BUILDING AUTOMATION

FOR PRECISION, COMPLIANCE, & GROWTH

In life sciences, precision is everything. Your facility isn't just a building—it's a tool for discovery, compliance, and competitive growth. Here's how BAS turns your environment into a strategic advantage.

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IN LIFE SCIENCES, PRECISION IS EVERYTHING

From R&D to manufacturing, your facilities aren't just buildings—they're tools for getting life-saving products to market.

I've seen what happens when facility systems are treated as background infrastructure: rising costs, mounting regulations, and tight timelines make reactive operations unsustainable. Leaders need visibility, control, and confidence built into every system.

That's what Building Automation Systems (BAS) deliver. BAS provides real-time insight, predictive alerts, and audit readiness without the scramble. It's the foundation of a smarter, safer, and more scalable operation.

This guide is for decision-makers like you—the people ensuring science moves forward without disruption. Here, we'll show how BAS transforms facilities into competitive advantages, helping you protect research, safeguard people, and plan for growth.

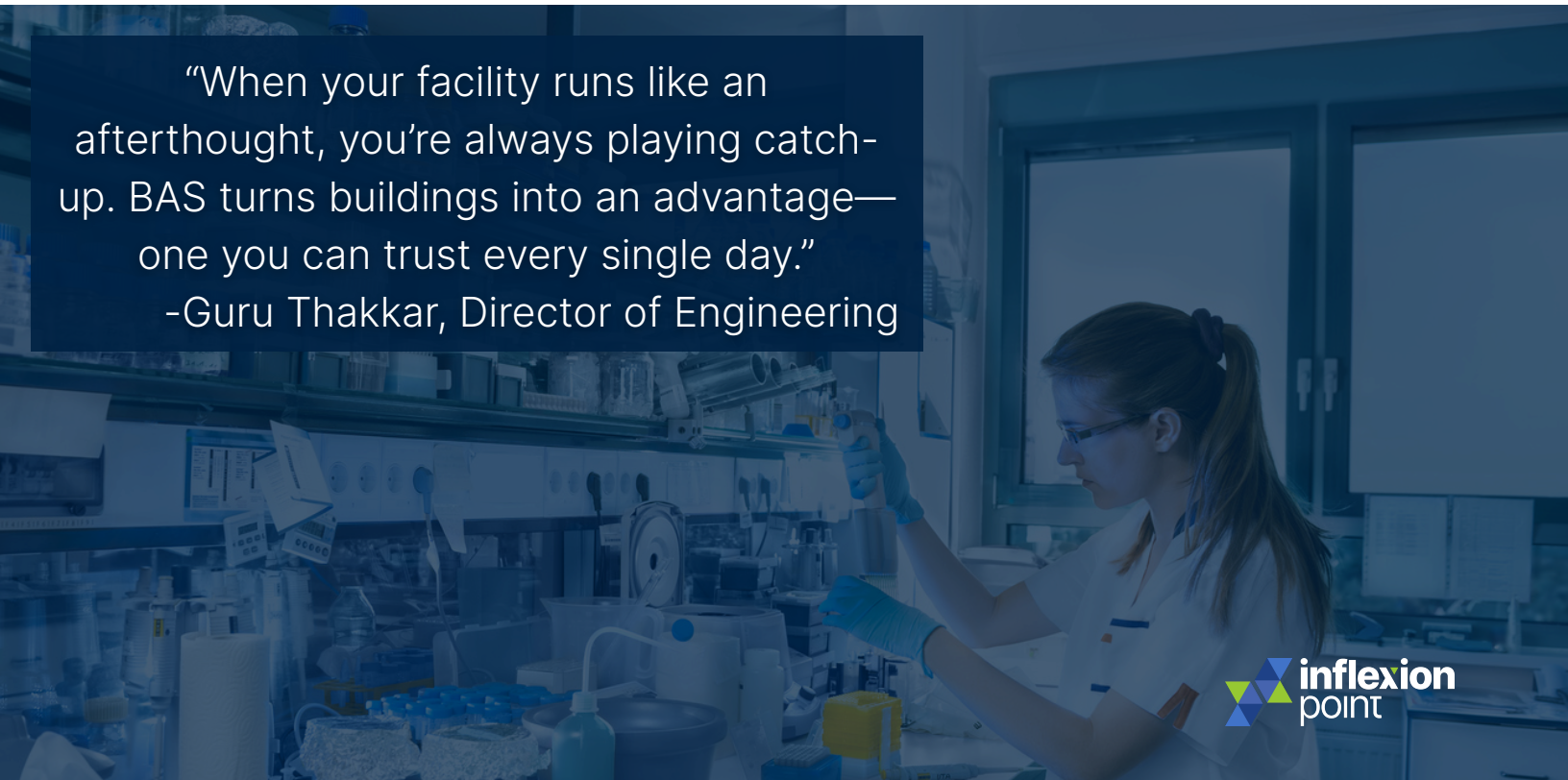
Guru Thakkar
Director of Engineering

What is BAS, and Why It Matters

Building Automation Systems (BAS) are the brains of your facility. They centralize HVAC, lighting, cleanroom conditions, refrigeration, and more—turning a complex network of equipment into one cohesive, intelligent system.

But BAS isn't just technology; it's a business decision. A facility that reacts too slowly or relies on manual oversight puts science—and the bottom line—at risk. BAS gives leaders real-time visibility, predictive alerts, and confidence that every system is running at its best.

If it powers science, BAS monitors it.



"When your facility runs like an afterthought, you're always playing catch-up. BAS turns buildings into an advantage—one you can trust every single day."
-Guru Thakkar, Director of Engineering

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Every System, One Platform

Building Automation Systems (BAS) give life sciences facilities centralized oversight of every environment-critical function. Instead of relying on manual checks, teams get real-time visibility and automated adjustments to keep conditions stable and compliant.

What BAS Monitors and Controls

Temperature & Humidity
Keeps labs, cleanrooms, and storage areas within strict ranges.

Airflow & Cleanroom Pressure
Regulates air changes per hour (ACH) and maintains ISO classifications

HVAC Systems
Optimizes heating, cooling, and ventilation to cut energy waste.

Lighting
Automates schedules, motion-sensor controls, and daylight harvesting.

Refrigeration & Freezers
Monitors temperature-sensitive storage to minimize spoilage risk.

Filtration & Ventilation
Supports particle control and biosafety standards.

Energy Use
Tracks and adjusts performance in real time for efficiency gains.

Alarms & Alerts
Notifies staff instantly of deviations to prevent downtime or loss.

Compliance Without the Chaos

Regulatory standards like **FSA 21 CFR Part 11, GxP,** and **ISO14644** demand airtight records and validated environments. BAS makes staying audit-ready simple.

Automated Data Logging

Eliminates manual logs by recording temperature, pressure, humidity, and airflow 24/7.

Centralized Documentation

Keeps all environmental data in one secure, easily accessible platform.

Real-Time Alerts & Corrective Actions

Triggers alarms and automated responses to minimize risk.

Audit-Ready Reporting

Historical data, calibration records, and deviation logs export instantly for inspections.

> BAS isn't just compliance insurance — it's a safety net. One sterile drug manufacturer cut batch loss events by 40% simply by using automated BAS alerts.

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The ROI of Smarter Facilities

Lower Energy Costs

40-60% of energy spend is HVAC

Optimized airflow and setpoints save hundreds of thousands annually

Downtime & Maintenance

35% fewer reactive work orders

Predictive analytics catch problems early, reducing costly repairs.

Team Productivity

20% productivity boost

Auto-logs and dashboards free engineers from manual checks.

Better Resource Use

More time for R&D, scale-up, and innovation - not firefighting

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Smarter Facilities, Fewer Surprises

Predict. Optimize. Lead.

Most facility teams are stuck reacting—chasing alarms, fixing breakdowns, and scrambling to meet ESG goals. BAS changes that.

With real-time dashboards and predictive analytics, leaders can spot risks before they escalate, plan maintenance proactively, and reduce downtime. At the same time, centralized data makes it easy to track energy, emissions, and resource use across sites, helping organizations hit sustainability targets without sacrificing precision or compliance.

A smarter facility isn't just efficient—it's resilient. BAS gives leadership confidence that every system is optimized, every audit is covered, and every decision is backed by data.

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Real Results in Action

Behind every BAS project is a measurable win—safer facilities, fewer surprises, and smarter use of resources. Here are some ways we've helped life sciences organizations turn their building systems into strategic assets:

BeiGene
Designed and implemented BAS and utility controls for a 6-building bioprocess campus including GMP production, labs, and offices. Integrated (29) AHUs, chilled water/steam distribution, gas detection, fuel oil, and refrigerant monitoring for full facility visibility.

SAIC/Leidos – EMS
(2 projects / sites)
Built and expanded a Rockwell FactoryTalk View SCADA platform to monitor temperature, humidity, differential pressure, and alarms across multiple sites. Added door interlock monitoring with remote user interface.

University of Pennsylvania
(multiple science buildings / labs)
Delivered BAS for multiple medical and lab buildings, including an electron microscope lab, with Rockwell controls, instruments, and wiring—ensuring stability and precision for critical environments.

Shire
Implemented a Rockwell-based BMS controlling AHUs, RTUs, chillers, hot water loops, and balance-of-plant systems. Provided environmental monitoring for utility skids, process areas, and biowaste systems.

Emergent BioSolutions
(2 projects / sites)
Deployed BAS automation and EMS at two fill/finish sites with 12 AHUs, plus integrated process automation for complete site visibility and compliance.

WHY WORK WITH US:

- **We know regulated environments.**
  Our expertise comes from GMP facilities, R&D labs, and mission-critical operations.
- **We design for scale.**
  From a single lab to a multi-site campus, your BAS will grow with your science.
- **We stick around.**
  From system setup to staff training and ongoing coaching, we make sure you get results.

HOW TO GET STARTED:

- **Book a BAS Strategy Session.**
  Let's review your current building systems and identify the fastest wins.
- **Request a BAS Readiness Review**
  Find out where your operations stand right now.
- **Talk to Our Experts**
  Have questions? Let's discuss how we can help.

YOUR GOALS, OUR GUIDANCE.
SHARED SUCCESS.

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