TRANSFORM THE EVERYDAY

Optimizing HVAC and Building Performance

How can a building maximize performance if its HVAC infrastructure is not serviced as a total system?

In a typical facility, the heating, ventilation, and air conditioning (HVAC) system accounts for more than **40% of a building's total energy use***. The HVAC system is also a significant contributor to the comfort and productivity of building occupants as well as meeting sustainability and regulatory requirements.

As such, it's critical to optimize HVAC performance as part of your **complete building management strategy**. Doing so will enable facility operations to positively impact organizational goals.

In this paper, we explore the importance and outcomes of implementing an integrated service strategy to **optimize HVAC system performance**, maximize energy efficiency, and increase staff productivity.

* Source: The U.S. Small Business Administration

SIEMENS

1 How HVAC Performance **Affects Business Goals**

With the right service strategies, your HVAC system contributes to the success of your business.

Reduces Operational and Capital Expenses

When an HVAC system performs at an optimal level, it increases system uptime and reliability, minimizes energy usage, reduces repair costs, and extends the equipment lifecycle.

Increases Effectiveness of Facilities Staff

Implementing digital technologies and proactive/predictive maintenance strategies improve HVAC performance as well as increase staff efficiency and productivity.

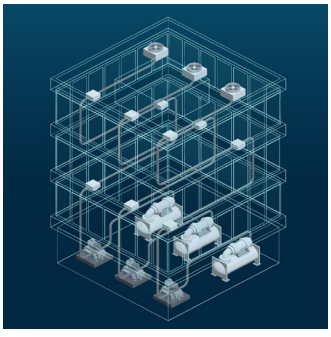
Enhances Occupant Comfort and Productivity

An optimized HVAC system achieves a quality indoor environment and increases occupant comfort, productivity, and well-being.

Achieves Sustainability Targets

Chiller plants, boilers, and air handling units consume an enormous amount of energy. A reduction in energy consumption can significantly reduce CO_2 emissions, helping to achieve sustainability targets.

Components of an HVAC System:



Mechanical Components

such as chillers, boilers, air handling units, variable air volume boxes, pumps, fans, coils, and associated physical components

Control Devices

such as valves, drives, starters, and sensors

Controllers and Associated Software

to automatically operate the system

2 Challenges of a Traditional HVAC Service Approach

Vendor Management and System Performance

When multiple service providers are used for the BMS and mechanical system, it can result in the following:

- Contradictory information and advice
- Lack of accountability
- Missed opportunities for minimizing energy usage and cost
- Failure to identify root causes and resolve lingering issues and inefficiencies

> "How do I juggle repairs on aging equipment, staffing and budget constraints, and meet compliance requirements – while keeping everyone happy? I work hard. How do I show results?"
>
> Source: Facility Director

Reactive Service and Maintenance

Many organizations today still use an outdated reactive approach, which can result in the following:

- Unexpected failures that drive capital expenses
- Higher demands on facility staff to address ongoing issues
- Increase in system failures and downtime cause a backlog of deferred maintenance and performance issues
- Missed opportunities to improve system performance due to a lack of synchronized data and analytics

70%

of companies lack complete awareness of when equipment assets are due for maintenance or upgrades.

Source: ServiceMax

3 Advantages of an HVAC Integrated Service Strategy

Streamlined Workflow and Communication

Having a single service provider oversee the complete HVAC system can provide valuable insights to improve workflow and maximize system performance, providing:

- Vendor accountability and consistent communication, eliminating redundant efforts
- Ability to perform root cause analysis
- Opportunities to save energy and costs

Proactive / Preventive Maintenance

An integrated service provider can analyze the data holistically from the BMS and mechanical equipment which:

- Enables potential issues to quickly be detected and addressed before they escalate and result in costly repairs
- Increases system uptime and reliability
- Improves maintenance effectiveness

Occupant Comfort, Energy Optimization, and Compliance

When an integrated service strategy is implemented, variables that impact the indoor environment can be optimized, including:

- Fine particulates and other contaminants
- Ventilation
- Staff effectiveness and productivity
- Precise building control parameters (temperature, humidity, and building differential pressure)

35-40%
Decrease in downtime

Source: US Department of Energy

20-25%
Increase in staff productivity

Source: US Department of Energy

USE CASE

Traditional vs Integrated HVAC Service

OBJECTIVE: REDUCE ENERGY USAGE AND COST

Your approach to HVAC service plays a major role in determining whether your facility supports or undermines your business goals. An HVAC system with a single service provider can help to proactively identify and quickly resolve issues before they negatively impact your facility. Meanwhile, HVAC systems with multiple service providers can leave your building vulnerable.

Figure 1 illustrates the difficulties of navigating a complicated web of service providers when an issue arises within an HVAC system.

In Figure 2, the same issue is quickly resolved with the help of Siemens integrated service.

Ready to learn more?
See the full case study in our video.

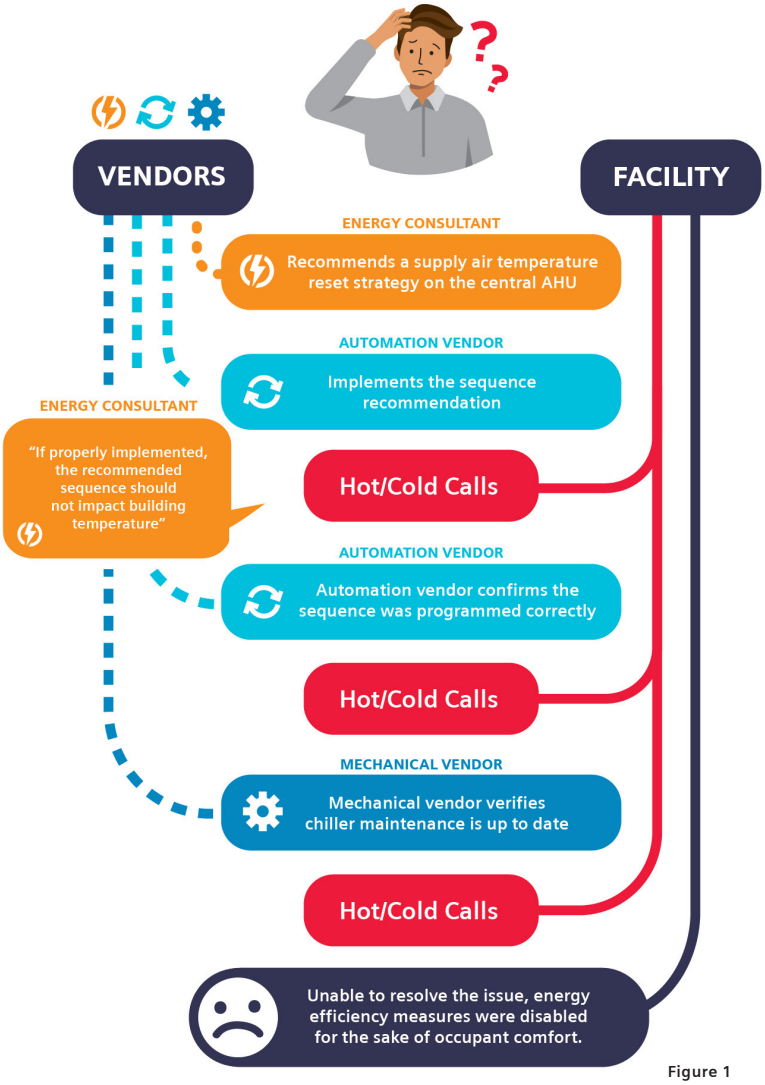


Figure 1

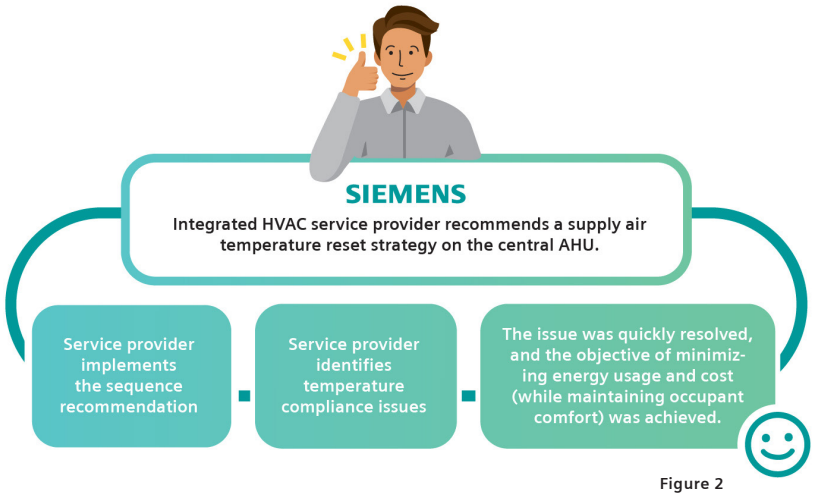


Figure 2

4 Selecting Your **HVAC Service Partner**

Selecting the right service partner is critical for success.

When it comes to your HVAC system, it's best addressed with a partner that takes an integrated approach to servicing your BMS and mechanical equipment as one system so you can optimize system performance, maximize energy efficiency, and increase staff productivity.

What should you look for in an HVAC service partner?

- **Takes a comprehensive approach** to overall HVAC system health
- **Leading service provider** for BMS and mechanical equipment, with extensive knowledge across all HVAC infrastructure and their interoperability
- **Leverages the power of analytics** and proactive tools to address maintenance issues
- **Uses digital services to monitor** and provide remote and onsite targeted maintenance
- **Provides tailored service programs**, delivers KPI-driven services, and demonstrates results (energy efficiency, temperature and humidity, compliance, ventilation/ CO_2, indoor air quality metrics, and system uptime)

Siemens Advantage

Siemens HVAC integrated service approach connects energy management strategies to advanced HVAC control and monitoring for intelligent facility outcomes.

Digital Technology for Workflow Optimization

By using data analytics and focusing on activities with the highest priorities, we help you optimize workflow and enhance staff productivity.

Knowledgeable Experts Deliver Results

With expert knowledge of integrated building systems, our 2,000+ service professionals utilize data to provide remote and on-site targeted service that delivers results.

Proven Outcomes Service Model

Combining a team of building experts, the latest analytical tools, and streamlined processes, we work in partnership with you to define, measure, and reach your specific business goals and objectives.

Ready for HVAC Integrated Services?

Contact Your Local Siemens Representative to Learn More.

Legal Manufacturer

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