



Animal Research Facility Solutions

Environmental control and monitoring for an accredited, compliant and efficient facility

Building Technologies

SIEMENS

Animal Research Facility Solutions

One Local Partner...Many Answers to Your Building Automation, Integration and Compliance Requirements

The strength of our solution lies in the close integration of its component elements. In an environment that seems to be getting more demanding by the day, it takes a flexible, expandable solution to provide the kind of agility you'll need to operate today and down the road.

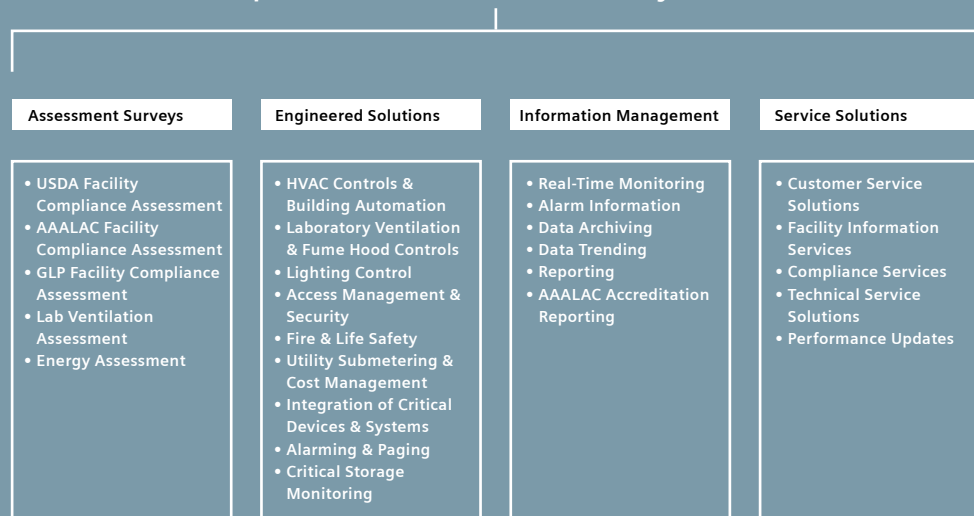
Animal research facilities are facing increasingly difficult challenges in today's environment. The demands of meeting changing regulations, improving efficiency, saving money and reducing risk are forcing everyone to examine their operating procedures from a fresh perspective. At Siemens Building Technologies, we have been providing our customers with innovative facility management products and services that address these very issues for many years. We have developed a solution designed especially for animal research facilities and their unique operational requirements.

Our solution takes a comprehensive approach to meeting the challenges you face every day. From the initial assessment through ongoing support, local expertise provides the systems, the services and the resources to ensure your facility is as compliant, efficient, cost-effective and safe as it can possibly be.

Combining advanced global innovation with extensive local expertise, Siemens Building Technologies can help you:

- Meet applicable regulatory and accreditation requirements
- Ensure the quality of environmental conditions
- Improve staff productivity by developing a turn-key operation through integration of third-party systems and devices
- Minimize operational costs through monitoring and control of environmental, equipment and utility conditions
- Maintain a reliable and secure reporting system
- Provide a secure environment to protect staff, animals and research integrity
- Provide safe and healthy work conditions to minimize risk and liability
- Provide a state-of-the-art environment conducive to recruiting and retaining staff

Complete Animal Research Facility Solution



Assessment Surveys

Before implementing an automation solution, it is critical to understand the current conditions of your facility's systems in order to develop a well-targeted tactical plan to address your needs.

With our Assessment Surveys, we'll analyze the critical aspects of your operation to identify any potential efficiency, regulatory, accreditation or safety issues. Our interdisciplinary team will identify existing processes that are working for you and where solutions can be integrated for maximum benefit.

These comprehensive assessments not only provide you with a thorough gap analysis or benchmark, but also form the basis for developing a strategic plan that will guide you in achieving your facility performance goals.

Areas of concentration include:

- USDA Facility Compliance Assessment
- AAALAC Facility Compliance Assessment
- GLP Facility Compliance Assessment
- Lab Ventilation Assessment
- Energy Assessment

Assess...
regulatory,
accreditation, safety
and efficiency issues in
your current facility
systems with our
Assessment Survey
program.



Engineering Solutions

Monitor and Control all from one system

Monitor and Control...
environmental
conditions, lighting,
access, fire and life
safety, utilities,
research subsystems
and devices, and
mechanical systems
with our Engineered
Solutions.

Siemens Engineered Solutions are uniquely capable of providing all the monitoring and control solutions for your facility. Using the power of the APOGEE® automation system, all of your building and research systems can be connected, allowing you to monitor, control, and report all integrated systems and devices from a single workstation.

Our Engineered Solutions for animal research facilities:

- Maintain proper pressurization while meeting desired air changes. Pressurization can be designed for positive, negative, or neutral spaces.
- Integrate lighting systems for programmable, automatic day/night cycle as well as manual control for staff needs.
- Insure the safety of staff with pressurization, ventilation, and efficiency strategies. Strategies are designed to meet the special needs of a lab environment including fume hood, biosafety cabinet, and laboratory room control.
- Integrate with animal watering, cage washing, and ventilated cage racks for coordinated scheduling with environmental and lighting systems as well as central monitoring, alarming, and reporting capabilities to increase efficiency.
- Monitor refrigerators, freezers, incubators, sterilizers, and other critical storage areas to meet regulatory requirements for monitoring, alarming, and reporting.
- Include Security Solutions for access control, CCTV, perimeter monitoring, intrusion detection, and duress monitoring.

Information Management

Easy access, archiving, and reporting

APOGEE Information Management Solutions provide easy access to all your facility's system information through the Insight® workstation for system monitoring and operation and the InfoCenter Suite® solution for data archiving and reporting. The system can be validated and meets the Electronic Records and Signatures requirements of 21 CFR Part 11.

The Insight software includes a wide range of applications designed to give the right people the right information at the right time.

Capabilities include:

- Assign access and privileges based on employees' areas of responsibility.
- Manage the entire life cycle of an alarm issue through tracking and enforcing mandatory operator actions toward alarm resolution using the AIM (Alarm Issue Management) option.
- Send critical alarms to pagers, phones, SMS or email using RENO (Remote Notification).
- Monitor and trend point data.
- Schedule and modify equipment operation.

The InfoCenter Suite solution provides solutions for collecting, reporting, storing, securing, and archiving large amounts of data.

- Automate reporting to meet AAALAC accreditation requirements.
- Access the data without being trained on the Insight workstation.
- Retrieve data for reporting, analysis, and regulatory inspection.
- Maintain accreditation, regulatory and energy conservation goals.
- Define your own reports or use the animal facility reports provided in the APOGEE GO® for Animal Facility Reports option.



Manage...
your entire facility
operation with
the monitoring,
reporting and data
archiving capabilities
of our Information
Management
Solutions.



Remote Notification

- Pager
- Cell Phone
- SMS
- PDA
- E-mail

Management Level Network (MLN)/Automation Level Network (ALN) - Ethernet TCP/IP/BACnet IP



APOGEE GO®
 • Insight®
 • InfoCenter Suite®
 • Animal Facility Reports



PXC Compact



PXC Modular with TX-I/O™



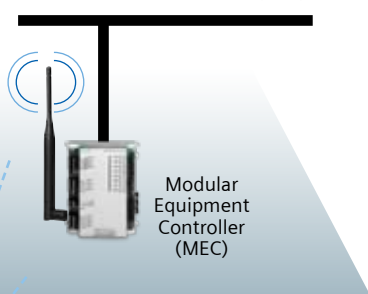
InfoCenter Suite®
 • Report Manager
 • Utility Cost Manager
 • OPC®



Insight® Server
 • OPC®
 • BACnet®

Connect with Research Subsystems and Devices:

Automation Level Network (ALN)

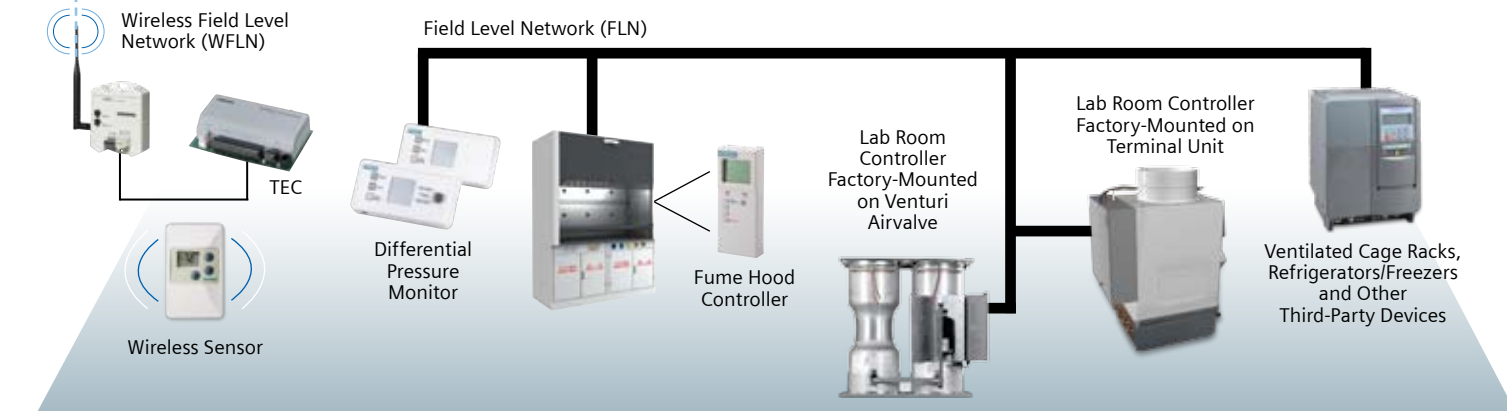


Modular Equipment Controller (MEC)

- Automatic Animal Watering System
 - Water Pressure
 - Water Leaks
 - Flush Cycle
 - Alarms
- Ventilated Cages/Racks
 - Airflow
 - Air Exchange
 - Temp/Humidity
- Cage Washers
 - Time On & Off
 - Temp
- Sterilizers/Autoclaves/Incubators
 - Time On & Off
 - Temp
- Freezers/Refrigerators
 - Temp
 - Alarms
- Warm/Cold Storage Rooms
 - Temp
 - Alarms
- Animal Conditioning & Enrichment Programs
 - Sound System
 - Audio/Visual Equipment

Wireless Field Level Network (WFLN)

Field Level Network (FLN)



Service Solutions

To ensure the continued success of an established automation program, day-to-day operations must be maintained to established standards. Our Service Solutions will help you maintain the state of control needed to meet regulatory and accreditation requirements, improve operational efficiencies, support a 24/7 operation, ensure immediate recovery and lock-in long term system performance.

To ensure a knowledgeable and reliable facility management staff:

- Educational Services
- Application & Technology Consulting
- Operator Coaching
- Onsite Building Performance Specialist

For reliable facility monitoring and reporting 24 hours a day, 7 days a week:

- Environmental Reporting and Consulting
- Utilities Reporting and Consulting
- InfoCenter Suite Custom Report Design and Creation
- InfoCenter Suite System Administration
- InfoCenter Suite User Training

To ensure continuous regulatory and/or accreditation compliance:

- Good Laboratory Practices (GLP) Compliance Services:
 - Animal Facility Assessment Survey
 - Calibration Services
 - Validation Services:
 - Validation of Building Automation System
 - Change Control Verification
 - Trend Analysis Reporting and Consulting
 - Mission Critical Point Verification
- Laboratory Compliance Services:
 - Chemical Fume Hood Testing
 - Biosafety Cabinet Certification
 - Biosafety Re-entrainment Testing
 - Room Pressurization Testing
 - Laboratory Safety and Efficiency Education

To secure preventative maintenance and immediate recovery programs for systems and equipment:

- Automation Controls Analysis and Optimization
- Business Protection and Recovery Services
- Control Loop Analysis and Optimization
- Repair and Replacement Services
- Emergency Onsite Response
- Emergency Online Response
- Network Analysis and Optimization
- Remote Facility Monitoring
- Mechanical Systems Service

To ensure long term system performance:

- Field Panel Updates
- Firmware Updates
- Software Updates
- Datamate Advanced Software Renewal
- Workstation Updates

Maintain... regulatory and accreditation compliance, operational efficiencies and reliable 24/7 operation with our Service Solutions.



With over 100 branches across North America, our local service technicians are highly experienced and easily accessible to provide quality service when you need it.

Animal Research Facility Solutions

Contact...

your Siemens Building Technologies representative to learn more about our Solutions. You'll discover how the science of advanced building control and integration can benefit your staff, your research and your bottom line.



Regulatory and Accreditation Compliance:

Siemens understands what it takes to provide a system that supports AAALAC Accreditation as well as Good Laboratory Practices (GLP), and 21 CFR Part 11 (Electronic Signatures/Records) requirements. We offer the variety of solutions and expertise required to properly design, install, and maintain solutions in regulated and accredited facilities. Customized application solutions are also possible through working with engineers and consultants to meet the ever changing regulations and needs in these specialized areas.

Efficient:

The monitoring and control capabilities of the APOGEE Building Automation System help to lower operating expenses and let staff focus on core tasks. Automated monitoring, archiving, and reporting of room conditions, storage areas, and research subsystems provide the records needed for accreditation without using staff time to record data. Monitoring and alarming on environmental conditions, such as ammonia levels, can provide triggers for need-based cage cleaning rather than relying on scheduled tasks. In addition to the benefits of automated monitoring, the control capabilities of the APOGEE automation system can improve energy efficiency by responding to changes in needed ventilation and environmental conditioning. Providing both monitoring and control functions from a single system also provides efficiencies such as eliminating the need for maintaining sensor accuracies on two separate systems.

Integrated:

Siemens experts can recommend a variety of integration solutions to make your facility and staff more efficient. Siemens combines general HVAC, laboratory controls, security, fire and life safety, critical storage monitoring, along with animal watering, cage washing, and cage ventilation solutions. This provides infrastructure efficiencies as well as ease of operation with a consistent way to monitor the status of the system and receive alarms. An integrated solution also has the capabilities to provide concise, meaningful reports with all the significant information about a room or point. This could include temperature, humidity, ventilation, and lighting data as well as alarms and their resolution.

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