

# Manufacturing plant achieves 100% on-time preventative maintenance

## Asset Lifecycle Management Program is key



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A large manufacturing plant in the eastern United States had an opportunity to transform its operations and create production reliability. Built in the early 1900s and comprising of hundreds of acres, the plant produces a wide range of products. However, its aged HVAC equipment experienced frequent breakdowns, impacting facilities' temperature and humidity levels in their facilities. This resulted in production downtime and almost 13,000 hours of annual maintenance and repairs. The plant required ongoing support to ensure its building systems and technology remained online and operated reliably, but its service provider couldn't keep up.

Johnson Controls helped the manufacturing plant achieve measurable success within six months

- Reduced annual maintenance and repair costs by \$773,280 vs. incumbent
- 50% reduction in annual maintenance and repair hours vs. incumbent
- \$200,000 annual chiller rental cost avoidance
- Estimated \$40M improvement in production output due to equipment uptime
- Estimated \$5M+ to bottom-line profitability
- 100% on-time preventative maintenance, extending asset life

## HVAC unreliability stopped production and profits in their tracks

The plant's previous building systems provider was unable to deliver consistent uptime and reliability for the more than 450 HVAC assets at the plant. These assets included chillers, boilers, rooftop units, and cooling towers. In addition to the complete loss of production output, these unexpected shutdowns led to increased expenses due to costly and repeated emergency repairs for aged assets. With its production and budget at risk, the relationship between the plant and the systems provider had reached a crossroads.

Strong partnerships require a foundational understanding of the

organizations involved, along with their objectives, values, and mission. When Johnson Controls engaged with an array of the plant's stakeholders, the cornerstone conversation between the two parties was on the value of reliable support and service. While the plant's incumbent service provider had lower upfront costs, it lacked core competencies that ultimately outweighed the price benefit, driving increased total cost of ownership.

The plant needed a provider who could keep its stakeholders informed, gain a deep understanding of the site and assets, respond quickly and effectively, get repairs right the first time, and deliver valuable expertise. It needed a partner who could become a valuable extension of its own team.

### The Need – Reliable Service and Partnership

- Strong and consistent communication
- A deep understanding of the site and its systems
- Quick and effective responsiveness
- Able to diagnose and fix the problem the first time
- Consistently delivered, industry-leading expertise and resources
- Efficient invoicing processes

This newly established relationship with plant leadership and operators gave the Johnson Controls team a better understanding of how the partnership could facilitate alignment between the customer's goals and objectives and its capabilities.

### The Solution – Johnson Controls Asset Lifecycle Management Program

- Quarterly business reviews to measure performance against KPIs
- Dedicated local account manager and site manager to ensure easy communication, accountability, and true partnership
- Intelligent technology implementations that automate maintenance and documentation processes
- Quick, accurate, and complete invoicing

With the intent of restoring the plant to a consistent, reliable operating state, the Johnson Controls team got to work creating a plan to guarantee HVAC uptime and reliability.

## Case Study

### Maximizing operational stability through the best people, process and technology

After formally assessing the plant's needs and working with stakeholders to develop measurable KPIs, an Asset Lifecycle Management Program was put in place. This program was designed to restore the facilities' HVAC equipment to working order, as well as to initiate a programmatic response to managing operations and maintenance going forward. The program required a finely tuned coordination of people, process and technology to deliver the outcomes the manufacturing plant specified.



#### People

A dedicated Johnson Controls team of experienced on-site technicians, including a dedicated local account manager and site manager, manages the plant's HVAC assets to ensure a safe, comfortable environment. The team also manages preventative maintenance schedules, monitors equipment, and responds to service requests. The Johnson Controls team worked to create complete alignment among the plant's stakeholders, becoming a conduit between previously siloed departments and creating transparency between the plant's capital, maintenance, repair, and energy budgets.

#### Process

The dedicated technicians utilize robust, proven processes to manage the assets and drive results. In advance of program implementation, the Johnson Controls and plant teams came together to align around expectations, role clarity and mission, establishing critical metrics for success. Once the program was underway, quarterly business reviews allowed all parties to review performance and expectations and align on goals and objectives. This continuous improvement structure ensured the Johnson Controls team was constantly reaching and surpassing established KPIs.

#### Technology

In addition to widespread HVAC repairs, Johnson Controls technicians implemented an asset management platform to drive data analytics, helping to optimize the program and therefore lower the cost to the site. This Computerized Maintenance Management System (CMMS) enables the plant to document the work and costs of maintenance for each asset. Having this data supports operational decision-making and informs well-planned capital expense management.

"What makes the Johnson Controls Asset Lifecycle Management Program stand out is how it allows us to become an extension of our customers' staff," said Brian Zorger, Building Solutions Consultant at Johnson Controls. "We strive to become invaluable team members to our customers by perfectly aligning our solutions and expertise with our customers' missions. Through continuous improvement, we can achieve measurable and sustainable success for our clients."

The local Johnson Controls team was able to fix HVAC equipment that had been broken for years, increasing uptime to greater than 90 percent. The team continues to achieve 100 percent completion of scheduled service visits every month, driving down repair costs, as well as driving and tracking the Asset Lifecycle Management Program to reduce total cost of ownership.

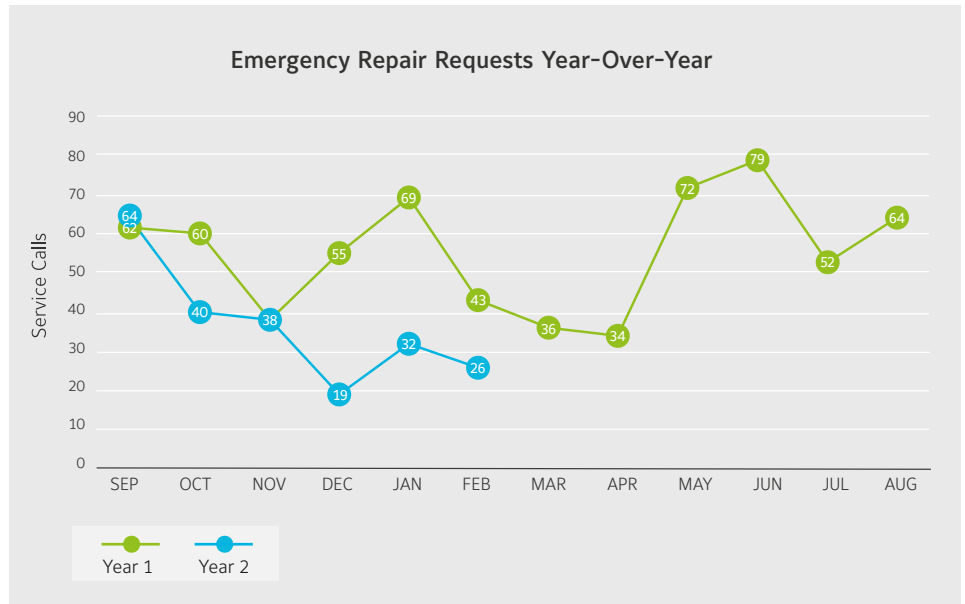
## Delivering reliability and economic value through essential support – every day

In its first year of deployment, the Asset Lifecycle Management Program created between \$500,000 –\$800,000 in cost savings when compared to the previous year. The programmatic approach Johnson Controls deployed for operations and maintenance at the plant has reduced the volume of maintenance requests by half, resulting in two financial quarters without after-hours callouts. In addition, the implementation of the program has driven an incredible \$40 million improvement in production output due to equipment uptime.

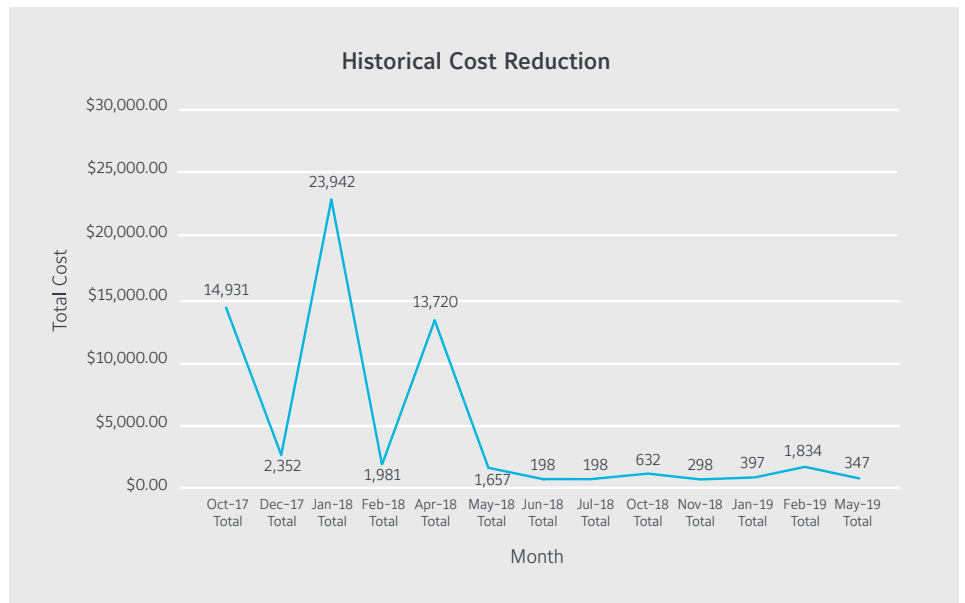
With Johnson Controls Asset Lifecycle Management Program in place, plant leaders and employees are confident that their HVAC systems are being well managed and properly maintained for maximum uptime, ensuring production stays on schedule with the correct temperature and humidity for operation. The account management efforts – highlighted by strong, accurate execution – have created a partnership that delivers tangible value to the manufacturing plant every day.

### Key components of a strong partnership that delivers real value:

- Shared values and a commitment to continuous improvement creates mission alignment
- Proactive maintenance program reduces total cost of ownership through asset optimization
- Broad capabilities, services, and expertise ensure solutions deliver required outcomes



Executing 100% on-time preventative maintenance through the first year.



An investment of \$50,000 for necessary repairs through an Asset Lifecycle Management Program saved the customer \$300,000 in asset replacement costs and lowered operating costs.

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