Integrated services and solutions that optimize performance, reliability and value throughout the data center and telecom facility lifecycle

World-Class Mission Critical Facilities Services

NTT FACILITIES GROUP
Electronic Environments Corporation (EEC) has transformed traditional infrastructure services by fully integrating our design, build and maintenance capabilities.

Through planning and programming we go beyond reaction to provide proactive solutions designed to anticipate your future requirements. No one can predict the future but we can be prepared for it in ways that enhance reliability, performance and value throughout the entire data center lifecycle.

**The benefits to this integrated approach are clear:**

**Single-point-of-contact**
The consolidation and management of vendors, service providers and OEMs is our specialty. The EEC “one point-of-contact” makes it easier for our customers. EEC isn’t limited to a particular product category or equipment brand so customers can rely on a single source, avoiding multiple vendor coordination issues in critical times.

**Standardization, scale across multiple sites**
For companies with multiple sites, working with EEC makes standardization and scaling not only more manageable but also more cost-effective.

**Expertise in infrastructure equipment**
Our customers continuously leverage EEC’s interdependent mechanical and electrical expertise. Three decades of mission critical knowledge are at your disposal.

**Proactive preventive maintenance**
Identifying problems through proactive maintenance and the use of predictive analysis to avoid potential failures is key. In complex data centers, failures do occur. EEC takes the time to discover root causes of the problem, not just the symptom. While our standard service agreements meet or exceed our client’s expectations, we’ll work with you to craft a custom program that aligns with your business needs.

**Economies of scale, consolidation**
Our technicians are cross-trained to service equipment on multiple OEM platforms. EEC also offers skilled talent in multiple trades saving you the time and money in arranging service with different vendors for each piece of equipment.

**Asset management, capital planning**
From inventory and repair analysis to assessments, EEC will evaluate your infrastructure capacity to determine if upgrades, replacements or new technology may be required.

EEC’s portfolio of solutions and services cover five interdependent areas of the mission-critical facilities lifecycle to optimize, reliability, performance and value. Operations & Maintenance, Assessments, Planning and Design are key components of our MCLS integrated approach.

One thing is certain... data center systems and operations are dynamic. With increasing data demands and energy consumption concerns, the establishment of reliable and efficient data centers and telecom facilities is paramount. Simply put, the need for 24x7x365 data has become our way of life.

Developing standards and practices that continue to raise the bar in our industry is essential. Supplying infrastructure solutions to mission critical customers requires fast response and technical expertise and EEC has a proven track record of accomplishing this while utilizing safety protocols and procedures.

**Failure is not an option**
The entire EEC organization is focused on the sole purpose of providing the highest level of service to those who realize that failure is not an option. When we talk about mission critical we know exactly what it means.

As an NTT FACILITIES GROUP company, EEC has significantly increased its ability to help data center and telecom professionals. Data center clients benefit from the comprehensive, holistic lifecycle approach that EEC has. Our expanded presence and partnerships allow EEC to offer unsurpassed innovation and service to our customers worldwide.
Field Services
EEC excels in electrical, mechanical and power generation service whether it’s a one-time urgent repair or an ongoing project. To minimize unit-related failures, we offer comprehensive preventive maintenance (PM) programs. Our PM programs ensure maximum reliability of power and cooling equipment by providing systematic inspections that can lead to detection and correction of problems before a failure occurs. Our PM services features:

- Trained, Platform-Independent Technicians & Certified Technicians
- 24x7x365 Availability For Any Data Center Issues
- 15-Minute Call Back
- 4 Hour On-Site Response
- Energy Efficiency & Server Room Cooling Solutions
- Environmental & Safety Compliance
- Comprehensive Insurance Coverage
- Ability To Work in “Live-Environments” Without Putting Systems or Personnel at Risk

Managed Services
EEC offers Managed Services to customers who have a need for a service contract and for those that have multiple sites. All trades and vendors are managed under this umbrella service so that a customer has a single point of contact to address their infrastructure needs. Customers value our ability to self-perform and deliver superior services within this service program. If additional resources are needed, EEC relies on strategic partners who meet standards specified by EEC. We understand the challenges of using a variety of services and solution providers to build and run your mission-critical facility throughout its lifecycle. For this reason, we pioneered the technique of extending a single-point-of-contact for each of our Managed Services customers.

Managed Services feature many of these enhanced options:

- **Single Source** - One Contract, One Phone Number, One Source of Accountability
- Preventive Maintenance per Manufacturers’ Recommendations
- Unlimited Emergency Service Calls
- Field Service Record-keeping
- Predictive Analysis/Maintenance
- Web-based Asset Management
- Infrastructure Training
- Monitoring
- Load Bank Testing
- Infrared Thermography
- Priority Access to Other EEC Services

Whether it’s service for a single data center or nationwide maintenance of wireless cell sites or edge computing sites, Electronic Environments possesses the knowledge, experience, and technical expertise to deliver high reliability and the exceptional performance required by technology driven organizations.
Facility Operations Services

EEC provides an on-site, cost-effective solution to companies seeking an effective and efficient Operations and Maintenance program. Because of competitive pressures and the complexity of mission critical environments, organizations utilize EEC to provide this specialized service to reduce costs without sacrificing system reliability and uptime. EEC’s Facility Operations (FO) Services encompass on-site staff that manages your facility operations and maintenance services for both single and multiple sites. Facility Operation Services include the management of these areas:

- Safety
- Security
- Emergency Preparedness and Response
- Service and Maintenance
- Change Management
- Performance
- Efficiency
- Service Partner Networks
- Documentation
- Operations
- Training
- Financial Management
- Operational Support Systems
- Reporting

An Integrated Approach

In every EEC program the service is delivered by integrating the people, the processes and the technologies to achieve improved performance of the critical systems and mission critical infrastructure.

People:
EEC is fully responsible for bringing qualified personnel to execute your Facility Operations program. From determining the team size and skill set requirements to the recruitment and site training EEC is considered a valued partner. Both On-Site and O&M Service personnel are some of the best and brightest in our industry.

Technology:
Computerized Maintenance Management Systems (CMMS), Electronic Document Management Systems (EDMS) and Data Center Infrastructure Management (DCIM) are tools we use to ensure your Facilities Operation runs as smooth as possible. From asset management to work-flows and energy management, EEC’s goal is high reliability and system availability of your mission critical facility.

Processes:
Processes are tailored to your mission critical needs. Our emphasis on Maintenance Management includes preventive and predictive maintenance as well as vendor management and self-performed service and maintenance. There’s an established process for every task, from regular audits and change control to continuous improvement. EEC also uses an independent Quality Specialists who ensure that our programs adhere to the process and align with best practices.

Assessments

- O&M - Facility Operations
  - Safety
  - Security
  - Emergency Preparedness and Response
  - Service and Maintenance
  - Change Management
  - Performance
  - Efficiency
  - Service Partner Networks
  - Documentation
  - Operations
  - Training
  - Financial Management
  - Operational Support Systems
  - Reporting

By working with many mission critical customers we've enhanced tools, methods and procedures to improve operations and system performance. We've established Key Performance Indicators (KPIs) to track the success of each of our Facility Operations programs. This is an ongoing process that continues to evolve as the industry changes. These indicators currently include:

- Critical Loads
- Essential Loads
- Emergency Preparedness
- Emergency Response
- Security
- Support Systems
- Managing Monthly Utility Invoices
- Managing Projects & Subcontracts to Reduce Cost
- Energy Efficiency
- Process Improvement
- Financial Performance
- Quality Audits
- Quality Improvement
- Staff/Training
- Maintenance Reporting
- Operational Reporting
- Notification
- Environmental Compliance

EEC provides Facility Operations Services to clients within the Technology/Telecom, Collocation and Finance industries and we also deliver direct services to many Fortune 500 companies nationwide. If you're contemplating outsourcing your mission critical facility operations, contact us. Let's discuss a custom program that will:

- Save you money
- Improve your data center's performance
- Eliminate your risk
- Meet your business needs
- Meet your data center performance objectives
As cloud, virtualization and high density computing continue to grow, the need to adjust for change in the data center continues. Data center professionals are focused on lowering their PUE and are looking for new methods to cool and power their environments more optimally. Today, a careful evaluation of a data center’s infrastructure is essential to maintaining reliability and performance. Assessment services enable you to proactively manage your power and cooling.

The EEC engineering team regularly performs “on-site” data center assessments to examine the current performance and design of data center facilities. These assessments are crucial in planning because they identify existing and future power and cooling capabilities. Power quality problems can occur based on any number of issues, like changes to your systems (adding & removing equipment), the age or your facility, harmonics, poor design or installation practices, improper wiring between or within systems, or improper grounding. Assessments are also useful in determining where energy efficiencies can be improved and how you can qualify for utility-funded rebates or incentives.

Our assessment process begins as an open-ended, one-on-one consultation with a highly-skilled data center specialist. Ask us about any data center issue, upgrade or improvement that’s on your mind. Based on your feedback, we’ll configure an assessment package tailored to your business needs. EEC initially offers three levels of assessments:

- **Level One Health Check** - A basic service that offers an inventory of your critical power and cooling equipment, notes overall operating conditions and recommends solutions or services to improve infrastructure reliability and service life.
- **Level Two Intermediate Assessment** - A more broad service that provides room scale power and cooling capacity, utilization information as well as rack level cooling analysis using airflow measurement and infrared imaging (thermography).
- **Level Three Comprehensive Assessment** - A detailed power and cooling analysis based on measured electrical distribution load readings at the rack level.

We’ve utilized Computational Fluid Dynamics (CFD), thermal imaging, load bank testing, circuit tracing and CAD floor plans as additional assessment tools for many clients.

EEC also offers an Operational Readiness assessment. This service evaluates your programs including change-management, vendor-management, maintenance, safety, training and regulatory compliance.

### Assessments

### Planning

Even the most robust information technology systems are only as good as the infrastructure that supplies the power and cooling to keep it running.

Once a thorough assessment is complete you’ll want to start on remedies for situations that need attention. You’ll gain a valued partner to collaborate with you on your next project because EEC brings both the Design / Build experience and facility services to deliver a comprehensive data center strategy. We’re simply not a “one and done” operation, we’re fully prepared to service any facility enhancement or design/build project we complete.

During the planning phase, EEC evaluates your requirements, project objectives, data center condition, existing infrastructure, new technologies and deployment options. We deliver a report that includes some of the following deliverables: site survey, site selection and analysis, architectural plans, preliminary scopes of work, preliminary budgets, schematic level drawings and proposed schedules.

Once a plan has been established, EEC executes the following during the design phase:

- Pre-construction budgets and scheduling
- Contract and equipment specifications
- Final design including architectural, mechanical and electrical engineering
- Long lead planning, equipment pre-purchase

### Design

**A world of expertise in every facet of the business**

EEC’s consulting team is devoted exclusively to the design, engineering and management of critical facilities. Our staff includes Professional Engineers (PE) and LEED engineers that are experts in power and cooling and have a unique understanding of both large and small facilities. This team is backed by EEC’s business partnerships with most original equipment manufacturers.

Today, data centers and telecommunications facilities are undergoing massive-scale transformation that is changing how they operate on a fundamental level. The EEC team is actively working on the latest power and cooling technologies and can help to quickly implement these new technologies into your data center.

If you’ve outgrown your facility or need to consolidate your sites, our Construction team has been instrumental in building data center space.
EEC’s Infrastructure Manager™ captures all site and equipment data into an easy, on-demand database, whether it’s service for a single data center or nationwide maintenance of data centers, edge sites, wireless cell sites, distributed area system (DAS) or telecom structures. Infrastructure Manager™ gives you the visibility and enhanced operating efficiencies available through a common, yet secure, universal database.

In addition, equipment and service records are pro-actively managed for each account which means real time information available for all details of your site. Thorough and informed analysis of this data translates into an accurate assessment of any situation that may occur.

When an emergency response is required, EEC’s service escalation process includes Central Dispatch and Operations Supervisors that monitor the process from the initial service request until customer sign off following equipment restoration and problem resolution.

Access to information such as age and condition gives us the ability to conduct a trending analysis on equipment. As a result, you are able to pro-actively manage your infrastructure.

The accessible information includes:

- Equipment Information and Load Profiles
- Service Call History - Both Open and Closed
- Preventative Maintenance Schedule
- Equipment and Battery Trending
- Hazardous Waste Tracking for Environmental Compliance
- Site Maintenance Costs
- Site Details and Directions
- Invoice History

Think of us as being "just down the hall" when you need answers or a lightning fast (15 minute call back) response to a situation. Our customers are assigned a specific representative from our Customer Care Center that is intimately knowledgeable of their systems and needs.

When an emergency response is required, EEC’s service escalation process includes Central Dispatch and Operations Supervisors that monitor the process from the initial service request until customer sign off following equipment restoration and problem resolution.

There’s an explosive demand for data centers and the electricity needed to fuel them. The majority of legacy data centers experience some form of energy inefficiency, such as poor cooling systems and outdated technologies. When energy is wasted, money is wasted.

EEC employs several energy-efficiency solutions and can apply them to your data center so that you see significant improvement in reliability, capacity, power usage effectiveness (PUE), and total cost of ownership (TCO). Whether you’re building a new data center, assessing an existing one or simply looking for optimal performance, gains in energy efficiency are still a priority.

Assessments
One of the methods EEC utilizes to gain energy efficiency is through the use of assessments. EEC’s assessments provide a critical evaluation of your facility’s ability to manage emergencies and overall preparedness, as well as provide a benchmark comparison to best practices and industry regulations.

Equipment Upgrades
Throughout the lifecycle of your data center, you’ll likely encounter a need for an upgrade in your equipment and a subsequent boost in your capabilities and system performance. EEC has helped its customers meet their growing demands by implementing more robust mechanical and electrical systems, assisting with “pod” integration or even relocating data centers.

Dynamic Cooling Management
Dynamic Cooling Management is a system that takes a customized thermal modeling approach to each facility and keeps pace with the constant changes that take place in a data center. Instead of zone-level control, cooling equipment is optimized individually based on real-time needs. EEC has implemented these systems for our customers and offers flexible models for procurement.

Baseline Energy Reduction
EEC works with its customers to implement primary power and cooling strategies that result in energy savings. From integrating sustainable energy sources such as solar, fuel cells and wind to working with high voltage DC power, EEC leads the way in delivering these energy reductions directly to their clients.