

IoT for Intelligent *Healthcare Operations.*

Connecting facility, energy, and equipment data for predictive, automated healthcare operations.



Designed for *what's at stake*

Vendor-agnostic IoT and SCADA software for critical infrastructure.
Monitor, control, and automate any device, any protocol, any site.

— THE CHALLENGE

Most hospital facilities run on *disconnected systems*.

Siloed systems and **disconnected data** keep hospitals from seeing, predicting, and responding in real time.

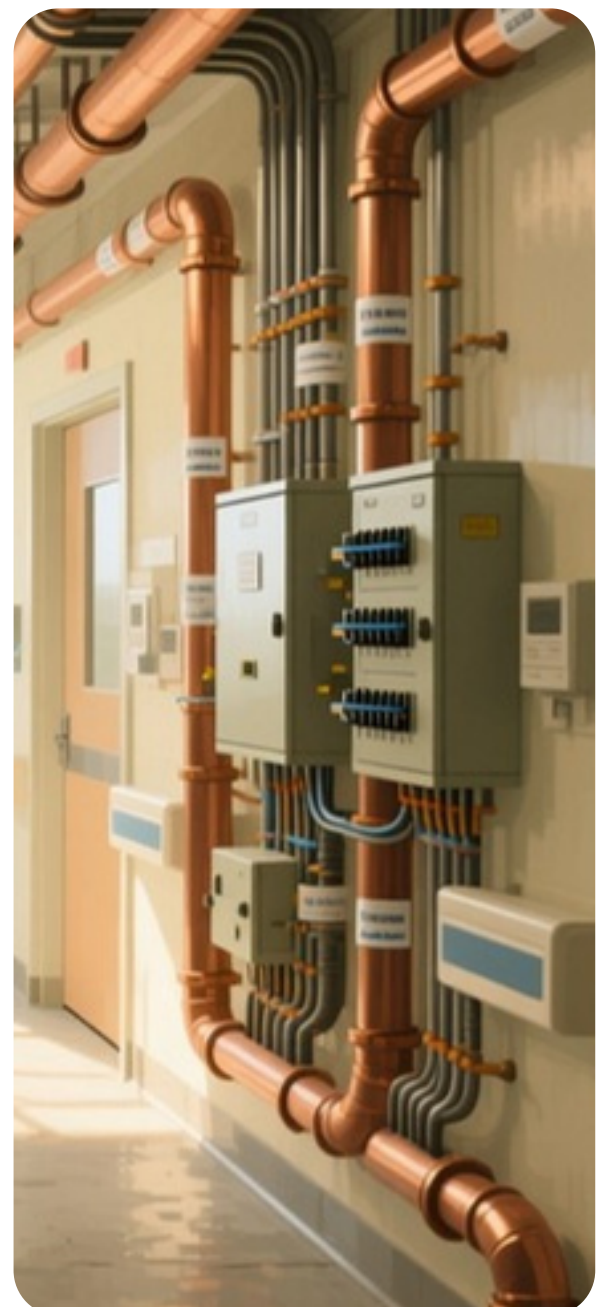
Directors of facilities and operations leaders in healthcare are managing some of the most complex built environments in the world.

Operating rooms, ICUs, isolation suites, pharmacies, labs, and imaging areas demand continuous, precise environmental control — **and the cost of failure is not measured in inconvenience**. A generator test that fails an inspection, an isolation room that falls out of spec, or a medication fridge that drifts out of range during a night shift can **directly affect patient safety and regulatory standing**.

Yet most hospital systems still depend on fragmented infrastructure — separate control systems for HVAC, power, water, and environmental monitoring that were never designed to communicate with each other or scale across campuses.

As automation, predictive maintenance, and AI begin reshaping how hospitals operate, **the defining constraint is not technology**.

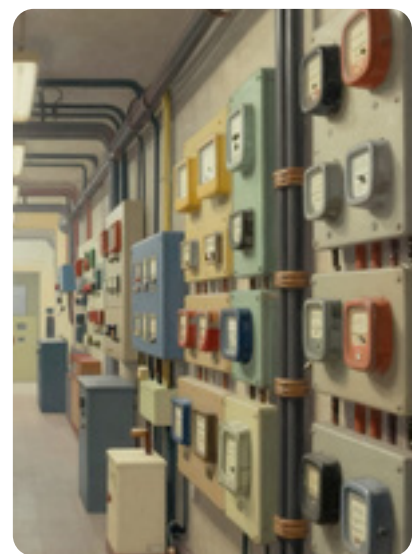
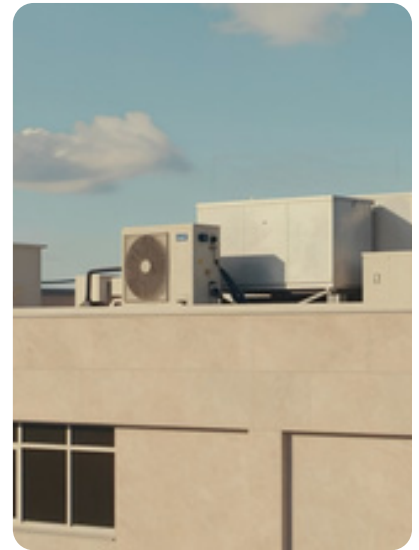
It is **data infrastructure**. **Disconnected systems create invisible risk**.



The urgency of this challenge is compounded by the pace of consolidation reshaping the industry.

Healthcare M&A has remained one of the most active deal environments in the economy — over 950 transactions closed in 2025 alone, with strategic acquirers accounting for nearly 90 percent of activity as health systems pursue multi-state platform builds and specialty roll-ups. **Every acquisition brings another set of inherited building systems,** legacy BMS and SCADA platforms, and disconnected infrastructure **that was never designed to integrate with what came before it.**

For facilities and operations leaders, **M&A does not simplify** the environment. It makes **disconnected systems the default state.**



Disconnected Systems and Data Silos

Most healthcare organizations manage multiple campuses using a mix of legacy BMS platforms, SCADA systems, and standalone tools that were never designed to share data. **Over 70 percent of hospitals** operate across **sites that lack integration**, creating operational blind spots, delayed response times, and environments where a critical fault in one system cannot be seen from another.

Labor Shortages and Skill Gaps

Aging workforces and nationwide technician shortages are reducing institutional knowledge. Facility teams are stretched thin and often managing complex, distributed infrastructure without unified tools or analytics support — relying on **manual inspections** and **disconnected spreadsheets** to identify issues that have often already impacted operations.

Inefficient Energy Use

Hospitals are among the most energy-intensive building types, and inefficiencies in **unmonitored systems waste** an estimated **20 to 30 percent of total energy consumption**. With energy costs rising and ESG reporting requirements expanding, this inefficiency carries both financial and regulatory consequences.

Compliance and ESG Pressures

Hospitals face escalating requirements for infection control, emissions tracking, emergency power readiness, and sustainability reporting. Demonstrating compliance with Joint Commission standards, NFPA 99 and NFPA 110 testing requirements, and ASHRAE 170 environmental benchmarks is costly and error-prone when data lives in fragmented systems and must be assembled manually for every audit. **Reactive repairs cost three to five times more** than preventive strategies and increase the likelihood of downtime that directly affects patient care. In environments governed by these frameworks, reactive maintenance is also a **compliance liability** — especially for emergency power systems, critical environment monitoring, and life-safety infrastructure.

The Data Foundation Problem

Artificial intelligence is being introduced for predictive maintenance, anomaly detection, and energy optimization across healthcare facilities. But **without clean, connected, and consistent data** from across the facility, these capabilities **cannot deliver accurate or reliable results**. The problem is not the AI — it is the data infrastructure underneath it.



— THE SOLUTION

mango the *unified data layer* your team can *act on*.

Connects **every building system** — HVAC, power, life-safety, and environmental monitoring — **across every site**, without replacing what you already have.

 DASHBOARDS

 ALARMS

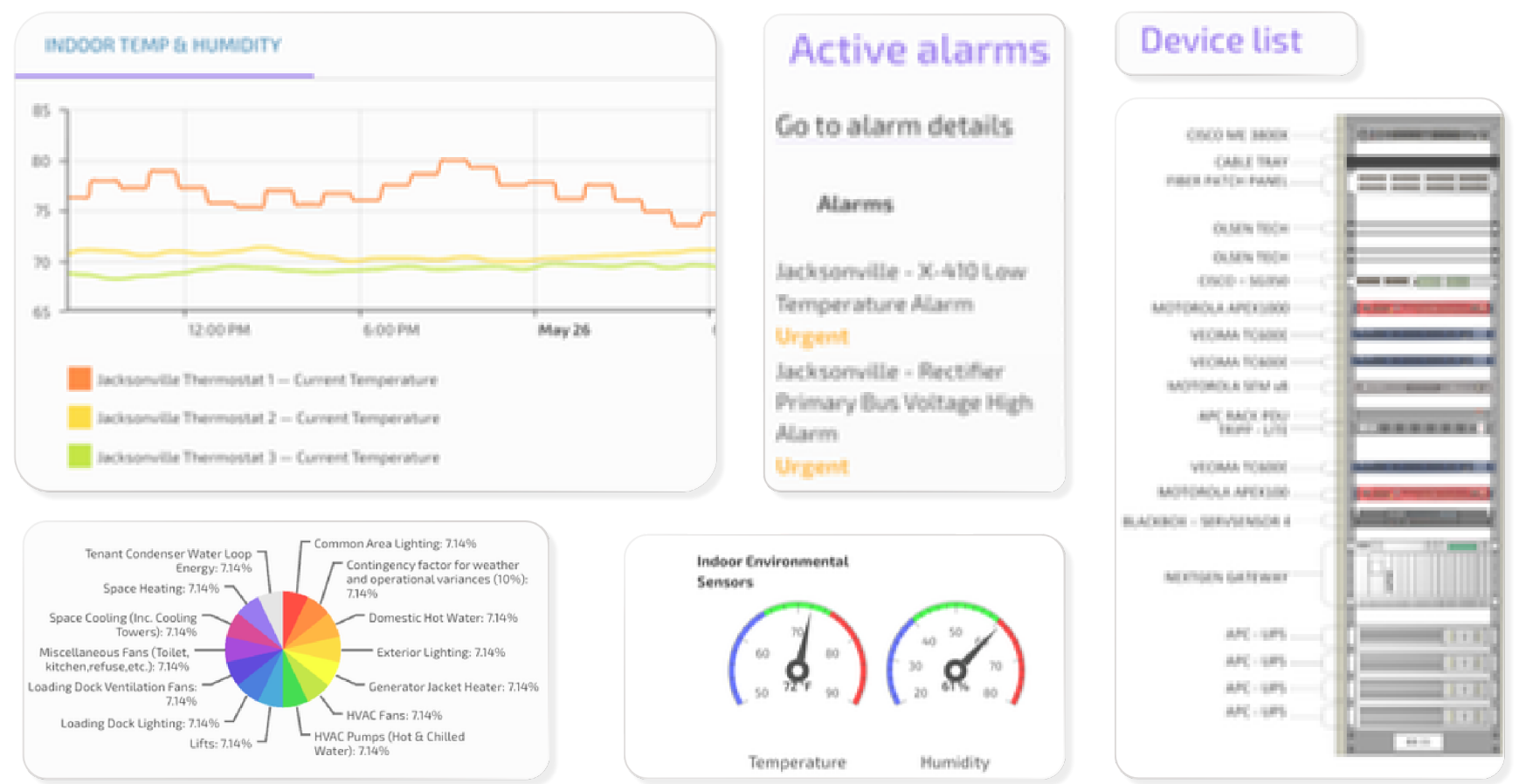
 REST API

 SCRIPTING

Mango by Radix IoT turns fragmented healthcare infrastructure into a unified data layer that operations teams can act on.

By connecting HVAC, power, lighting, water, energy storage, life-safety systems, and environmental monitoring into one platform, Mango **eliminates blind spots** and **restores real-time visibility** across **every site** and **every connected facility system**.

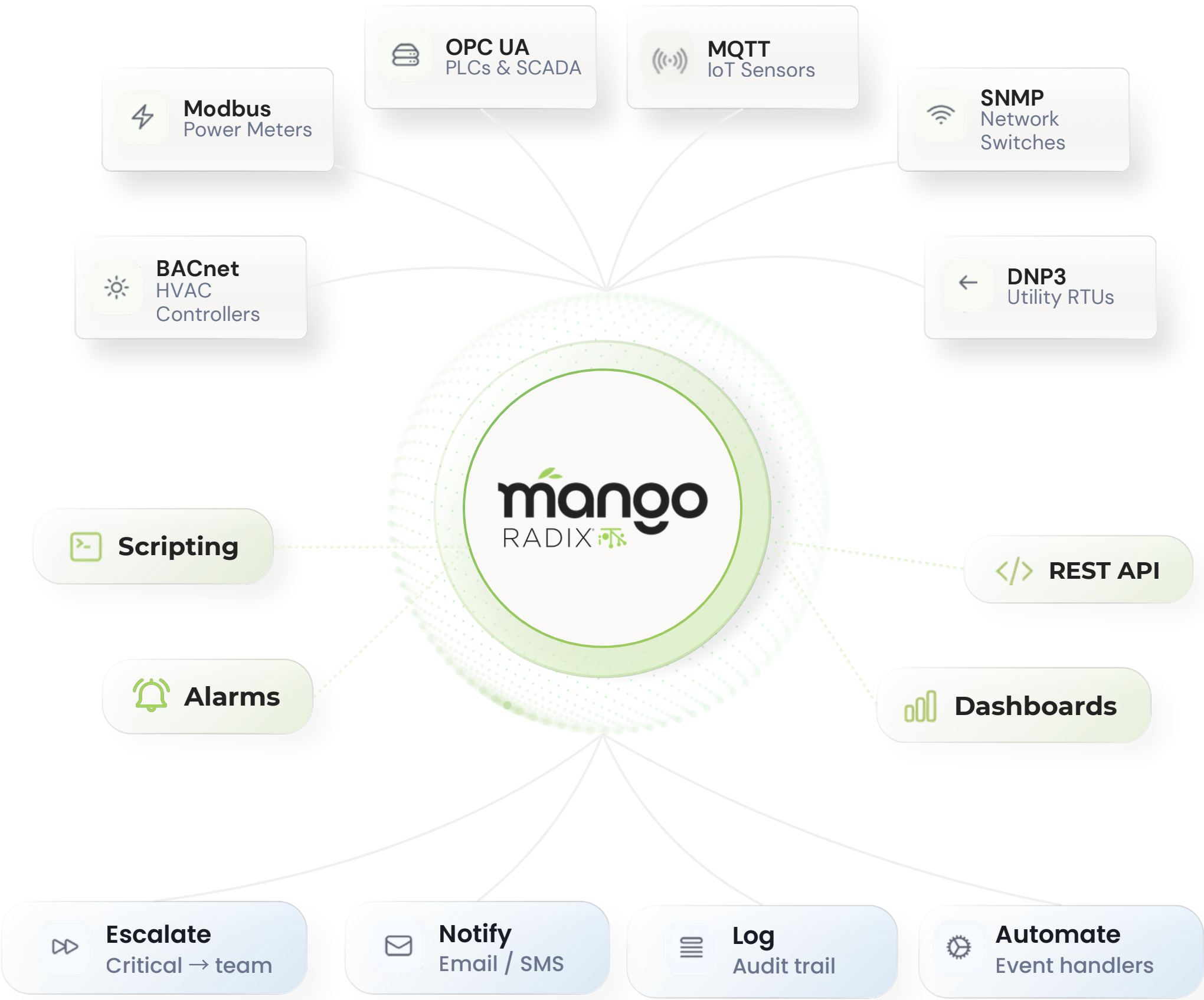
Hospitals gain complete visibility into how critical systems perform, where inefficiencies occur, and how to act before issues disrupt patient care or compromise compliance. Mango transforms facility data into a single, reliable foundation that enables predictive maintenance, automation, and AI-driven insight **without requiring costly infrastructure replacements**.



Built for interoperability and seamless scalability, Mango bridges the gap between traditional SCADA and BMS systems and modern cloud platforms.

It sits above existing infrastructure and translates incompatible data sources into one shared language, making it possible for multi-site hospital networks to standardize visibility, benchmark performance across campuses, and plan upgrades strategically.

Its open, vendor-neutral architecture ensures reliable and **secure data flow** across buildings, systems, and vendors. Whether used to meet Joint Commission readiness standards, demonstrate ASHRAE 170 compliance, optimize energy use, or feed AI-driven maintenance models, Mango delivers the **clarity, automation, and control** hospitals require for safe, clean, and efficient operations.



Platform *Capabilities*

Mango **brings data together** into **one single pane of glass** built for the complexity of modern commercial portfolios.

Unified Data Layer

Connects building automation, energy, metering, safety, and compliance systems into one secure, vendor-neutral platform without replacing existing infrastructure. Mango **normalizes data** from any device, manufacturer, or protocol **into a single, consistent format** ready for analytics, reporting, and automation.

Predictive Operations

Enables proactive maintenance, equipment optimization, and fault detection by transforming raw facility data into structured, actionable intelligence. Mango **unifies time-series data across all connected facility systems** — the prerequisite for predictive maintenance and AI-driven optimization — creating the data foundation that makes machine learning models for HVAC efficiency, fault detection, and demand response reliable and accurate.

For critical equipment categories where failure directly affects care delivery — medical imaging systems, sterilization equipment, emergency power, and precision HVAC — predictive monitoring is not a convenience. It is an operational and safety requirement.

Asset and Inventory Monitoring

Mango provides real-time visibility into critical physical assets across the facility — from pharmacy refrigeration and medication storage to sterilization systems and backup power equipment. **Automated alerting** on temperature excursions, pressure deviations, and equipment anomalies helps facilities teams protect medication integrity, maintain sterile environments, and respond before a fault becomes a failure.

The IoT in smart hospitals market is seeing rapid growth in medication management infrastructure, projected to reach \$33.65 billion globally by 2031 — driven by the need for tighter **inventory control, real-time visibility** into dispensing activity, and **integration with pharmacy and EHR systems**. Mango's role is to provide the reliable underlying facility data layer that these systems depend on.

Facility Support for Patient Monitoring

Mango **monitors equipment and building systems exclusively** — HVAC, power, environmental, and mechanical infrastructure. It does not connect to, process, or store any clinical information, patient records, or patient tracking data of any kind. Where hospitals use **connected facility infrastructure to support care delivery environments**, Mango provides the underlying building systems data layer. What is done with that data in a clinical context is the responsibility of the care organization and its partners.

AI and Analytics Ready

Provides **the data consistency** and **visibility required for AI-driven insights**, automation workflows, and performance benchmarking across sites. Real-time data is made available through Mango's REST API for any analytics platform, digital twin model, or AI application a hospital chooses to deploy. As the IoT in smart hospitals market shifts toward AI-integrated ecosystems and predictive analytics — identified as the two largest strategic growth opportunities through 2031 — the **quality of the underlying data infrastructure** becomes the critical differentiator.

Compliance and ESG Reporting Visibility

Centralizes live and historical data to **simplify audits, automate sustainability reporting**, and ensure **full transparency**. Compliance teams can produce accurate documentation for Joint Commission reviews, NFPA 99 and NFPA 110 testing records, ASHRAE 170 environmental benchmarks, ESG disclosures, and internal audits — faster and with fewer errors. Mango supplies the **reliable, continuous, timestamped data** those reports are built from; compliance reporting itself remains the facility's process.

Portfolio Oversight

Standardizes visibility across multi-site hospital networks, allowing teams to measure efficiency, compare performance across campuses, and plan capital upgrades strategically based on consistent, reliable data. Healthcare organizations that grow through acquisition — inheriting disparate building systems with no common platform or monitoring baseline — gain a **single unifying layer** without replacing existing infrastructure.

— MANGO BY RADIX IOT

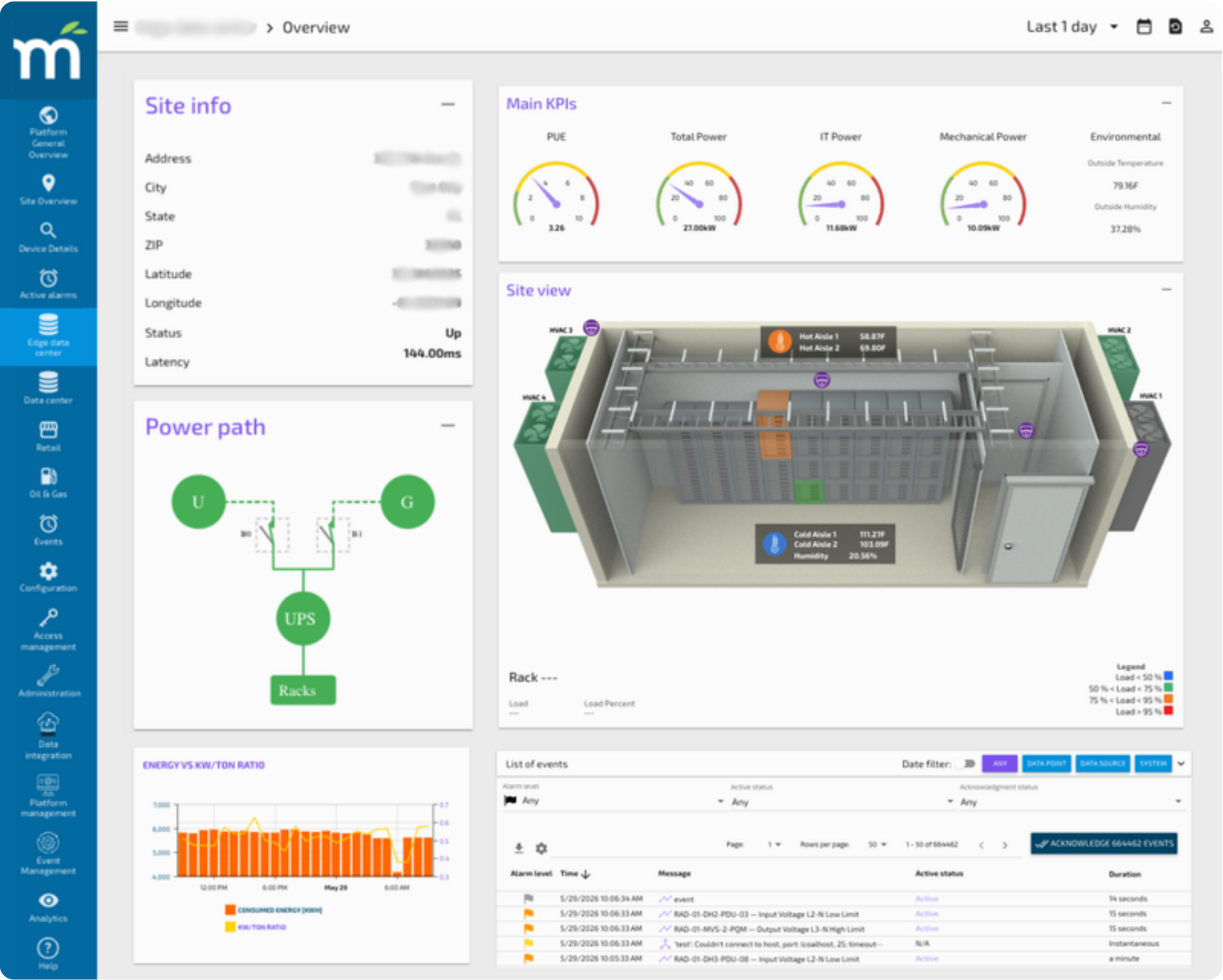
Built for *Complex Environments*

Connect to **anything**. Monitor from **anywhere**. Act on **what matters**.

Healthcare networks do not operate in closed systems, and neither does Mango.

Integrated health networks work with a wide range of **contracted services, technology partners, and platform vendors** to deliver facility operations, **compliance reporting, energy management, and capital planning**. Mango by Radix IoT is designed to fit into that ecosystem, not replace it.

Its open architecture means facility **data collected by Mango is accessible** to the platforms, partners, and service providers a health network already works with — through its REST API, configurable publishers, and standard data formats. Whether that data flows to a CMMS for work order management, an energy management platform for sustainability reporting, a digital twin environment for capital planning, or an analytics partner for AI maintenance programs, Mango connects to it.



For health networks evaluating new infrastructure platforms, this openness matters for two reasons.

First, it eliminates the risk of a closed ecosystem that creates new vendor dependencies or limits future flexibility. Second, it means Mango **works alongside existing contracted service relationships rather than displacing them** — a critical consideration in an industry built on long-term vendor and service partnerships.

Radix IoT is a data infrastructure provider. What organizations and their partners do with that data — the insights they derive, the workflows they build, the compliance programs they operate — is **driven by the organization** and its ecosystem. **Mango provides the foundation.**

Important: HIPAA and patient data

Mango by Radix IoT monitors equipment and building systems only. It does not access, process, store, or transmit any clinical information, patient health records, protected health information (PHI), or patient tracking data of any kind. Mango is a facility infrastructure platform — it sees mechanical, electrical, and environmental data, not patients. This distinction is absolute and is critical for hospital IT, compliance, and security teams evaluating any new platform.

Mango can be deployed on-premises, in the cloud, or within a hospital DMZ — depending on the organization's IT security policy and infrastructure requirements. It supports role-based access control, full audit trails, and encrypted data transmission, and is designed to integrate with hospital network security architectures without requiring access to clinical systems or patient data environments.

For organizations with strict data governance requirements, Mango's architecture keeps facility and operational data entirely separate from clinical systems, ensuring that operational intelligence does not create new compliance surface area under HIPAA or similar frameworks.

Data privacy and cybersecurity are the primary restraints on IoT adoption in healthcare according to industry analysis — driven by increasing cyberattack exposure, evolving HHS/HIPAA requirements, and the operational complexity of securing connected environments. Mango's deployment flexibility, network segmentation support, and strict separation from clinical data systems are designed to address these concerns directly.

— MANGO BY RADIX IOT

Built to *Solve Challenges*

Connect to **anything**. Monitor from **anywhere**. Act on **what matters**.

Mango transforms disconnected facility data into a secure, interoperable **foundation for intelligent operations**.

It captures and contextualizes data from HVAC, emergency power, sterilization systems, and critical environments — including operating rooms, ICUs, isolation suites, pharmacies, and imaging areas — ensuring that insights, once hidden in isolated systems, are now **visible** and **actionable**.



Data Acquisition



Control & Automation



Alarming & Events



Real-Time Dashboards



Time-Series Historian



REST API & Extensibility



From Fragmented Systems to Unified Data

Mango connects every layer of hospital facility infrastructure, from legacy BMS and SCADA systems to modern IoT devices and cloud applications. **Supporting 30+ data source** types including BACnet, Modbus, SNMP, MQTT, OPC UA, and REST APIs, Mango normalizes data from **HVAC, emergency power, lighting, generators, and connected facility and equipment systems** into one real-time environment. It transforms disconnected systems into a unified data layer ready for automation, compliance, and analytics.



Operational Intelligence, Anywhere

Mango provides complete oversight from any location through a secure, web-based interface that centralizes data and control. Facility teams can **identify issues, manage alerts, and diagnose root causes quickly and accurately**. Real-time data from HVAC, environmental monitoring, and energy systems feeds directly into analytics dashboards and AI systems, giving hospitals continuous insight into uptime, performance, and staff and patient safety conditions.

Turning Data into Decisions

Mango correlates signals across systems, time, and location to surface what matters most. It **filters noise, prioritizes alerts, and presents information in a clear, actionable context** — helping shift from reactive troubleshooting to **predictive, coordinated action**.

For example: Mango can detect early signs of chiller performance degradation before it escalates into a failure that forces an OR cancellation. It can identify a chronic air handling unit issue in an isolation ward before it shows up in a Joint Commission survey. These are the insights that matter to healthcare facility leaders — not abstract AI capabilities, but specific, preventable failures that Mango makes visible before they happen.

Fast Implementation, Long-Term Value

Mango is lightweight, modular, and built to integrate with existing healthcare systems without disruption. **It deploys quickly, minimizes IT burden, and scales across on-premises and cloud environments.** By unifying data at the source, Mango accelerates time to insight while delivering lasting improvements in efficiency, compliance-readiness, and operational cost control.

Built to Manage Complexity at Scale

Healthcare facilities **operate across** multiple buildings, departments, and networks of critical systems accumulated over **decades of infrastructure growth, vendor changes, and technology upgrades.** Mango creates consistency across all of it — unifying and standardizing visibility, benchmarking performance, and connecting legacy infrastructure to modern analytics and AI without costly overhauls.



In Practice

Note on the following scenarios

The examples below are illustrative scenarios based on operational patterns common to Mango by Radix IoT deployments in healthcare environments. They are not direct quotations from specific named customers. Contact sales@radixiot.com to speak with a reference customer in your facility type.

Regional Health System

A large integrated health network managing facilities across multiple states used Mango by Radix IoT to bring operational consistency to an infrastructure portfolio built through decades of acquisitions and mergers. Each facility had inherited its own building management systems for HVAC, power, and environmental controls — leaving the central facilities team without a unified view across campuses. Engineers managed maintenance reactively, working from disconnected systems that could not share data or surface patterns across the network.

With Mango in place, the organization unified its facility data into one contextual platform linking mechanical, electrical, and environmental systems in real time. Maintenance teams receive early alerts for equipment degradation; energy use is continuously optimized across campuses; and compliance data is automatically archived for Joint Commission and ESG reporting. Within the first year, the provider **reduced unplanned downtime by nearly half** and improved overall operational visibility across every care site.

University Medical Center

A university medical center facing strict sustainability mandates and aging infrastructure used Mango to unify its facility operations across five campuses. The platform normalized data from HVAC, emergency power, sterilization, and metering systems, allowing the organization to benchmark performance, meet ASHRAE 170 and NFPA 99 reporting standards, and proactively manage critical environments. Predictive analytics identified equipment risks before failure, and automated compliance tools simplified ESG and audit reporting.

Within the first year, the medical center reduced unplanned downtime by 45 percent, improved preventive maintenance ratios by 38 percent, and lowered energy costs by 18 percent while achieving full visibility across its expanding healthcare portfolio.



Ready to *streamline* your operations?

Discover how Mango by Radix IoT can improve uptime, simplify compliance, and scale visibility across your healthcare portfolio.

Contact us for a demo: sales@radixiot.com



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OFFICER

20+ ENGINEERS AND
SPECIALISTS

A focused team of platform engineers, protocol specialists, and domain experts who build and support Mango every day.

12+ YEARS IN
PRODUCTION

Mango has been running in live, demanding operational environments since 2014. This is not a startup selling a vision.

6 CONTINENTS
SERVED

Data centers, telecom networks, energy infrastructure, and commercial buildings across North America, South America, Europe, Asia, Australia, and Africa.

Designed for *what's at stake*

Vendor-agnostic IoT and SCADA software for critical infrastructure. Monitor, control, and automate any device, any protocol, any site.

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Mango by Radix IoT provides operational and facility data infrastructure. It does not constitute compliance software, legal advice, or a guarantee of regulatory compliance. Organizations are responsible for ensuring their own compliance with applicable standards and regulations.