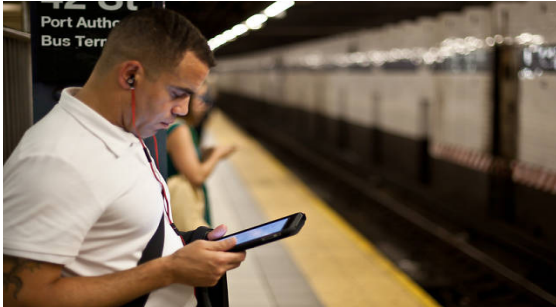


# MISSION CRITICAL CREATING EXCEPTIONAL ENVIRONMENTS.



With over 49 years of expertise, we understand that single points of failure are not an option in Mission Critical environments. . FEB Engineering provides integrated planning, architecture, engineering, commissioning and project management for IT facilities. Our intimate experience with facilities reliability allows us to carefully select systems and components that optimize the power of cooling with energy efficiency while providing multiple levels of availability. We integrate rack-and-server solutions to optimize new, highly efficient IT with closely coupled cooling and power delivery schemes that minimize the demand for power, space, and cooling. Our past project experience ranges from 500 square foot data centers to 150,000 square foot collocation facilities. We have provided engineering services for mission critical facilities in markets such as utilities and communications, data processing, shared collocation, financial institutions, medical institutions and large commercial facilities.

## FEATURED PROJECT



### BASE STATION HOTELS, TRANSIT WIRELESS MANHATTAN, NY

Governor Andrew M. Cuomo is excited and proud to announce that cell service and Wi-Fi was available a full year ahead of schedule, with all four carriers (AT&T, Sprint, T-Mobile and Verizon Wireless), across all NYC underground subway stations. In addition, the Governor thanked all of the partners involved who were instrumental in connecting New Yorkers to Wi-Fi in the country's busiest transportation network. Governor Cuomo stated, "This will better connect New Yorkers who are on-the-go and build on our vision to reimagine the country's busiest transportation network for the future."



FEB was instrumental in enhancing public safety communications services to all of New York City's underground subway stations. FEB was a lead partner in the engineering to develop a shared wireless infrastructure within 279 underground stations of the New York City subway to provide commercial services for AT&T, Sprint, T-Mobile and Verizon Wireless customers. MTA subway riders spend an average of 11 minutes per connection to the Transit Wireless network. Transit Wireless' network enables an average of 6.5 million Wi-Fi sessions per month from 1 million unique riders. Project Highlights:

- Provided MEP design and construction administration services for 5 separate mission critical facilities in NYC
- Data Center spaces ranged from 5,000 SF to 15,000 SF
- Generator ranged from 750 kW to 2,000 kW
- Mission Critical sites were located in Midtown Manhattan, Downtown Manhattan, Queens, The Bronx and Brooklyn
- Mechanical system design included Dx systems, condensers water systems and pump refrigerant CRAC units.
- Total cost for all five projects was approximately \$16 million.
- FEB was the project lead for all Architectural and Engineering services.
- Project was completed a year ahead of schedule and under budget.

## MISSION CRITICAL SNAPSHOT

## INDUSTRY EXPERTISE

### Mission Critical

Facility types include:

- Data Centers
- Collocation Facilities
- Server Rooms/IT Rooms
- Network Operation Centers (NOC)
- Switch Sites

What we do:

- Feasibility Studies
- End of Life Studies
- Mission Critical Assessments
- New Construction
- Expansions/Renovations/Enhancements
- Generator/UPS Replacements
- Plant Replacements/Central Cooling
- Short circuit/Coordination /Arc Flash Studies

1515 Arch Street	Exel Supply Chain	PHEAA
Abington Memorial	Folica	Philadelphia 911
Access Group	Fortress Mission Critical Data Center	Philadelphia Police Administration Data Center
Actelion	Friedman, Billings, Ramsey Group	Philadelphia, City Hall
AEGON Data Center	Geneva	Princeton Datasite
Agile Princeton Data Site	GHR Data Center	Qwest Diagnostics
Alpha Systems	Global Communications Company	Reading Hospital
Ameri Health	Goddard Schools	Renaissance Technologies
AmerisourceBergen	H.E. Williams	SE Global
Animas	Harron Communications	Select Medical
ARI Fleet	HCL Data Center	St. Joseph's University
Asplundh Tree	HUP	State Street Data Center
BigChalk.com	IAS Bio Building	Steel Orca
Bryn Mawr Rehab	ICT Group	StoneMor
Catholic Health Initiative	IPR International	TD Bank
CBHNP- Perform Care	Keystone Mercy Data Center	TEK-Park
Chester County Intermediate Unit	Longwood Gardens	The Hartford
Church & Dwight	Main Line Health	Thomson Reuters
Commerce Data Center	Marlin Leasing	Toll Brothers
Confidential Broadcasting Company	MARS Data Center	Transit Wireless
Confidential Telecommunications Co.	McCloud USA	TriTech Printing
Crump Life Insurance	McKesson	University of Pennsylvania Health Systems
CSL Behring	Merrill Lynch	Upper Main Line Health Center
Cyber	Metromedia Fiber Network	Users
Delaware River Port Authority	Network Plus	Verisign Inc.
Devereux	Network Solutions	Vertex
Eagle National Bank	NFL Films	Vertical Screen
Eclipsys Corp.	Nipro Glass	Villanova University
Electronics Boutique	Nutri Systems	Vishay Inter Technology Inc.
Endo Pharmaceutical	PAB 911 Call Center	XO Communications
Ephrata Medical Center	Parx Casino	
Executive Health Resources	Penn Mutual Life Insurance	

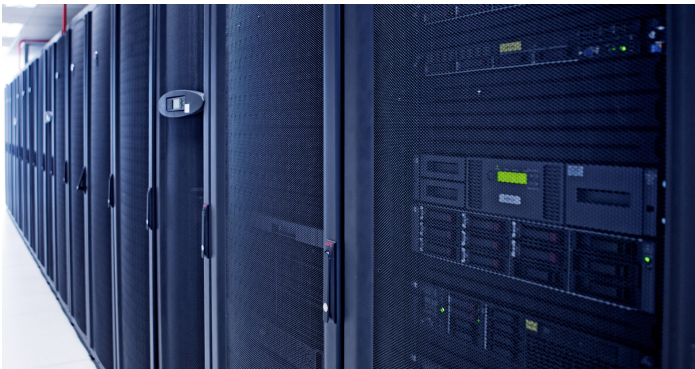




#### **NATIONAL CABLE COMPANY**

CONFIDENTIAL

Full A/E Design for a 5,300 SF data center and 3,000 SF office space located in Philadelphia, PA. Project included redundant generators and redundant UPS systems. MEP design for multiple data center locations throughout PA.



#### **EXEL SUPPLY CHAIN**

MECHANICSBURG, PA

Full A/E upgrade from a Tier I space to a 4,100 SF Tier III data center space. Project included new UPS System and diesel generator.



#### **IPR INTERNATIONAL**

WILMINGTON, DE

MEP | FP design for a 1,000 SF data center fit out.



#### **CSL BEHRING**

KING OF PRUSSIA, PA

Mechanical and Electrical engineering services for a data center expansion.



#### **STEEL ORCA**

MONMOUTH JUNCTION, NJ

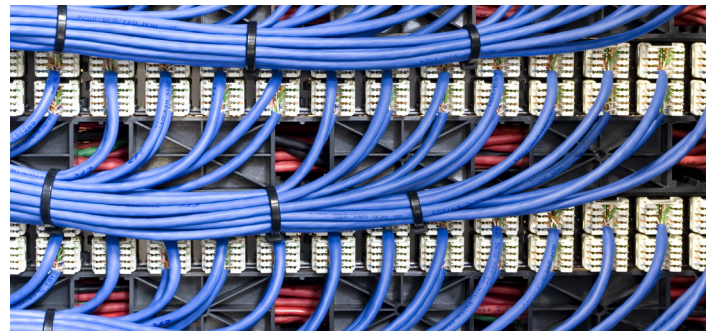
Mechanical and Electrical design for a new data center.



#### **PRINCETON DATASITE**

MONMOUTH JUNCTION, NJ

Mechanical and Electrical | FP design for a 5,000 SF, data center fit out. Design included new generators and UPS Systems.



#### **QUEST DIAGNOSTICS**

NORRISTOWN, PA

Mechanical and Electrical | FP design support for a data center fit out.



#### **NFL FILMS**

MOUNT LAUREL, PA

UPS capacity/redundancy upgrades. One line diagram updates and feasibility study.

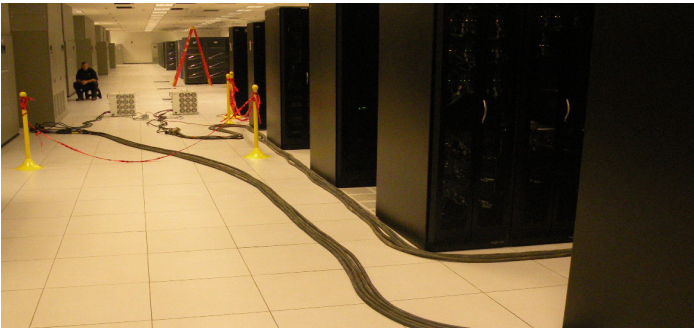




### MAIN LINE HEALTH

CONCORDVILLE, PA

MEP design for new server room.



### XO COMMUNICATIONS

MULTIPLE LOCATIONS IN NYC, FAIRFAX VA, SALT LAKE CITY, SMYRNA, GEORGIA, NASHVILLE, NEWARK, MIAMI, DC, CHICAGO, BOSTON, AUSTIN, TEXAS

MEP engineering design for multiple data center locations.



### VERTICAL SCREEN

MOUNT LAUREL, NJ

Mechanical and Electrical | FP engineering design for 1,100 SF data center space.



### ENDO PHARMACEUTICALS

EXTON, PA

MEP design for a 2,500 SF data center. Fit out project included redundant UPS systems.



### NATIONAL BROADCASTING COMPANY

CONFIDENTIAL

MEP | FP | FA infrastructure upgrades over 6 year period in mission critical broadcasting facility. Every project was constructed while critical systems remained in full operation. Total project cost is estimated at \$35 million.



### STATE STREET CORPORATION

NEW YORK, NY

MEP infrastructure upgrades for data center. Designs included new generator and UPS systems for various projects.

### THOMSON REUTERS

HAUPPAUGEN, NY

Commissioning services for data center HVAC upgrade and PDU installation project.

### MAIN LINE HEALTH

NEWTOWN SQUARE, PA

MEP design for new server room.





### **SELECT MEDICAL**

HARRISBURG, PA

Electrical design for UPS replacement.



### **ACCESS GROUP**

CHESTER COUNTY COURTHOUSE BUILDING WEST CHESTER, PA

MEP design for new server room.



### **STONEMOR**

TREVOSE, PA

Electrical and Mechanical design for computer room fit out.



### **CHURCH AND DWIGHT**

LAKEWOOD, NJ

Electric and Mechanical design for computer room fit out.



### **EHR: EXECUTIVE HEALTH RESOURCES**

CONFIDENTIAL

Mechanical and Electrical design for new UPS System and DX system computer room expansion.



### **MAIN LINE HEALTH**

BERWYN, PA

Mechanical and Electrical design.



### **READING HOSPITAL**

READING, PA

Design for Switchgear and UPS Systems.

### **KEYSTONE FIRST**

TINICUM, PA

Electrical design for the IDF Room power redistribution.





#### **ARI FLEET**

MOUNT LAUREL, NJ

Electrical design for new UPS System.



#### **PENN MUTUAL**

HORSHAM, PA

Electrical design for new generator and UPS System.



#### **TD BANK**

MOUNT LAUREL, NJ

Electrical design for new UPS System and generator distribution.



#### **BRYN MAWR REHAB HOSPITAL**

MALVERN, PA

Electric and Mechanical design for computer room fit out.



#### **TOLL BROTHERS**

HORSHAM, PA

Electrical design for data center upgrades.



#### **AMERIHEALTH CARITAS**

TINICUM, PA

Mechanical and Electrical design for a new Data Center renovations.

#### **NATIONAL CABLE COMPANY**

WEST GOSHEN, PA

MEP design for a 12,000 SF Data Center. Included (4) 1,750kW generators and (6) 1,000 kVA UPS Systems.

#### **NATIONAL CABLE COMPANY**

DOWNINGTOWN, PA

Design for 12,000 SF Data Center, 48,000 SF office fit out and 8,000 SF Data Center. Included (2) 2,200 kW generators and (3) 750kVA UPS Systems.