Facility Performance Consulting

Building Commissioning, LEED Coordination and Energy Audit Services

~Building for the Future~

FPC
Facility Performance Consulting

OUR PROJECTS

Each of our projects are commissioned by a Professional Engineer and reviewed by our CxA Certified Senior Commissioning Manager.

We perform timely, thorough reviews of each system and provide detailed reports on the condition of each item. Based on our findings, we offer tailored recommendations so you can make educated decisions that are best for you and your building.

We take pride in all of our projects, but especially those that are LEED Certified as we understand the importance of saving building owners on utility costs.

ECOTECH INSTITUTE | EDUCATION, LEED GOLD, SOLAR, WIND | Aurora, CO | *$7.4 Million*

Location: Aurora, CO

Size: 60,000 SF

Construction Cost: $7.4 Million

Services: LEED Fundamental Commissioning

- ❑ 1st and only college dedicated to preparing graduates for careers in renewable energy, sustainable design, energy efficiency and wind turbine technology
- ❑ Conversion of a 100,000 SF aged retail building into a state of the art 60,000 SF educational facility and a 40,000 SF warehouse/storage facility
- ❑ Our partner firm, Crenshaw Consulting Engineers, designed the plumbing, mechanical, fire alarm and electrical systems including an 8 kWdc wind turbine system and a 38 kWdc photovoltaic (solar electric) system comprised of building mounted modules and solar trees
- ❑ The HVAC system utilizes packaged rooftop units with gas heat and VVT damper controls to allow thermostatic controls in classrooms
- ❑ Facility Performance Consulting performed the commissioning for the plumbing, mechanical, fire alarm, electrical systems, solar systems and wind turbine system

HYATT SUMMERFIELD SUITES | HOTEL, LEED | Raleigh, NC | *$13 Million*

Location: Raleigh, NC

Size: 120,000 SF

Construction Cost: $13 Million

Services: LEED Enhanced Commissioning

- ❑ 120,000 SF hotel designed to attain LEED certification
- ❑ Our partner firm, Crenshaw Consulting Engineers (CCE), designed the plumbing, mechanical, electrical and fire alarm systems and provided LEED documentation of engineering credits and energy modeling
- ❑ Facility Performance Consulting (FPC) performed the commissioning and was on board with the project since the pre-design phase offering guidance and suggestions throughout the design, bid, acceptance and post-acceptance phases
- ❑ Verified that the owner has adequate system documentation and training

KILPATRICK STOCKTON | OFFICE, DATA CENTER, LEED GOLD | Raleigh, NC

Location: Raleigh, NC

Size: 28,000 SF

Construction Cost:

Services: LEED Fundamental Commissioning

- ❑ Office space designed to LEED Gold standards in the LEED Interior Design and Construction rating system
- ❑ Our partner firm, Crenshaw Consulting Engineers (CCE) designed the plumbing, mechanical, electrical and fire alarm systems as well as provided LEED documentation of engineering credits
- ❑ Due to the unique teaming relationship between CCE and Facility Performance Consulting (FPC), the commissioning of this project was timely, inclusive and effective at ensuring that the owner received what was promised
- ❑ FPC performed commissioning including verification of the HVAC system, lighting and domestic hot water

603 CARTHAGE STREET SHELL & LEE MOORE CAPITAL COMPANY FIT-UP| OFFICE, SOLAR | Sanford, NC

Location: Sanford, NC

Size: 12,000 SF

Construction Cost:

Services: LEED Fundamental and Enhanced Commissioning, LEED Coordinator

- ❑ LEED Gold certified shell and LEED Platinum fit-up
- ❑ On-site solar power is used to offset a portion of the electrical consumption of the facility
- ❑ Our partner firm, Crenshaw Consulting Engineers (CCE) designed the plumbing, mechanical, electrical, fire alarm and renewable energy systems as well as acted as LEED coordinator for the core and shell project
- ❑ Facility Performance Consulting performed commissioning services and held the position of LEED Coordinator for the first floor fit-up, Lee Moore Capital Company
- ❑ Because of our unique teaming relationship with CCE, Facility Performance Consulting (FPC) seamlessly provided timely commissioning services for this 12,000 SF shell office building and 4,500 SF office fit-up including verification of the building management system, HVAC system, lighting, solar system, domestic hot water

BURTS BEES WAREHOUSE & DISTRIBUTION FACILITY | WAREHOUSE | Morrisville, NC

Location: Morrisville, NC

Size: 496,000 SF

Construction Cost:

Services: ASHRAE Level I Energy Audit

- This project consists of an existing warehouse and a distribution facility pursuing LEED Certification for Existing Buildings
- Facility Performance Consulting (FPC) performed the energy audit on the 360,000 SF warehouse and the 136,000 SF distribution facilities required to begin the process for LEED Certification
- Energy audits consisted of low cost, energy reduction recommendations
- In keeping with the owner's goal of seeking LEED Certification for the warehouse and distribution facilities, FPC made many valuable energy reduction recommendations

ECO CLEAN CAR WASH | RETAIL | Cary, NC

Location: Cary, NC

Size: 1,300 SF

Construction Cost:

Services: LEED Enhanced Commissioning, Energy Modeling

- ❑ This project is projected to be the 2nd LEED certified car wash in the country and is attempting to become the first LEED Gold certified
- ❑ This facility utilizes rain harvesting, variable frequency motors and solar photo-voltaic power
- ❑ Our partner firm, Crenshaw Consulting Engineers (CCE), designed the plumbing, mechanical and electrical systems
- ❑ Because of our unique partnering with CCE, Facility Performance Consulting (FPC) provided the energy modeling and commissioning services including system verification for the HVAC system, lighting, solar system, domestic hot water, and car wash equipment power consumption

ECOTECH INSTITUTE | EDUCATION, LEED SILVER, SOLAR, WIND | Austin, TX | *$2.6 Million*

Location: Austin, TX

Size: 43,500 SF

Construction Cost: $2.6 Million

Services: LEED Fundamental Commissioning

- ❑ 1st and only college dedicated to preparing graduates for careers in renewable energy, sustainable design, energy efficiency and wind turbine technology
- ❑ Transformed a 43,500 SF ice skating rink into an educational campus
- ❑ Our partner firm, Crenshaw Consulting Engineers, designed the plumbing, mechanical, fire alarm and electrical systems including 2 wind turbine systems and a 40.4 kWdc photovoltaic (solar electric) system comprised of building mounted modules and solar trees
- ❑ Facility Performance Consulting performed the commissioning for the plumbing, mechanical, fire alarm, electrical systems, solar systems and wind turbine systems

CHATHAM PARK MEDICAL OFFICE BUILDING | MEDICAL, LEED | Pittsboro, NC | *$6.74 Million*

Location: Pittsboro, NC

Size: 25,000 SF

Construction Cost: $6.74 Million

Services: LEED Fundamental Commissioning

- ❑ Medical office building designed to meet LEED specifications
- ❑ Our partner firm, Crenshaw Consulting Engineers, designed the plumbing, mechanical, fire alarm and electrical systems as well as provided preliminary bid documents and pricing sets; they also approved and reviewed shop drawings
- ❑ Facility Performance Consulting performed the commissioning for the plumbing, mechanical, fire alarm, electrical systems which achieved 20% improvement over ASHRAE 90.1.2007

KIAWAH ISLAND BEACH CLUB & CONDOS | HOTEL, RESORT, SPA | Kiawah Island, SC | *$284 Million*

Location: Kiawah Island, SC

Size: 325,000 SF

Construction Cost: $284 Million

Services: Fundamental Commissioning

HART HOWERTON
NEW YORK · SAN FRANCISCO

- ❑ 7 acre high-end beachfront resort including 77 condos across 4 cottage keys and 6 condo buildings all raised above flood elevation with private river access
- ❑ The Cape Club is an oceanfront amenity space with an infinity pool, subdeck, bocce, volleyball, pavilion, changing rooms, and a fitness center, all raised above flood elevation
- ❑ Our partner firm, Crenshaw Consulting Engineers, designed the plumbing, mechanical, electrical, lightning protection, fire alarm and fire protection systems
- ❑ Facility Performance Consulting performed the commissioning for the plumbing, mechanical, electrical, lightning protection, fire alarm and fire protection systems

DURHAM FIRE STATION & EMS 17 | MUNICIPALITIES, LEED GOLD | Durham, NC | *$4.7 Million*

Location: Durham, NC

Size: 10,800 SF

Construction Cost: $4.7 Million

Services: LEED Fundamental Commissioning

- ❑ New Construction of a LEED Gold Fire Station including an apparatus bay, administrative space, fitness center, sleeping quarters, and day and dining room
- ❑ Our partner firm, Crenshaw Consulting Engineers, designed the plumbing, mechanical, electrical and fire alarm systems
- ❑ Facility Performance Consulting performed the commissioning for the plumbing, mechanical, electrical and fire alarm systems

CAROL JOHNSON POOLE CLUBHOUSE | LEED SILVER, RECREATION | Raleigh, NC

Location: Raleigh, NC

Size: 25,000 SF

Construction Cost:

Services: LEED Fundamental Commissioning

- ❑ 2 story clubhouse located at North Carolina State University's Centennial Campus with new facilities including an indoor golf range, golf pro shop, cart storage, food prep, dining and locker rooms
- ❑ Our partner firm, Crenshaw Consulting Engineers, designed the plumbing, mechanical and electrical systems
- ❑ Facility Performance Consulting performed the commissioning for the plumbing, mechanical and electrical systems including verification of the HVAC system and controls, test and balance verification, lighting controls, daylight controls, domestic hot water systems

RALEIGH IRON WORKS | MULTI-USE, OFFICE, RETAIL, RESTAURANT | Raleigh, NC | *$150 Million*

Location: Raleigh, NC

Size: 133,000 SF

Construction Cost: $150 Million

Services: Fundamental Commissioning

- ❑ 133,000 SF adaptive reuse projects with various retail, restaurant and office suites for tenants
- ❑ Our partner firm, Crenshaw Consulting Engineers, designed the plumbing, mechanical, electrical and fire alarm systems
- ❑ Facility Performance Consulting performed the pre-functional and functional commissioning for the plumbing, mechanical, electrical and fire alarm systems including pumps, coolers, boilers, heating systems, energy and metering systems, lighting controls, and test and balance verification.

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SERVICES

Building Commissioning

LEED Coordination

Energy Audits

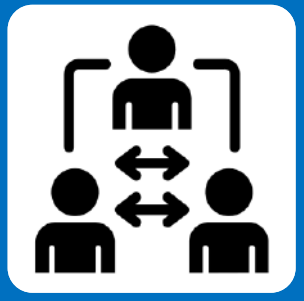
Renewable Energy Feasibility Studies

Building Information Modeling (BIM)

Energy Star Certification Coordination

Return on Investment (ROI) Evaluations

Exterior Lighting Evaluations



Third Party Liaison

Document Existing Building Conditions

Building Commissioning

Building commissioning is quality assurance for a building owner that they are getting exactly what they want and what they are paying for. By integrating a commissioning agent with a building design team, the owner has someone involved every step of the way that is only concerned with the owner's interests. The commissioning agent can be involved from the pre-design phase all the way through the occupancy phase and in many cases continue to be involved throughout the operation of the facility to verify systems continue to perform as they should. Commissioning is a pre-requisite for any LEED project but can also be very valuable for any new building not attempting LEED certification. Existing buildings will also benefit from retro commissioning by experiencing a reduction in energy costs and improved occupant comfort.

LEED Coordination

Leadership in Energy and Environmental Design (LEED) is an internationally recognized green building certification system, providing third-party verification that a building was designed and built using strategies intended to improve performance in metrics such as energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. In order to become LEED certified, a building must go through an application process with many pre-requisites and credits that must be documented. This is a collaborative process between the entire design team and building owner. With so many small pieces to a large project, it is often necessary to have one project team member that only focuses on the LEED documentation process.

Energy Audits

An energy audit is a systematic approach to problem solving and decision making. The primary goals of an energy audit are to qualify and quantify how the building energy systems are performing now, how that performance can be improved, and what will be the outcomes of those improvements for the Owner in financial and non-financial terms.

The following types of energy audits can be performed for any facility:

- ASHRAE Level 1 – Walk-Through Analysis/Preliminary Audit
- ASHRAE Level 2 – Energy Survey and Analysis
- ASHRAE Level 3 – Detailed Analysis of Capital Intensive Modification

Renewable Energy Feasibility Studies

With tax incentives and the ever-growing cost of energy, many people are turning to renewable energy. Through preliminary design, energy modeling and some financial calculations, it is possible to determine the feasibility and economic benefit of installing some of today's most common renewable energy systems such as: solar photo-voltaic, solar thermal and wind turbines.

Building Information Modeling (BIM)

Building Information Modeling (BIM) is the process of developing a building model which is used in presenting and visualizing building components, construction sequences, resource allocation and other disciplines of the construction process in a virtual environment. The biggest advantage of using BIM is fewer errors and fewer field modifications – saving costs and resources.

Energy Star Certification Coordination

The U.S. EPA's Energy Star program has developed an energy performance rating system for several commercial, institutional and manufacturing building types. These ratings, on a scale of 1 to 100, provide a means for bench-marking the energy efficiency of specific buildings and industrial plants against the energy performance of similar facilities.

Return on Investment (ROI) Evaluations

Energy reducing upgrades to a facility can often have a pay back period of less than one year. With these upgrades making so much financial sense, they should not be ignored. In order to determine a pay back period or return on investment, an energy model can be built for a facility to model the effects of the energy reducing upgrades.

Exterior Lighting Evaluation

With exterior lighting, safety and light pollution are often considered during design, however; these issues are rarely investigated after installation. An over lit site could cause unwanted light pollution to neighboring areas and an under lit site could be dangerous for pedestrians. New or existing sites can be evaluated for conformance to local requirements and IES standards.

Third Party Liaison

Many times, when engineers are designing facilities in an area they are unfamiliar with, it is common to have a third-party liaison to aid in the facilitation of the permit process. The liaison can review engineered drawings for compliance with local rules, regulations and ordinances.

Document Existing Building Conditions

If a building has been in existence for a lengthy amount of time, it has often gone through many upgrades and changes that are not always documented. In order to improve a facility to make it function better, it is necessary to know what the building consists of. For these reasons, documenting existing building conditions is important so building owners can understand the condition of their building in its current state. Then, with this information, it is possible to make educated decisions on cost effective upgrades for the facility.

Why Commissioning?

"We want to ensure that each of our clients receives the most value for their investment in a building.“ - FPC

Commissioning

Building commissioning provides documented confirmation that building systems function according to criteria set forth in the project documents to satisfy the owner’s operational needs. Commissioning existing systems may require developing new functional criteria to address the owner’s current requirements for system performance.

Commissioning for Existing Buildings (Retro-Commissioning)

Commissioning for Existing Buildings (sometimes referred to as retro-commissioning) is a systematic process for investigating, analyzing, and optimizing the performance of building systems by improving their operation and maintenance to ensure their continued performance over time. This process helps make the building systems perform interactively to meet the owner’s current facility requirements