Distributed Energy/Combined Heat & Power Resiliency/Micro-Grid Qualifications

CONCORD ENGINEERING

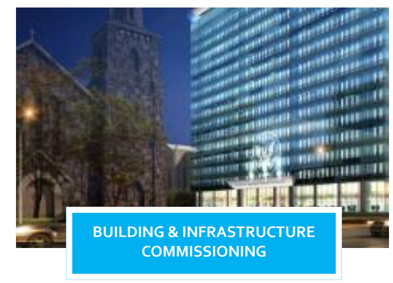
www.concord-engineering.com

Firm Overview

Founded in 1989, Concord is a full-service engineering, energy consulting, construction management and commissioning firm. With 100 engineers, designers and energy consulting professionals across four offices, Concord delivers end-to-end whole facility solutions specializing in services that enhance performance, increase efficiency and reduce downtime for both public and private sector clients. Backed by our technical expertise and wide range of services our commitment to client satisfaction has made us leaders in many regional and international markets.

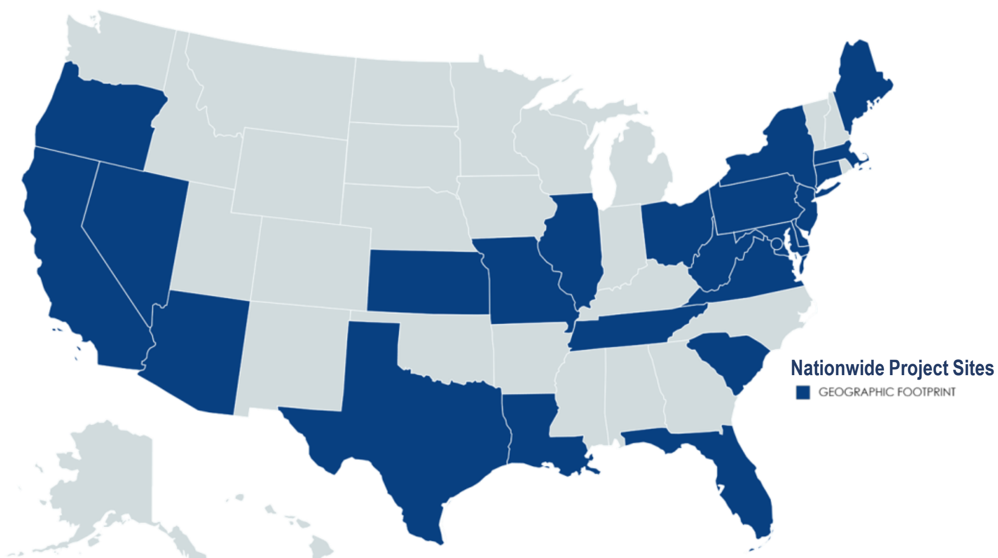
BUILDING YOUR TOMORROW!

ISO 9001:2015 Certified



About

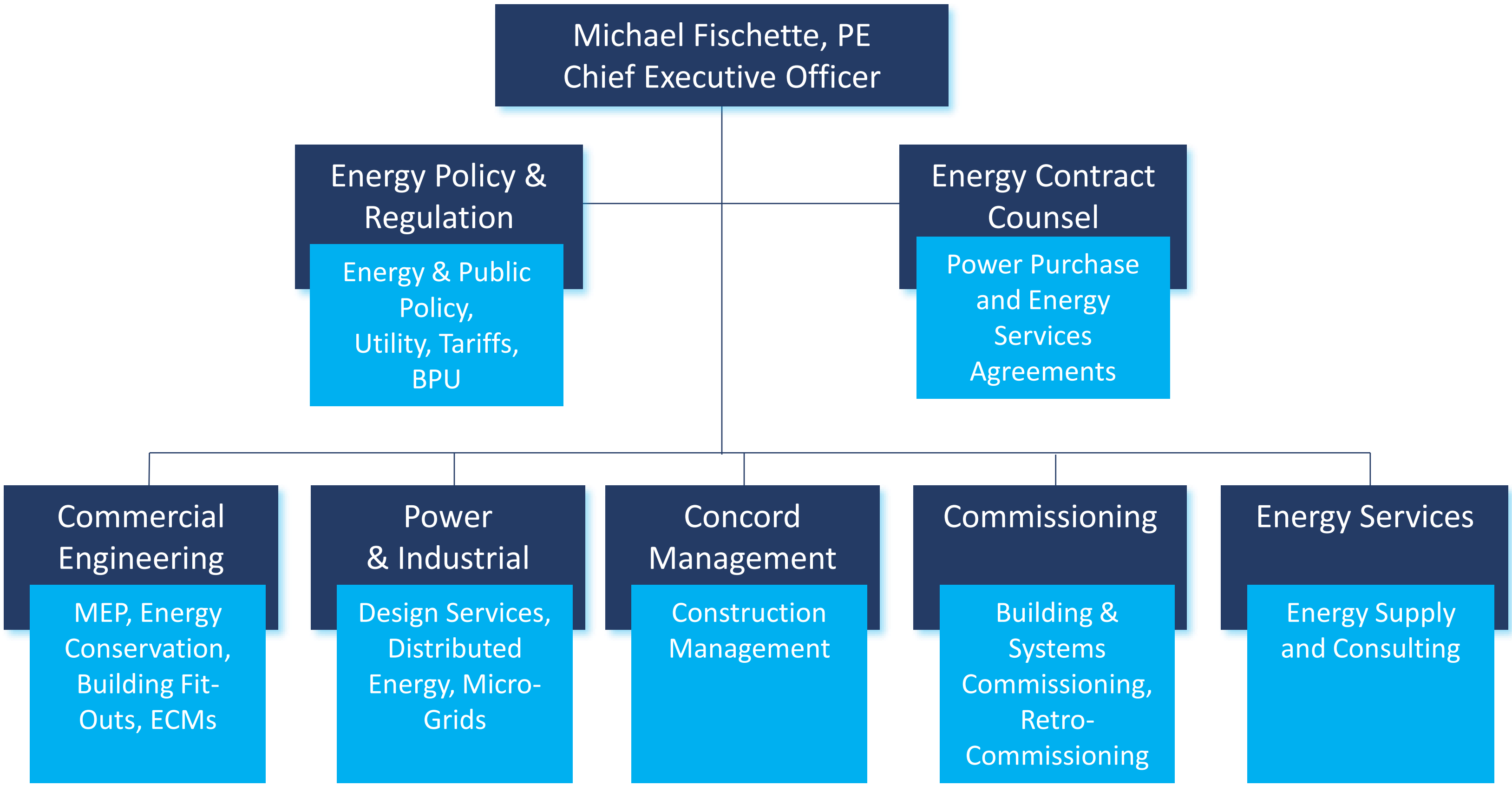
- Offices in Voorhees, Atlantic City & Princeton, NJ and Philadelphia, PA
- National reach with projects in over 20 states and 4 countries
- Licensed Professional Engineers in 49 States
- Former NJBPU, DPMC, GSA, DEP, Treasury, Stone & Webster and Other Agency/Big Firm Professionals on Staff



LEED
Energy Star
Passive House Institute
aee
CEM
ASHRAE
ISO
AIA

CONCORD ENGINEERING

Corporate Organization



CONCORD ENGINEERING

Commercial/Hospitality Engineering

Provides full-service MEP/FP engineering, energy consulting, design-build, construction management and commissioning services for industrial facilities and high-performance buildings for the commercial and institutional markets.

Markets

- Hospitality
- High-Rise & Multi-Family
- Commercial Office Space
- Government
- K-12 & Higher Education
- Healthcare & Pharmaceutical
- Utilities
- Casinos and Gaming
- Industrial & Manufacturing
- Correctional Facilities
- Data Centers

Services

- Site Analysis & Needs Assessment
- Strategic Plan
- Planning & Scheduling
- Commissioning
- ESIP Utilizing an ESCO or Self-Performing
- Energy Audits, Monitoring & Improvements
- Facility Management Consultation
- Indoor Air Quality
- Code Compliance & Design
- Energy Consulting & Analysis
- Energy Master Planning
- Building/Facility Design
- Sustainable Building Design
- Construction Documentation
- Lighting Improvements
- Preliminary Engineering, Scoping Services
- Final Engineering Design
- Construction Scheduling
- Contract Administration and Construction Management
- Construction Engineering Plans and Specifications
- Contract Administration for Federal, State or County Funded Engineering Projects







CONCORD ENGINEERING

Power Engineering

Provides engineering, design and construction management for the power/T&D/industrial industries.

ISO 9001:2015 Certified

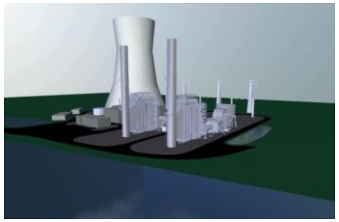
Project Types

- Microgrid
- Simple Cycle & Combined Cycle Plants
- Coal & Natural Gas Boiler Plants
- Combined Heat & Power (CHP) Plants
- Landfill Energy/Digester Gas Energy Plants
- Nuclear Plants
- Transmission & Distribution/Electrical Substation
- Engineering, Procurement & Construction (EPC)

Services

- Owner's Engineering
- Preliminary Engineering
- Conceptual Design
- HRSG Design and Optimization
- Site Selection
- Detailed Engineering
- Due Diligence
- Project Permit Support
- Alternative Technology Assessments
- Condition Assessments
- Value Engineering Studies
- Design Reviews
- Project Capital Cost Estimates
- Life Cycle Cost Analyses
- Economic Analyses
- Project Management Reviews
- Electrical System Studies
- O&M Manual Preparation
- Training of Owner
- PJM Window Studies








CONCORD ENGINEERING

Building & Infrastructure Commissioning

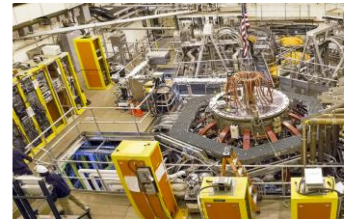
Provides professional engineering experts in each MEP discipline, with design, construction and testing experience required to perform testing and troubleshooting tasks. This includes mechanical, electrical, controls and fire protection engineers.

Services

- Project Review
- Commissioning Plan
- Manufacturer's Startup
- Installation Verification Certification (IVC)
- Operational Performance Testing (OPT)
- Functional Performance Testing (FPT)
- Integrated Systems Testing (IST)
- Acceptance Testing (Electrical)
- TAB Verification (Mechanical)
- Deficiency Tracking & Retesting
- O&M Manual Review
- Training
- Documentation
- LEED Certification

Project Types

- Hospitals
- Outpatient Surgical Centers
- Commercial Office Buildings
- Research and R&D Labs
- Higher Education Buildings
- K-12 Schools
- Datacenters
- Combined Heat & Power Plants
- Military Bases
- Federal Office Buildings
- Manufacturing & Testing Facilities
- Hospitality Facilities
- Detention Centers









CONCORD ENGINEERING

Concord Energy Advisory Services

CES, a division of Concord Engineering Group, Inc., is a full service energy asset management firm providing advisement to small to large energy consuming commercial, industrial companies, national accounts, municipalities and governments.

Experience

- Over 25 Years Industry Experience
- CEM – AEE: Certified Energy Manager
- CEP – AEE: Certified Energy Procurement Professional
- PE – Professional Engineer(s)
- Over 3 billion kWh's under contract
- Over 1 million DTH's under contract
- Over 200,000 individual accounts managed

Services

- Energy Advisory & Consulting for Energy Commodities
- Community Energy Aggregation
- Utility & Rate Tariff Consulting
- Utility Bill Audits
- Peak Demand Reduction & Curtailment Consulting
- Energy Conservation & Sustainability

CONCORD
ENERGY ADVISORY SERVICES

Client Testimonials

"Concord assisted us with procuring 100 percent (100%) renewable energy for municipal facilities. And they are currently helping us develop our renewable energy purchasing program for residents."

Hoboken, New Jersey

According to County Administrator Kevin P. Davis, in October, up to 43% of the electricity used by the county will be drawn from renewable sources – 23% higher than the state standard requirement. Concord Energy Services, along with the county's Purchasing Division, organized the online reverse auction bidding process and coordinated the participation of the Hunterdon municipal governments in the shared service program at no direct cost to the county.

Hunterdon County, New Jersey

CONCORD
ENGINEERING

Concord Management Services

Provides turnkey or a “construction only” solution for mechanical and electrical energy related projects.

ISO 9001:2015 Certified

Design/Build & Construction Management

- Turnkey EPC Projects
- Field Engineering & Construction Management
- CPM Schedule Development
- Procurement Services
- Owners Representative
- Contract Specialists
- Onsite Supervision
- Public Contract Law & Private Contracts
- Third Party-Owned or Owner-Financed Power Projects
- Monetized Tax Credits for Public & Not for Profit Utilizing Renewable Energy

Field Engineering & Construction Administration

- Shop Drawing Review
- Construction Oversight
- Systems Start-Up & Commissioning
- Retro-Commissioning
- Site Inspections
- Code Compliance Review
- Facility Evaluations / Due Diligence
- Independent Design Review

Satisfied Clients

CAESARS ENTERTAINMENT

ATLANTIS PARADISE ISLAND, BAHAMAS

Borgata HOTEL CASINO & SPA

REVEL ENTERTAINMENT

ATLANTIC CITY TROPICANA CASINO AND RESORT

PENN NATIONAL GAMING, INC.

DATWYLER

suez

Johnson & Johnson

SOLVAY

L'ORÉAL

Lilly

MERCK

Pfizer

BARNES & NOBLE

HONDA

perrier

HOLTEC INTERNATIONAL

PRINCETON UNIVERSITY

Rowan University

UF UNIVERSITY of FLORIDA

MONTCLAIR STATE UNIVERSITY

Drexel UNIVERSITY

TEMPLE UNIVERSITY

Cooper

JOHNS HOPKINS MEDICINE THE JOHNS HOPKINS HOSPITAL

RWJ ROBERT WOOD JOHNSON UNIVERSITY HOSPITAL

HackensackUMC

TRINITAS HOSPITAL

PSE&G

SEPTA

DEPARTMENT OF TRANSPORTATION THE STATE OF NEW JERSEY

SPROUTS FARMERS MARKET

Pho Street Vietnamese

gd ITALIAN by Giada

BlueCross BlueShield

CONCORD ENGINEERING

Project Highlights

- New 6MW Combined Heat & Power and Distributed Generation facility
- Developed engineering concept to compliment 3rd party financed business model that emphasized resiliency and hedging the client against PJM ICAP and transmission charges as well as local distribution charges
- Provides on-site electrical generation to allow the university to increase resiliency, reduce future electrical demand and in turn reduce the transmission and demand charges imposed from the electric utility and reduce capacity charge from PJM.
- Ability to purchase electricity and natural gas at a lower cost

Construction Cost

$12 Million

Completion Date

2018

VILLANOVA UNIVERSITY

Radnor, PA

Engineering, Construction Management at Risk & Commissioning

DESIGN BUILDER FOR 6 MW CHP & DISTRIBUTED GENERATION PROJECT RESILIENCY + DEMAND MANAGEMENT

CONCORD ENGINEERING

Project Highlights

- Master Services for Engineering and Support of Operations
- Resident Capital Projects and Construction Manager
- Oversite of Major Warranty Replacement of Binary Heat Exchangers
- Oversite of Upgrade of Demineralized Water System

Ownership

Liberty Capital
Abengoa
Atlantica Yield

Completion Date

Ongoing

SOLANA ARIZONA SOLAR ONE

Gila Bend, AZ

Onsite Services





WORLD'S LARGEST PARABOLIC TROUGH SOLAR POWER PLANT

- 280 Mwe
- 6 Hours Molten Salt Thermal Storage

CONCORD ENGINEERING

Project Highlights

- Completed Town Center Distributed Energy Resource (TCDER) Microgrid Feasibility Study
- Examined the Potential of Connecting a Combination of Privately and Publicly Owned Critical Facilities to a TCDER Microgrid that will have a Source of Power in the Event the Electric Grid is Down.
- Microgrid will serve a Total of 29 City, Public & Private Buildings

Completion Date

2018

City of Hoboken

Hoboken, NJ

Distributed Energy Resource Microgrid Feasibility Study

Project Profile

Hackensack University Medical Center

Hackensack, NJ

New Central Utility Plant

Project Highlights

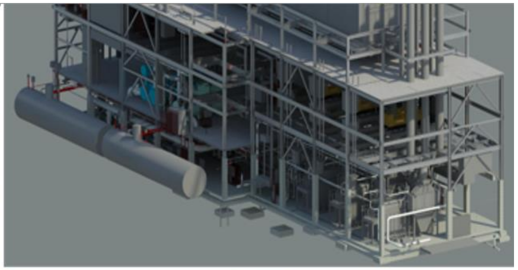
- New free-standing CUP that will support all electrical, chilled water, steam and emergency power needs for the existing HUMC complex and new 500,000 SF tower
- (2) “enabling phases” to support the relocation of existing services
- Relocation and expansion of existing 26 kV substation
- Hospital’s main 26 kV distribution system designed to accommodate a pair of 26 kV underground redundant feeders
- All designed per PSE&G standards and guidelines. This included close coordination and meeting with PSE&G for interconnections, metering requirements, SCADA communication, etc.

Construction Cost

$100 Million

Completion Date

2019



SUCCESSFUL SWAP TO NEW 26 KV SUBSTATION

The new dual feed 26 kV utility interconnect substation and 13.2 kV distribution switchgear, designed by Concord, is fully operational & is now repowering the existing hospital campus to make way for the future 530,000 sf hospital expansion.

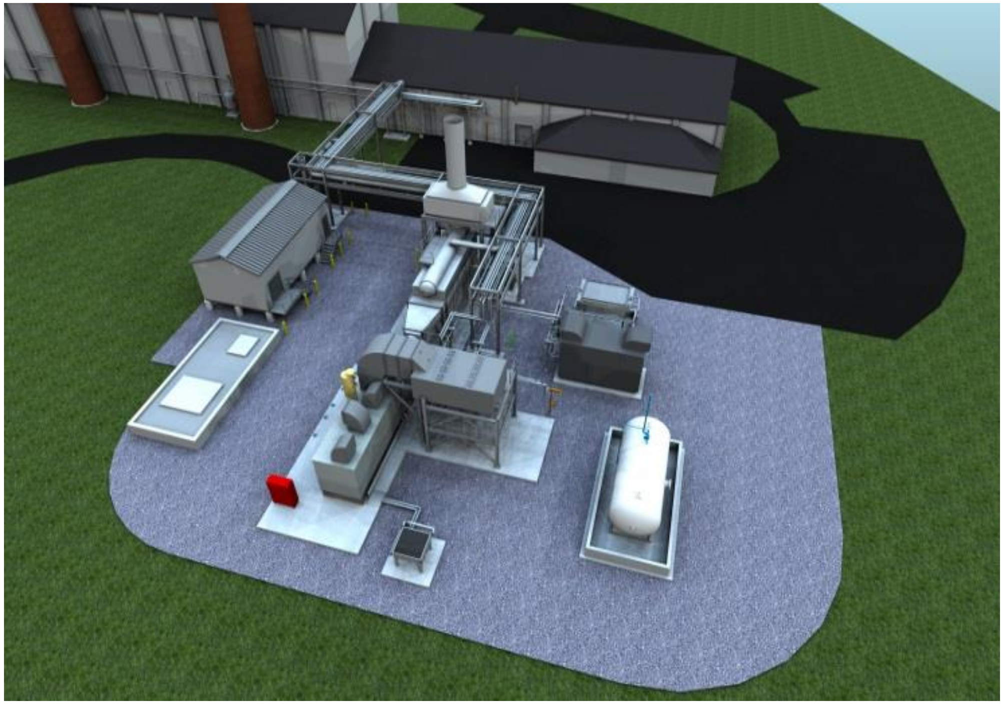
Aberdeen Proving Ground Edgewood Area

Gunpowder, MD

CHP Plant Engineering Design

Project Highlights

- Provided Engineer of Record, Construction Administration and Startup Services for New Combined Heat and Power Plant
- Project funded and constructed through an Energy Savings Performance Contract executed by Johnson Controls, Inc.
- CHP Plant includes 7.9 MW dual fuel combustion turbine generator, duct fired HRSG with SCR and a packaged fuel gas compressor
- Electricity generated from the plant offsets the facility's utility power consumption and the HRSG supplies 350 psig steam to the existing thermal distribution system



This project annually saves $4.5 Million in energy costs and reduces the site's carbon footprint by over 22,500 tons.

Construction Cost

$30 Million

Completion Date

2016

Project Highlights

- Engineer of Record for developing design concepts, scopes of work and design drawings to allow design+build contractor pricing for an extensive distributed generation project with multiple natural internal combustion gas engines incorporated into a number of new micro-grids configured within the existing base electrical distribution system
- Project includes (3) natural gas fueled reciprocating engine generator packages configured for chilled water heat recovery and four simple cycle engine packages to be dispatched based on day ahead pricing
- Resiliency options include the use of automated load shedding switchgear and Battery Energy Storage/UPS systems for seamless micro-grid operation.

Construction Cost

$15 Million

Completion Date

2019

Eglin AFB & Distributed Generation and Resiliency

Valparaiso, FL

Design Engineering to Support Contractor Bidding

Concord delivered a project scope of work describing a collaborative design+build approach across all stakeholders including the project owner, Eglin AFB personnel, the local electrical distribution company and the D+B contractor.

Norfolk Naval Station

Norfolk, VA

CHP IGA Engineering Design

Project Highlights

- Developed complex site power quality and load flow model to inform electrical design
- 15 MW of natural gas CHP + 10 MW demand response
- Island capable micro-grid
- Worked with client to develop economic dispatch model to validate Preliminary Assessment

Completion Date

2016

Results

- Improved resiliency
- Mix of prime movers produced energy savings through economic demand management
- Project penciled for our Client

CONCORD ENGINEERING

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