EEC-NY assists National Communications Company with Increased Data Center IT Load Capacity and Energy Savings

QUICK FACTS

Location: NY Data Center

SUMMARY OF PROJECT

Cost of project: $80,899.00

Estimated annual savings: 89,993 kWh

Utility incentive: $14,399.00

BENEFITS

* IT equipment is thermally safe
* Increased cooling redundancy
* Increased IT load capacity by 40kW
* 24x7 monitoring
* Energy incentive from the ConEd/NYSERDA

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PROJECT SUMMARY

In today's data centers, new server technologies have consolidated computing power into smaller footprints; unfortunately in many older data centers this creates localized heating issues called hot spots.

A national communications company in the greater New York City area had one of these "legacy" data centers. Their cooling system had adequate capacity; however airflow distribution within the data center prevented it from being used effectively. The company specified the following criteria for changes in their Data Center:
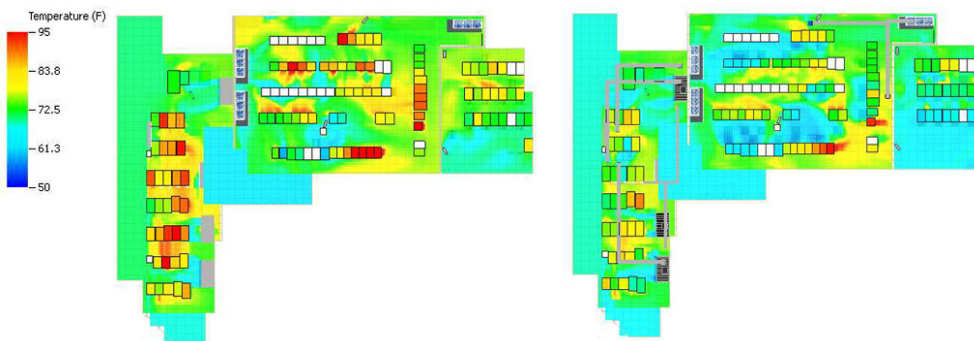
* Improving thermal performance of the IT equipment within Data Center.
* Equipment must operate within recommended ASHRAE standards.
* Racks must not be moved or shut down.
* Additional IT load capacity is desired.

The Project:

The communications company's data center consists of two rooms, these rooms are in a raised floor configuration with both downflow and upflow computer room air conditioning (CRAC) units.

Working closely with the New York based EEC-NY, the first order of business was to perform an in-depth thermal analysis on the data center in order to recommend optimal thermal designs which would be free of hot spots, operate reliably and allow higher IT density. From this thermal analysis, the company was offered the Demand Based Cooling (DBC) system from AdaptivCool.

The DBC system manages the entire data center as a unit rather than allowing each CRAC to operate independently. While the intelligent air movers manage local temperature variations and return air problems, a central processing unit collects temperature information from numerous temperature sensors located throughout the Data Center. The DBC system responds to changing room-level conditions by managing the operation of the CRACs and air movers in concert. Real time monitoring and alerting allows cooling problems to be discovered early so they can be addressed before causing serious issues in IT operations.

Conclusion:

After the system was installed, the company was able to safely increase it's IT load capacity by 40kW; alleviating the need for additional cooling while bringing the average room temps into the approved ASHRAE range. The excess cooling can now be deployed for redundancy purposes in case of emergency.

The above images show the Computational Fluid Dynamics (CFD) model of the data center. On the left is the model prior to DBC installation and on the right is after the installation.

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EECNY
DATA CENTER MISSION CRITICAL

SPECIALIZING IN DATA CENTER & TELECOM:

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Power & Cooling Assessments

Computational Fluid Dynamics (CFD)

Infrared Thermography

Data Center Energy Efficiency Solutions

Cooling Solutions

Air Flow Managment

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Monitoring

Maintenance Tuning

SITE SERVICES

Preventive Maintenance

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Web-based Asset Management

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Downtime... You Can't Afford It

Electronic Environments Corporation (EEC) has worked with **mission critical data center and telecom operations for 25 years**. We know that downtime is not acceptable and it is our mission to help you eliminate it—24/7/365. From site design, build and maintenance services to data center energy efficiency solutions—Electronic Environments has the solutions to **keep your critical facility up and running continuously and cost-efficiently.**

Technical Expertise

Because Electronic Environments designs and builds IT and telecom mission critical facilities, we understand the interactive effect each component has on the entire infrastructure. Whether it's service for a single data center or nationwide maintenance of wireless cell sites, **we possess the knowledge, experience, and technical expertise** to deliver the high reliability and performance required by today's technology driven organizations.

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