections, 5G provides wide-area mobile coverage, allowing seamless connectivity across the entire city—even for moving vehicles, drones, and public transport.
5. **Low Latency:** 5G enables real-time communication (latency as low as 1 ms), which is crucial for applications like autonomous vehicles, emergency response, and remote healthcare—where Wi-Fi often falls short.

Smart cities use Private 5G

1. **Control and Customization**
Offers full control over network configuration, security, and performance.
2. **Enhanced Security**
Provides greater security because the network is isolated and dedicated to a single organization.
3. **Guaranteed Performance and Reliability**
Can prioritize traffic, ensuring low latency and high reliability.
4. **Reduced Latency for Time-Sensitive Applications**
Offers ultra-low latency, crucial for real-time decision-making.
5. **Support for Massive IoT Deployments**
Optimized for large-scale IoT networks with thousands of connected devices





Druid

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The Druid Advantage

Druid – supporting new infrastructure project with a private network or migrating from legacy technology such as Wi-Fi or Wired Networks

Proven Solution	Field-tested and industry-validated for seamless deployment
Footprint & Experience	Extensive expertise in designing, deploying, and managing private networks with over 2,000 private networks deployed globally
Support Structure	24/7 expert technical support and dedicated account management
Ease of Monitoring	Centralized dashboard for real-time network insights
Realtime Analytics	Instant visibility into network performance and user activity
Interworking and Site-to-Site Roaming	Seamless connectivity across multiple locations
Future-Proofing	Designed to adapt to evolving technologies and standards
Scalability	Easily expandable to support growing user and device needs
Reliability / High Availability	High uptime with redundant architecture and failover mechanisms
Efficient IMSI & Device Management	Optimized identity management for seamless device authentication
4G & 5G on the Same Core	Unified core network supporting both LTE and 5G devices
IMSI Security and Encryption	Strong encryption protocols ensuring subscriber identity protection
Device Restrictions Security	Granular access control to only allow authorized models & devices
On-Prem or Cloud	Flexible deployment models to suit enterprise needs
Location Management Function	Precise location tracking and geofencing capabilities
SMS & ETWS Alerts	Info & Emergency notifications/alerts to UE on the private network
* Radio Network Quality & Coverage	Optimized RF planning for superior network performance
* UE Device Malware Protection/Browsing Restriction/Anti-Phishing	Advanced threat protection for UE (android / iOS)
* eSIM	Simplified device provisioning and remote management
* mcPTT	Mission-critical Push-to-Talk for instant communication



Talk to us today

To find out more about Private Networks , please contact us at enquiries@druidsoftware.com / www.druidsoftware.com today