

**DANNY CLEMENS, DIRECTOR**  
GEORGE BROCK, MAINTENANCE SUPERVISOR  
THOMAS STOKES, CUSTODIAL SUPERVISOR  
ANDREA ROCK, ENERGY MANAGER

**DEPARTMENT OF FACILITIES**

**MEMO**

**TO:** Dr. Jesse Bacon, Superintendent  
**FROM:** Danny Clemens, Director of Facilities  
**Date:** December 1, 2023  
**RE:** Commissioning Services for Bernheim Middle School **DC**

Requested for approval is for CMTA Commissioning, Inc. (CMTA Cx) to provide commissioning services for the Bernheim Middle School Renovation project. CMTA Cx provided the lowest fee proposal of. The post-bid revised BG-1 had an anticipation cost of \$80,000 for code required commissioning of the HVAC and Lighting systems. Request for Proposals were issued to three (3) companies and two (2) proposals were provided as listed below:

Three (3) proposals were requested from the following companies:

- 1.) CMTA Commissioning, Inc.: \$49,250 Fee Proposal
- 2.) Facility Commissioning Group \$59,790 Fee Proposal
- 3.) Paladin, KY: Nonresponsive

**I recommend approval of this request.**

**Attachments:**

- Commissioning Recommendation to BCPS - 23-051 - Bernheim Middle School
- CMTA - Bullitt County Schools Bernheim Middle Schools Cx Services
- FCG - BCS BMS RFP Response

**OUR MISSION IS TO INSPIRE AND EQUIP OUR STUDENTS TO SUCCEED IN LIFE**

**BULLITT COUNTY PUBLIC SCHOOLS IS AN EQUAL EDUCATION AND EMPLOYMENT INSTITUTION**

November 30, 2023



## Commissioning Services Recommendation

TO: Bullitt County Public Schools  
Danny Clemens, Director of Facilities  
1040 Highway 44 East  
Shepherdsville, KY 40165

REFERENCE: Commissioning Services for:  
Bernheim Middle School Renovation  
700 Audubon Drive, Shepherdsville, KY 40165  
BG# 23-051 | ska# 2022-36

Dear Mr. Clemens,

We are recommending CMTA Commissioning, Inc. (CMTA Cx) to provide commissioning services for the Bernheim Middle School Renovation project. CMTA Cx provided the lowest fee proposal of. The post-bid revised BG-1 had an anticipation cost of \$80,000 for code required commissioning of the HVAC and Lighting systems. Request for Proposals were issued to three (3) companies and two (2) proposals were provided as listed below:

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- |                                  |                       |
|----------------------------------|-----------------------|
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| 2.) Facility Commissioning Group | \$59,790 Fee Proposal |
| 3.) Paladin, KY:                 | Nonresponsive         |

If you have any questions or comments, please do not hesitate to contact me.

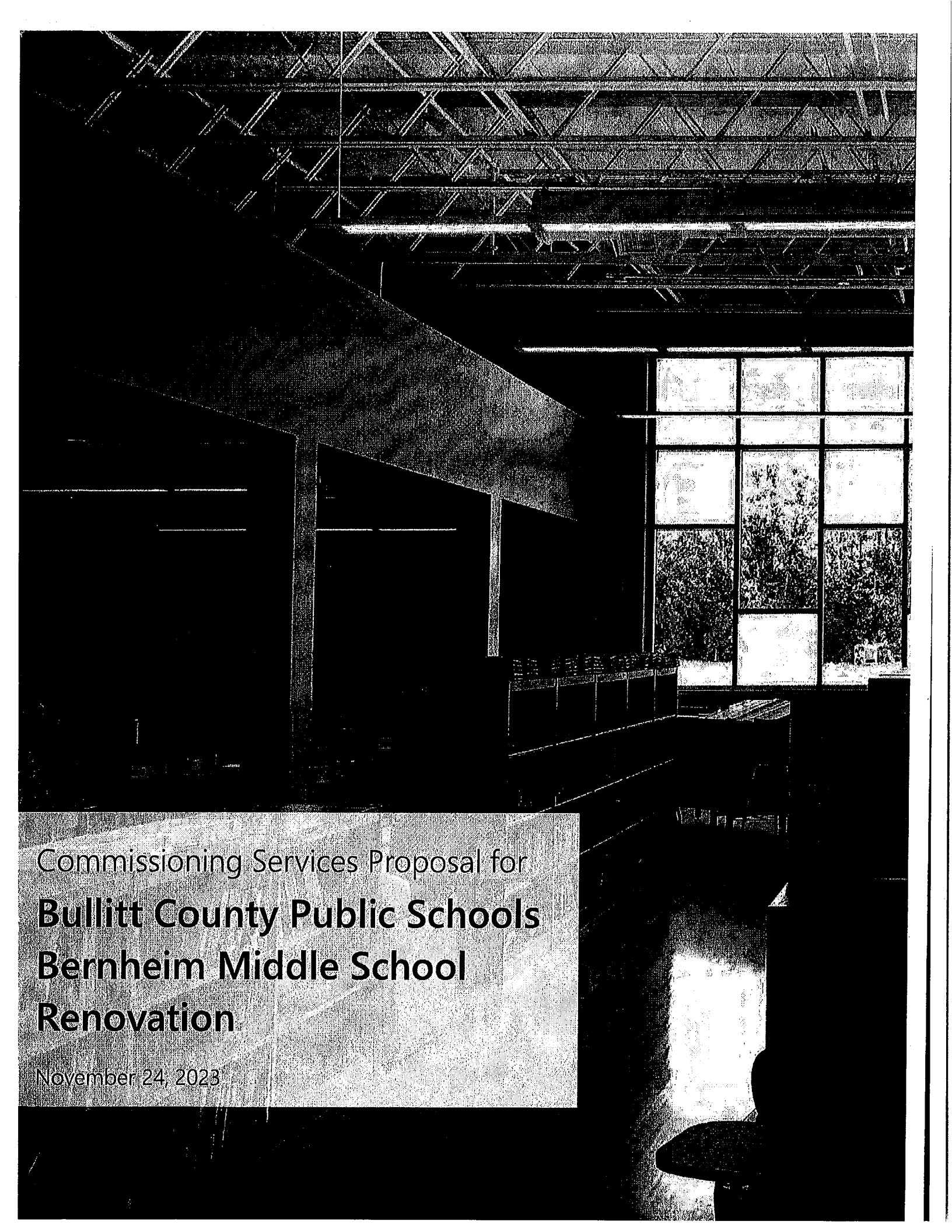
Sincerely,  
Studio Kremer Architects

Cate Noble Ward | AIA  
Partner | Architect

enclosures – (1) CMTA Commissioning, Inc. Proposal - Recommended  
(2) Facility Commissioning Group Proposal

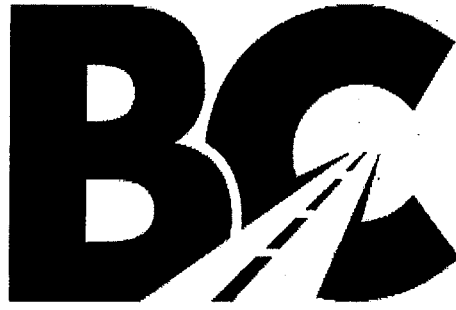
studio kremer architects

1231 S Shelby St, Louisville, KY 40203  
TEL 502.499.1100 FAX 502.499.1101

A black and white photograph of a school hallway. The ceiling is a grid-style drop ceiling with recessed lighting. A large window on the right side of the hallway provides natural light. The hallway appears to be under renovation or is a new construction, with some construction materials visible on the floor.

Commissioning Services Proposal for  
**Bullitt County Public Schools**  
**Bernheim Middle School**  
**Renovation**

November 24, 2023



MOVING FORWARD

# BULLITT COUNTY PUBLIC SCHOOLS

**Bullitt County Public Schools**

## **Bernheim Middle School Renovation**

*Shepherdsville, Kentucky*

**RFP-v1**

**MEP Commissioning Services**

**BG# 23-051 | ska# 2022-36**



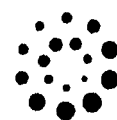
10411 Meeting Street  
Prospect, KY 40059

Building Science Leadership | [cmta.com](http://cmta.com)



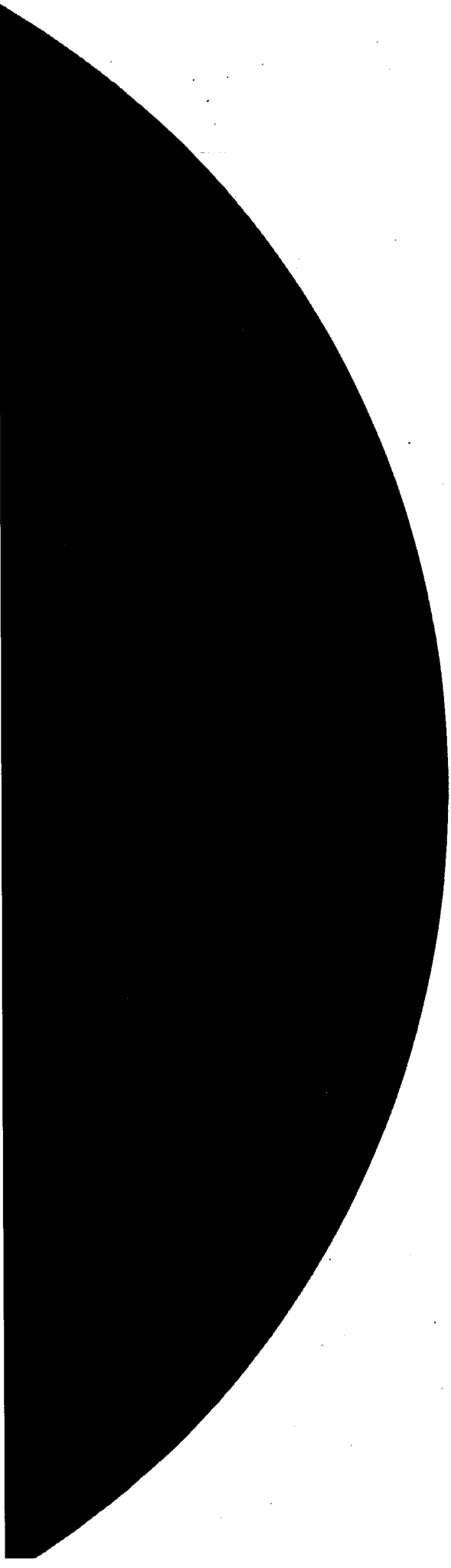
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2. Company Profile & Team Members
3. Experience, Workload, & Certifications
4. Methodology
5. Proposed Fee Letter
6. Original RFP



**CMTA**

CMTA.COM



# 1 | Letter of Interest



November 24, 2023

Danny Clemens  
Director of Facilities  
Bullitt County Schools  
danny.clemens@bullitt.kyschools.us

**Re: Bernheim Middle School Renovation**

Dear Mr. Danny Clemens,

We are excited for the opportunity to submit a proposal for professional MEP commissioning (Cx) consultant - HVAC, electrical, plumbing and life safety services for the Bernheim Middle School Renovation Project. For this engagement, CMTA would provide Cx project management and support from the Louisville headquarters office in Prospect, Kentucky.

CMTA is a nationally recognized expert in high-performance K-12 education design and commissioning, having delivered some of the most energy-efficient projects in the nation. Our industry expertise and ability to provide the top engineered systems in the building business even landed CMTA on CSE's Commissioning Giants list for 2022. As a result, our ideas for your team will be creative, proven, and grounded on data from our years of performance-based success.

We feel CMTA is uniquely qualified to support Bullitt County Schools (BCPS) by commissioning its projects for the following reasons:

- *Proven Past Performance.* Our team brings over 20 years of commissioning experience and a history of more than 100 K-12 education projects performing at an EUI of less than 25 Kbtu/SF.
- *Successful Partnership.* CMTA has been a dedicated long-term partner to various greater Louisville area school districts for over 20 years. We understand Districts' concerns and have a long history of working collaboratively deliver some of the best-performing buildings in the nation.
- *Holistic Approach.* Our team of experts go beyond confirming operation to ensure that Bullitt County Schools deliver the expected high performance and energy savings.

Our primary goal is to deliver high-performance buildings to BCPS that reduce energy consumption and create cost savings so that the district can use more resources for students and education rather than operating buildings. We would be honored to work with your team and hope you will not hesitate to reach out if you have any questions or need additional information about our approach.

Sincerely,

A handwritten signature in black ink, appearing to read "Brent Leinenbach".

Brent Leinenbach, CxA  
Commissioning Manager



## 2 | Company Profile & Team Members





## Company Profile

CMTA is a multi-specialty firm focusing on building systems engineering that ensures cost-effective, energy-efficient, high-performance buildings. We are true partners vested in our buildings' long-term success, measured by exceeding the expectations of building owners and managers and maintaining the health and comfort of the occupants. In addition to engineering great building systems, at CMTA, we invent products, set national goals, and work to transform the market to improve results for everyone.

CMTA has commissioned projects for various clients in many markets, including Education, Healthcare, Scientific, Pharmaceutical, Municipal and Government, Commercial, Arenas & Stadiums, Convention Centers, etc. CMTA has a large group of Commissioning Agents with 21 Certified CxAs through the AABC Commissioning Group (ACG), 1 BECxP, 1 CxA+BE, 2 CxT, 1 NEBB BSC, 1 NEBB CBCP, and 1 QCP.

CMTA is uniquely qualified to deliver buildings optimized for performance, drastically reducing utility costs and maintenance issues. As a result, our commissioned projects perform better repeatedly above and beyond those commissioned by others.

### Our commissioning expertise includes the following services:

- Commissioning (Cx)
- Commissioning for LEED Certification
- Retro-Commissioning (RCx)
- Monitoring-Based Commissioning (MBCx)
- Design / Application Review
- Building Envelope Commissioning (BECx)
- Building Envelope Air Tightness (Pressure) Testing & Thermography Services
- Energy Dashboards & Advanced Sub-Load Metering

### By the Numbers

- 750+ Employees
- 35 Offices Nationwide
- 200 PEs
- 10 RCDDs
- 7 Certified GeoExchange Designers
- 28 Certified Energy Managers
- 21 Commissioning Agents
- 121 LEED APs
- 19 WELL APs
- 2 AVIXA Certified Technology Specialists
- Licensed in 50 States, D.C. and Ontario, Canada

### K-12 School Work Percentage

*Approximately 60% of CMTA's work relative to total firm business is in the K-12 sector.*



## Team Organization

The team for your project will be led, managed and supported out of our headquarters in Prospect, KY. We have allocated a deep bench of resources to perform this project ranging from senior engineering leaders, commissioning specialists, as well as technical design specialists. Our senior level staff possess diverse experience/knowledge backgrounds creating a more rounded team and better overall client experience.



**Brent Leinenbach**  
*CxA*  
Principal-in-Charge /  
Commissioning Team Leader



**Zachary Schneider**  
*PE, LEED AP, LC, CxA*  
Client Relations Manager



**Sam Gordon**  
*CxA, Level I Thermographer*  
Commissioning Project Manager



**Chris Miller**  
Commissioning Controls  
Specialist



**Daniel Chesser**  
*TBT, CxA*  
Commissioning TAB Specialist



**Todd Givens**  
*CxA*  
Mechanical Commissioning  
Specialist



## **Brent Leinenbach** CxA

### **Principal-in-Charge / Commissioning Team Leader**

As principal-in-charge and commissioning team leader, Brent ensures that CMTA's commissioning approach is implemented on all projects. This focuses on minimizing energy consumption, reducing maintenance time, and increasing occupant comfort. Additionally, Brent ensures that the commissioning team has the internal support needed to be successful and will provide QAQC for all documents and deliverables. He is committed to the project for its entire duration.

#### **Education**

B.S., Electrical Engineering, University of Louisville, 2017

#### **Registration**

Certified Commissioning Agent, AABC/ACG

**5 Years with firm**

**19 Years experience**

#### **Select Project Examples**

- Bullitt County Schools, New Elementary School Cx and BPT; Mt. Washington, KY
- Oldham County Schools, North Oldham Middle School Cx; Crestwood, KY
- Warren County Public Schools, Jennings Creek Elementary School Cx; Bowling Green, KY
- Warren County Public Schools, Geothermal and Energy Optimization at multiple schools; Bowling Green, KY
- Owen County Schools, High School HVAC Renovation Cx; Owenton, KY



## **Sam Gordon** CxA, Level I Thermographer

### **Commissioning Project Manager**

As the commissioning project manager, Sam is responsible for monitoring the MEP construction installation progress and ensuring systems meet the construction document specification requirements and design intent. In addition, he works closely with mechanical test and balance contractors. His responsibilities include coordination and implementation of the commission process by working as a commissioning agent and ensuring resources and systems are working in accordance to construction documents so that projects are finished in a timely manner, within budget and meet critical quality criteria.

#### **Education**

Associate of Applied Science, Computer Science, Sullivan University, 1992

#### **Registration**

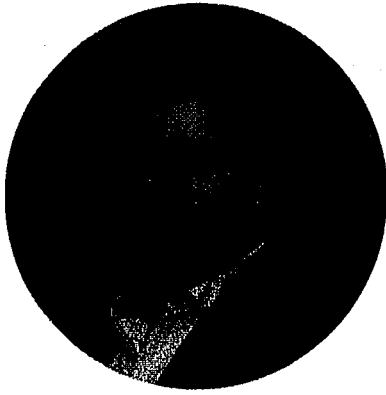
AIRT Level 1 Infrared Thermographer #1-1958

**3 Years with firm**

**30 Years experience**

#### **Select Project Examples**

- Bullitt County Schools, New Elementary School Cx and BPT; Mt. Washington, KY
- Shelby County Public Schools, Shelby County High School Cx; Shelbyville, KY
- Warren County Public Schools, Geothermal and Energy Optimization at multiple schools; Bowling Green, KY
- Fayette County Schools, Tates Creek High School BECx; Lexington, KY
- Arlington Public Schools, Gunston Middle School Renovation Cx; Arlington, VA



## Daniel Chesser TBT, CxA

### Commissioning TAB Specialist

As the TAB Commissioning Specialist, Daniel will be responsible for monitoring the MEP construction installation progress and ensuring systems meet the construction document specification requirements and design intent. In addition, Daniel will work closely with mechanical test and balance contractors to ensure proper methodology and practices are followed.

#### Registration

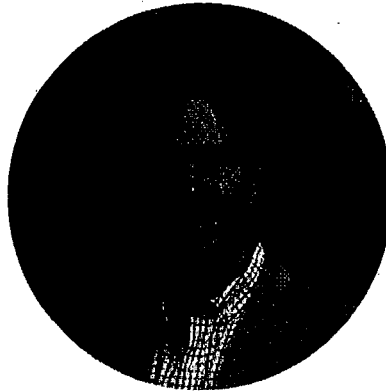
Certified Commissioning Agent  
OSHA Construction Safety and health  
TBT- Testing & Balance Technician

**5 Years with firm**

**10 Years experience**

#### Select Project Examples

- Bullitt County Schools, New Elementary School Cx and BPT; Mt. Washington, KY
- Owensboro Independent School District, Cravens Elementary Cx; Owensboro, KY
- Owen County Schools, High School HVAC Renovation Cx; Owenton, KY
- Oldham County Schools, North Oldham Middle School Cx; Crestwood, KY
- Fayette County Schools, Tates Creek High School BECx; Lexington, KY



## Zachary Schneider PE, LEED AP, LC, CxA

### Client Relations Manager

As the client relations manager, Zac acts as the owner's advocate and works with the administration team to ensure the project systems and goals are met. To achieve project goals, Zac collaborates with the team to guarantee a seamless project from start to finish. This includes attending periodic OAC meetings, commissioning meetings, site visits in preparation for functional performance testing, assisting in functional testing, and deficiency resolution.

#### Education

B.S., Electrical Engineering, University of  
Louisville Speed Scientific School, 2005

#### Registration

Licensed Professional Engineer in KY (#28357),  
NC, TX and VI

**21 Years with firm**

**21 Years experience**

#### Select Project Examples

- Sheldon Independent School District, Garrett Road Elementary School; Houston, TX
- Alvin Independent School District, Pomona Elementary School; Manvel, TX
- Henry County Public Schools, High School Addition and Renovation; New Castle, KY
- Oldham County Schools, North Oldham Elementary; Goshen, KY
- Russell County Schools, Russell County Middle School Addition and Renovation; Russell Springs, KY



## Todd Givens CxA

### Mechanical Commissioning Specialist

Todd has held various positions as an energy manager and director of facilities for a K-12 school district. He holds experience in energy efficiency, energy audits, building automation, photovoltaics, and HVAC systems. In addition, he has experience as a consulting mechanical engineer in HVAC design. Todd has designed air distribution, hydronic, geothermal, and heat recovery systems. In addition, he has done computer-building modeling for energy analysis. Todd has engineered projects for educational, health care, and hospitality facilities and is well-versed in industrial regulations, safety procedure requirements, and certifications.

#### Education

M.S., Mechanical Engineering, University of Louisville

#### Registration

Certified Commissioning Agent

**2 Years with firm**

**13 Years experience**

#### Select Project Examples

- Owen County Schools, High School HVAC Renovation Cx; Owenton, KY
- Oldham County Schools, North Oldham Middle School Cx; Crestwood, KY
- Shelby County Public Schools, High School Cx; Shelbyville, KY
- Fayette County Public Schools, Tates Creek High School Cx; Lexington, KY
- Katy Independent School District, Katy Elementary School Addition/Renovation Cx; Katy, TX



## Chris Miller

### Commissioning Controls Specialist

As a Commissioning Controls Specialist, Chris ensures the Building Management System is configured and programmed to meet critical design criteria so that systems operate effectively. He has extensive experience commissioning complex mechanical systems utilizing various software and programming languages. Additionally, he is committed and passionate to ensure building operators receive a building that is set up to maximize long-term operational efficiencies. Chris works closely with mechanical contractors, system integrators, and equipment manufacturers to deliver successful projects that meet the customers' budget, schedule, and performance requirements.

#### Education

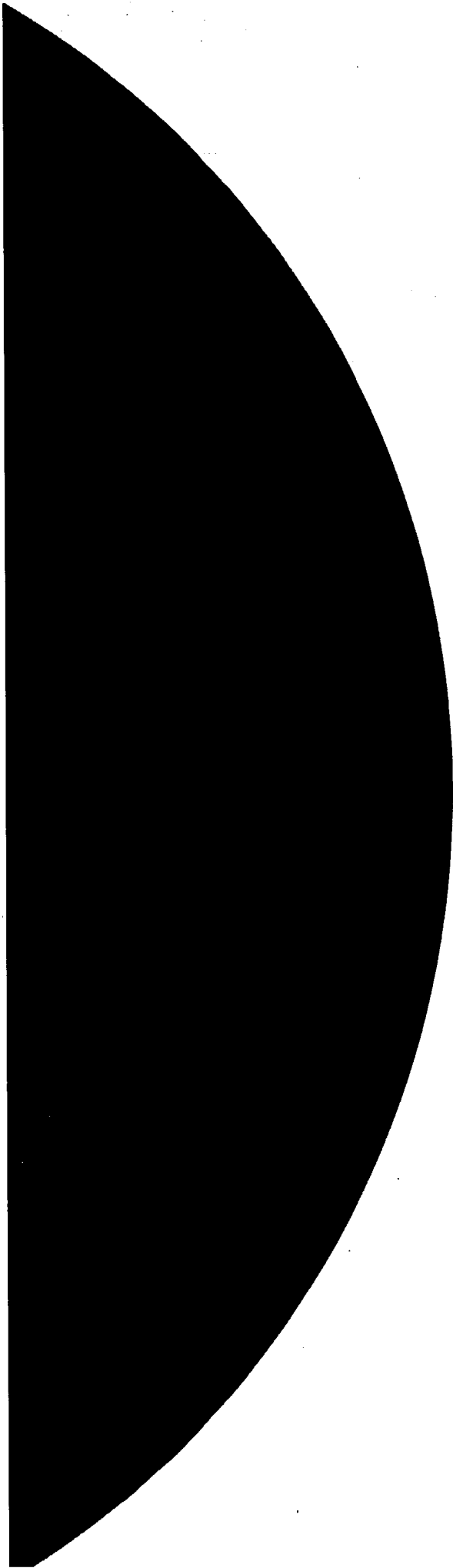
Diploma, Crosby High School

**1 Years with firm**

**18 Years experience**

#### Select Project Examples

- Humble Independent School District, Guy M Sconzo Early College High School; Humble, TX
- Humble Independent School District, Pine Forest Elementart; Humble, TX
- Conroe Independent School District, Grand Oaks High School; Spring, TX
- Tomball Independent School District, Northpoint Intermediate School; Tomball, TX
- Fort Bend Independent School District; Hightower High School; Missouri City, TX



## 3 | Experience, Workload, & Certifications



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# Firm Experience

Over the past ten years, we have focused our design and commissioning expertise on drastic energy reduction. Working with various architects, we have designed some of the most energy-efficient buildings in the United States, including 50+ zero-energy buildings and 190+ that are zero-energy capable.

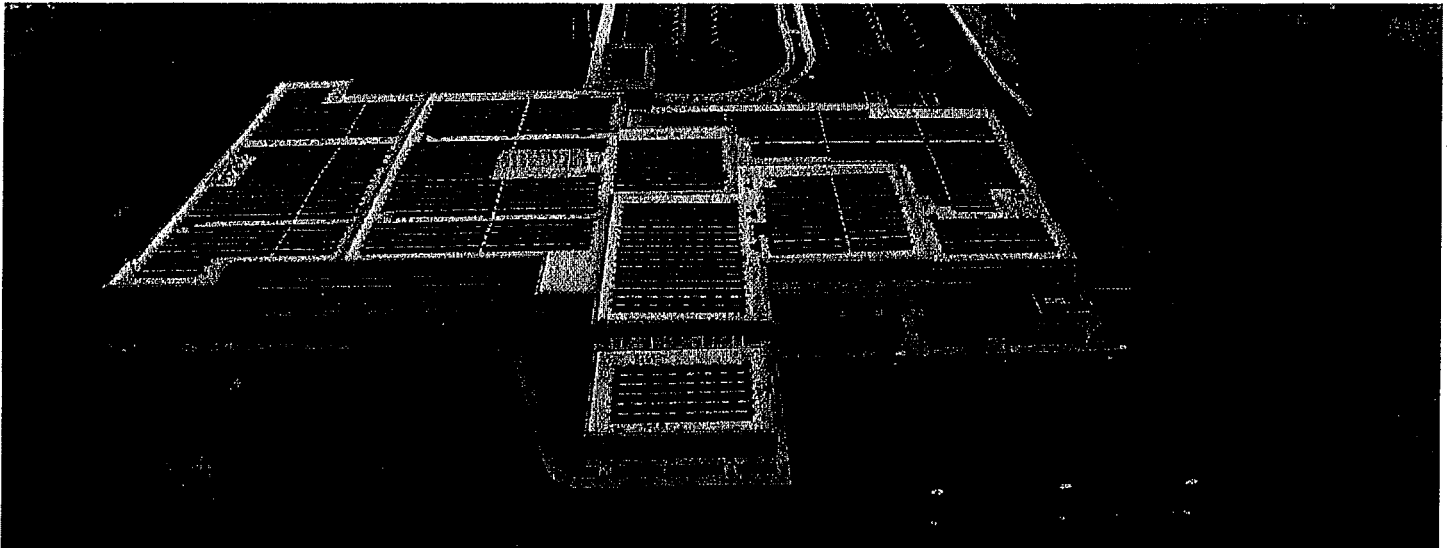
On two recently commissioned projects, CMTA shows documented results of the value of commissioning. The first project, Wilde Lake Middle School, was modeled to perform at a 22 EUI, and after thorough commissioning, utility bills show it operating at a 13.8 EUI for the first six months. We performed zero-energy

commissioning and extended monthly commissioning services on the second project, Locust Trace Agri-Science Center. The building was modeled in the low 20s and has been operating at 16 EUI for the past year. Both of these projects are zero-energy certified.

Recent success at Discovery Elementary in Arlington, Virginia, led to the Maryland Energy Association seeking sustainable design and commissioning expertise for Wilde Lake Middle School. CMTA was tasked with contributing recent lessons learned in a net-zero focused design charrette and providing LEED Enhanced Commissioning.

CMTA's commissioning team performed an in-depth analysis of the advanced metering system; demand control ventilation system, geothermal HP compressor operation, and lighting control system to ensure that all known energy conservation measures were implemented. Once confirmed, CMTA dedicated many hours to fine-tuning and ensuring that the systems were operating per the designed sequence of operations.

The building performance data after one year indicates that a building designed at 20.3 EUI was constructed, controls implemented, and commissioned to perform at a 13.8 EUI.



Howard County Public Schools - Wilde Lake Elementary, Columbia, Maryland

**20.3**

Operating EUI  
Pre Commissioning

**13.8**

Operating EUI  
Post Commissioning

**32%**

Reduction in Energy  
Post Commissioning



**15**  
Performed  
EUI

# Jennings Creek Elementary School

Warren County Public Schools | Bowling Green, Kentucky

Warren County Public Schools takes pride in being a progressive school district, especially in energy-efficiency and zero energy buildings. According to Energy Star, the median elementary school's energy usage index (EUI) is 48.5. As of February 2020, Jennings Creek Elementary School operates at 15.0 EUI, representing an energy usage 69% below a typical facility, making it the most energy-efficient school in Kentucky and one of the most energy-efficient schools in the country.

The Data-Driven Design approach used to size the solar photovoltaic system resulted in a cost-efficient zero energy facility. Although it was not a part of the guaranteed savings, the net-meter solar design, combined with demand limiting

control strategies, also offsets a portion of the facilities' electrical demand charges. Jennings Creek's average monthly peak demand during a 30-minute period of time is 127 kW or 1.5 W/SF, which is ~25% less than similar facilities in Warren County.

### ***Project at a Glance***

Completion: 2018

Size: 88,472 SF

Project Type: New Construction

Awards / Certifications:

- Zero Energy

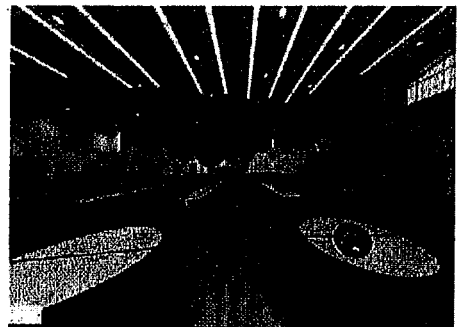
### ***Reference***

Jay Wilson

Energy Manager

(270) 781-5150

[jay.wilson@warren.kyschools.us](mailto:jay.wilson@warren.kyschools.us)







18

Performed  
EUI

# Richardsville Elementary School

Warren County Public Schools | Bowling Green, Kentucky

Richardsville Elementary School, the first Zero Energy Public School in the United States, accommodates 500 students. To make Zero Energy affordable, the design strategy focused on sweeping energy conservation measures. The goal was to design a school that annually consumes 18 kBtu/sf/year. To meet the Zero Energy goal, the school has 208 kw of roof mounted thin film solar photovoltaics and 140 kw of mono-crystalline photovoltaic panels.

The attractive two-story, rectangular design was chosen to provide an efficient shape that would minimize exterior surfaces without any sacrifice to the educational program. ICF (insulated concrete forms) wall construction was chosen to improve the thermal envelope's performance and minimize infiltration rates.

The enhanced geothermal HVAC system designed for this school includes distributed pumping and dual compressor heat pump units. The outside air ventilation system consists of a single 100 percent

outside air heat recovery air handling unit with variable volume and demand control features. CO2 levels are measured through the use of a pneumatic air tubing system. This allows centralized testing of air quality in each classroom with a lab-grade quality CO2 sensor. Based on the measured air quality, ventilation air is either increased or decreased directly to the occupied spaces through the use of variable air volume boxes to satisfy room conditions.

The classrooms are daylit through the use of exterior glazing and roof-mounted Solatubes®. The lighting systems are dimmable based on measured light levels. A priority was for the lighting and controls system to operate at 0.7 w/sf.

Commissioning services included:

Design Commissioning

- HVAC & Controls
- Lighting & Controls
- Air Handling & Outside Air Controls
- Kitchen Makeup Air & Exhaust

Construction Commissioning

- HVAC & Controls
- Lighting & Controls
- Air Handling & Outside Air Controls
- Kitchen Makeup Air & Exhaust
- Owner Training
- Systems Manual
- Warranty Manual

### **Project at a Glance**

Completion: 2010

Size: 72,300 SF

Project Type: New Construction

Awards / Certifications:

- Zero Energy
- 2012 National Green Ribbon School

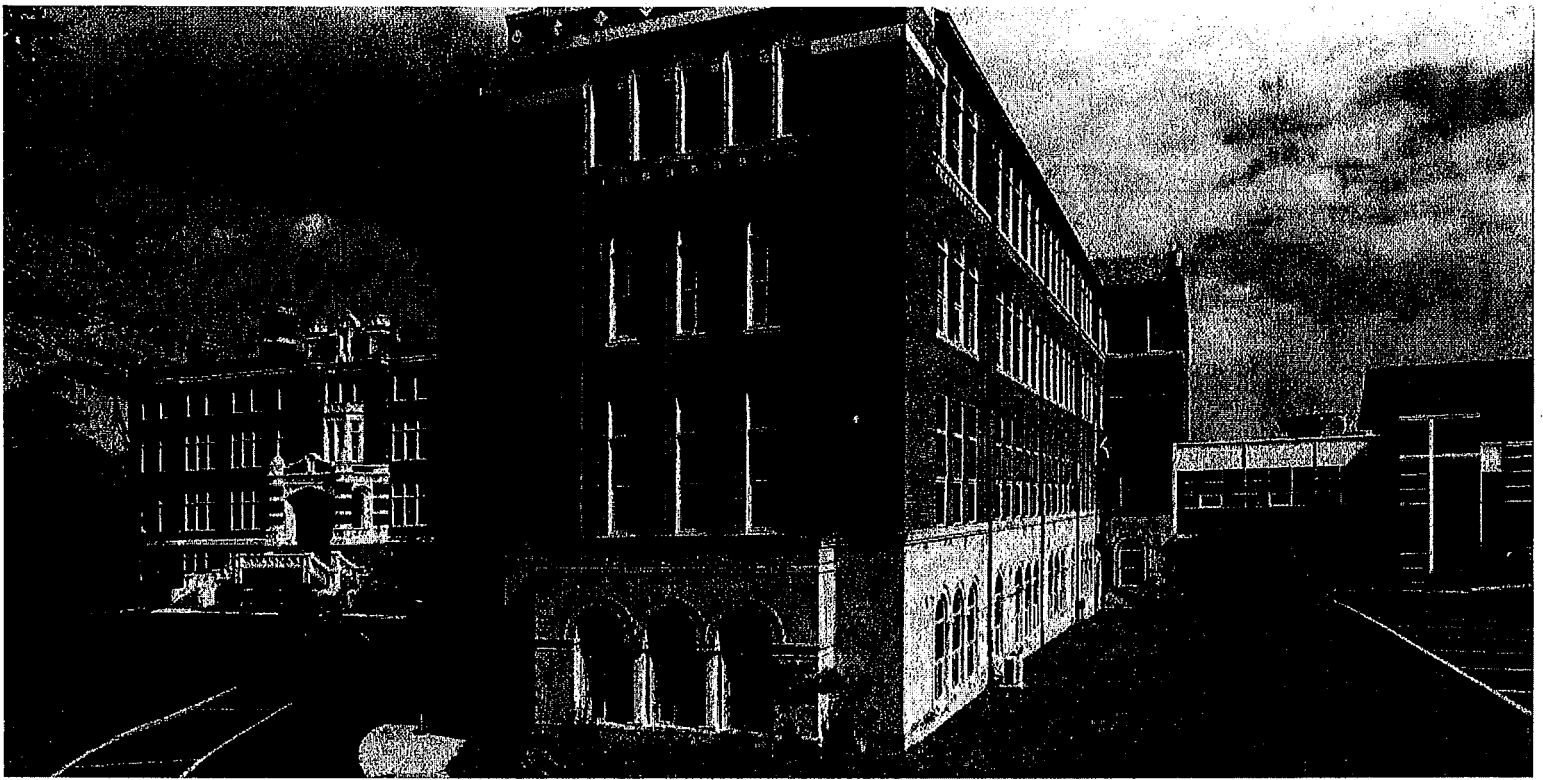
### **Reference**

Jay Wilson

Energy Manager

(270) 781-5150

[jay.wilson@warren.kyschools.us](mailto:jay.wilson@warren.kyschools.us)



# District Wide Renovations - Commissioning

Cincinnati Public Schools | Cincinnati, Ohio

CMTA completed Phase I and Phase II Energy Renovation Projects for Cincinnati Public Schools to replace failing HVAC Systems, provide updated automated control and lighting systems, and to retro-commission existing facilities not performing as desired.

The Phase I project included complete HVAC renovations of five buildings totaling 400,000 square feet. These buildings were commissioned to ensure the project success in reducing energy consumption with an estimated energy savings of \$1.5M annually.

The upgrades and improvements for Phase I included:

- HVAC System Upgrades/ Replacements
- Building Automation System Upgrades
- Energy Management
- Kitchen Upgrades
- Exterior Lighting Improvements
- Interior Lighting Replacements
- Gym Lighting Improvements

- Lighting Controls

Phase I projects were completed successfully and the district elected to fund a Phase II project for even more district energy savings. The Phase II project included complete HVAC renovations of three buildings and implementation of HVAC energy improvement strategies in 26 schools. The commissioning of 220,000 square feet of renovated space and retro-commissioning of 2,300,000 square feet was performed to ensure the project was successful in reducing energy consumption with an estimated savings of \$1.2M annually.

The upgrades and improvements for Phase II included:

- HVAC System Upgrades/ Replacements
- Building Automation System Upgrades
- Energy Management
- Kitchen Upgrades
- Demand Control Ventilation
- Exterior Lighting Improvements

- Interior Lighting Replacements
- Gym Lighting Improvements
- Lighting Controls

A total of 2.9M square feet was commissioned and retro-commissioned for the client. The projects are being monitored on a regular basis and are on track to reach the annual savings goal of \$2.7M.

- Design Commissioning
- HVAC & Controls
- Lighting & Controls
- Air Handling & Outside Air Controls
- Kitchen Makeup Air & Exhaust
- Construction Commissioning
- HVAC & Controls

## ***Project at a Glance***

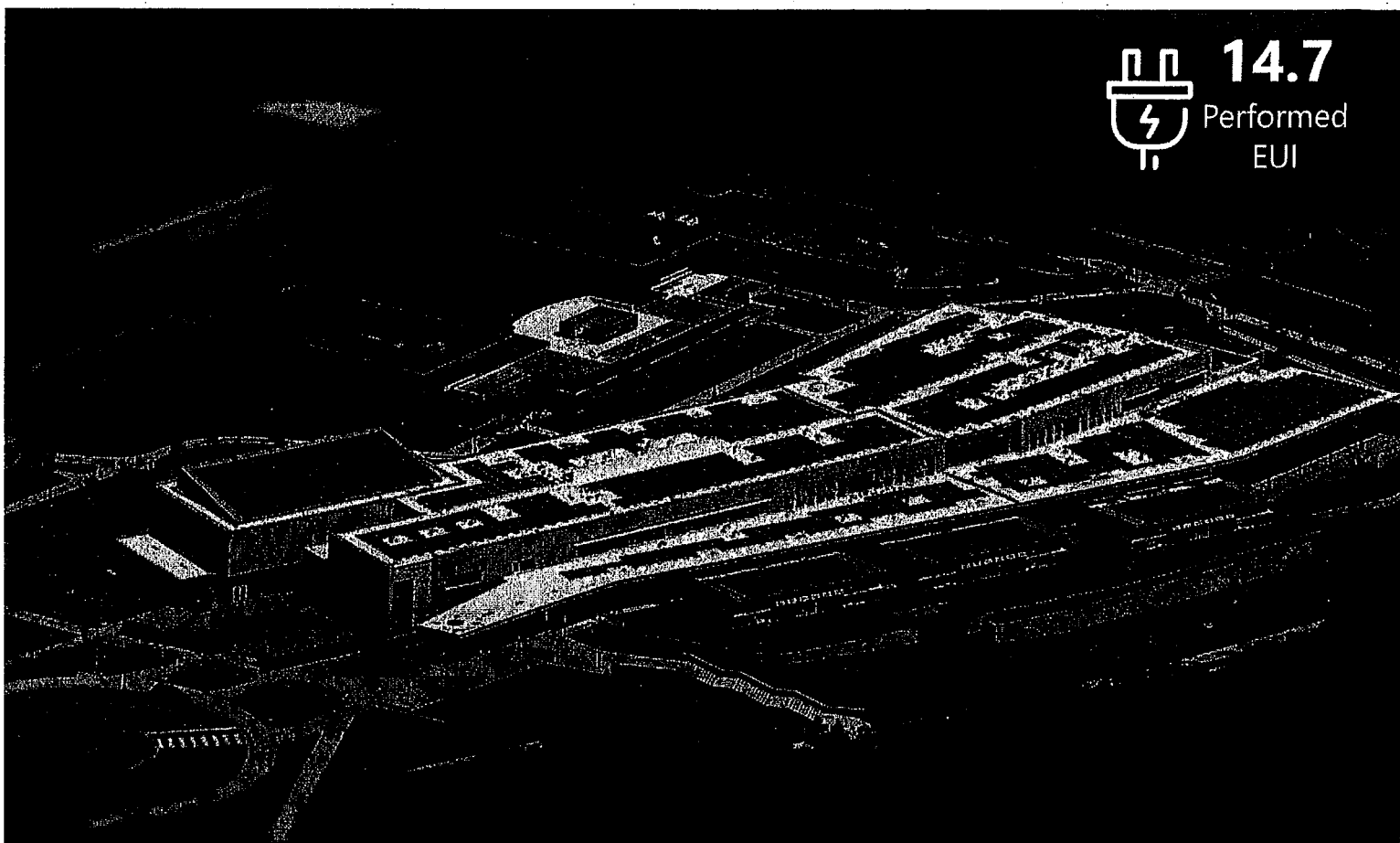
Completion: 2015  
 Size: 2,920,000 SF  
 Project Type: Renovation

## ***Reference***

Bill Moehring  
 Project Coordinator  
 513.207.9200



**14.7**  
Performed  
EUI



# Discovery Elementary School

Arlington Public Schools | Arlington, Virginia

CMTA pushed the envelope on the client's goals to help them achieve zero-energy goals within the design budget — proving that an urban school can be zero-energy. As a result, a successful project has become one of the most energy-efficient schools in the country, operating at 14.7 kBtu/sf yr. As a result, this building requires less maintenance, provides healthier air, produces less run-off, and increases occupant productivity, all while saving Arlington County substantial amounts of money in operating costs. CMTA's immersive curriculum integration program, Sphere, integrates real-time data and STEM, energy, and sustainability examples throughout this school. To view the system, go to [Discovery.CMTASphere.com](http://Discovery.CMTASphere.com)

## **Project at a Glance**

Completion: 2015

Size: 98,000 SF

Cost: \$32,000,000

Awards / Certifications:

- LEED Zero
- LEED Gold
- ENERGY STAR Score: 100
- 2017 AIA COTE Award
- 2018 ASHRAE National Technology Award- First Place

## **Reference:**

Cathy Lin  
Director, Facilities and Operations  
(571) 722-4473  
[cathy.lin@apsva.us](mailto:cathy.lin@apsva.us)





**16.3**  
Performed  
EUI



# Cardinal Elementary School

Arlington Public Schools | Arlington, Virginia

Cardinal Elementary School, CMTA's third net-zero school in Arlington, sets new standards for design excellence in sustainability, energy performance, and innovative learning environments for Arlington Public Schools. Building on energy performance innovations and user feedback from previous projects, Cardinal Elementary raises the bar for students, teachers, and the community who know firsthand how Discovery has revolutionized the district – not only with award-winning learning spaces but also with the net-zero design that provides Arlington Public Schools with \$117,000 of annual utility cost savings in comparison to a typical district school. This building is designed to require less maintenance, provides healthier air quality, and increase occupant productivity while planning to save Arlington County

substantial amounts of money in operating costs.

### **Project at a Glance**

Completion: 2021

Size: 111,000 SF

Cost: \$42,600,000

Awards / Certifications:

- Zero-energy Targeted
- LEED Silver Targeted

### **Reference:**

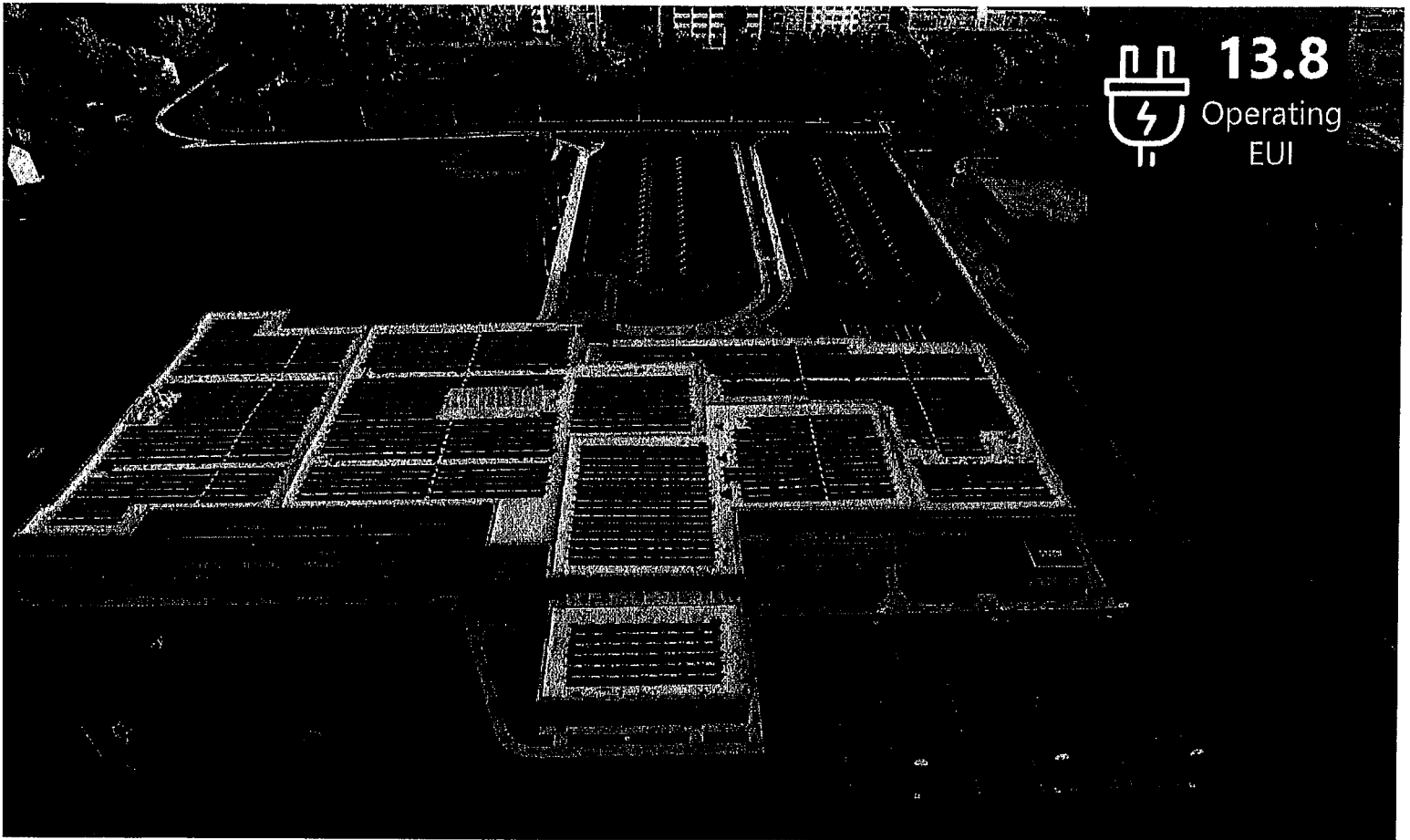
Cathy Lin

Director, Facilities and Operations

(571) 722-4473

[cathy.lin@apsva.us](mailto:cathy.lin@apsva.us)





**13.8**  
Operating  
EUI

# Wilde Lake Middle School

Howard County Public Schools | Columbia, Maryland

at Discovery Elementary in Arlington, Virginia, led to the Maryland Energy Association seeking sustainable design and commissioning expertise for Wilde Lake Middle School. CMTA was tasked with contributing recent lessons learned in a net-zero focused design charrette and providing LEED enhanced commissioning for the new Wilde Lake Middle School which was targeting and achieved Maryland's first zero-energy school.

CMTA's commissioning team performed an in-depth analysis of the advanced metering system, demand control ventilation system, geothermal HP compressor operation, and lighting control system to ensure we implemented known energy conservation measures. Once confirmed, CMTA dedicated time to fine-tuning and

ensuring the systems operate per the designed sequence of operations. One year of building performance data indicates that Wilde Lake Middle School is performing at a 13.8 EUI, making it among the most energy-efficient school in the United States.

### ***Project at a Glance***

Completion: 2017

Size: 106,221 SF

Cost: \$35,000,000

Awards / Certifications:

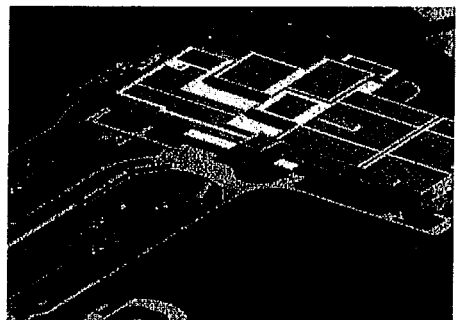
- LEED Platinum
- NBI- Zero-Energy
- ILFI- Certified Zero-Energy

### ***Reference:***

Scott Washington

(410) 313-6807

scott\_washington@hcpss.org





20

Performed  
EUI



# Graceland O'Donnell & Holabird Elementary/ Middle School Replacements

Baltimore City Public Schools | Baltimore, Maryland

Baltimore City Public Schools needed to replace two aging urban elementary/middle schools five miles apart and located close to the Baltimore Inner Harbor. From the start, the new prototype schools were required to be zero-energy ready. During the design process, CMTA worked closely with the BCPS and Grimm and Parker to challenge the previous ways that buildings were designed for the school district. Through our First 30 collaborative effort, we drove down the building's energy use by challenging the energy sources within the building.

This drastic energy reduction, allowed BCPS to be awarded the Maryland Energy Authority zero-energy grant to purchase the renewable energy source for the project. The project bid within its original budget

and the renewable energy cost only added 2.5%. This resulted in a 117,000 square foot urban school prototype designed to achieve zero-energy and LEED Platinum Certification within their traditional project budgets.

### *Project at a Glance*

Completion: 2021

Size: 117,000 SF

Cost: \$64,000,000

Project Type: New

Awards / Certifications:

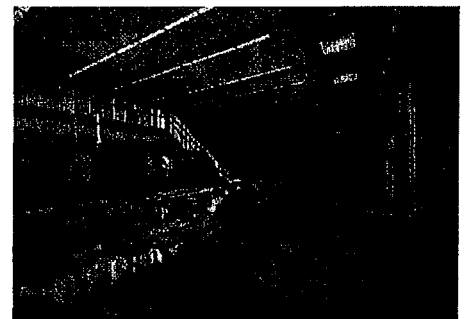
- Zero-energy
- LEED Platinum

### *Reference:*

Sonja Brookins Santelises, CEO

(443) 984-2000

CitySchoolsCEO@bcps.k12.md.us





# Working Within a Schedule

CMTA has an excellent reputation for delivering projects within a specified schedule. This success stems from careful coordination and establishing critical milestones with the Owner as early as possible in the planning and design process. Additionally, involving commissioning staff early in the process assists in the smooth transition between design and commissioning services. Once milestones are prioritized, projects are internally scheduled and coordinated with the firm's workload. Staff is then assigned as needed to meet the client's expectations.

## Scheduling Approach

In general, the following sequential priorities are followed:

- Equipment is not temporarily started (for heating or cooling) until pre-functional checklist items and the entire manufacturer's pre-start procedures are completed and moisture, dust and other environmental and building integrity issues have been addressed.
- The controls system and equipment it controls are not functionally tested until all points have been calibrated and pre-functional testing completed.
- Testing, adjusting, and balancing (TAB) is not performed until the controls system has been operationally verified and approved by the Commissioning Authority for TAB work. TAB is not performed until the envelope is completely enclosed and ceiling complete.
- Functional testing is not begun until construction, start-ups and TAB is completed, for a given system.

## Commissioning Milestones Project Schedule

The contractor updates and submits their schedule provided in accordance with project schedule to show commissioning milestone activities. Sufficient time is included to accommodate the requirements of this specification section. Regardless of the submitted schedule, the requirements of this specification section must be completed prior to system acceptance. The following activities are included in the project schedule:

- Pre-functional checklist submittal
- Performance verification tests
- Testing, adjusting, and balancing (TAB)
- TAB verification
- Functional performance testing
- Air barrier leakage testing
- Deficiency correction
- Re-testing
- Training
- Systems manual, maintenance plan, and service life plan submission

## Sample Schedule Milestones & Timeline

Milestone	Schedule Time
Qualifications	Submitted with cost proposal.
Design Phase Commissioning Coordination Meeting	Prior to 65% design; held at site
Design Phase Commissioning Plan	Within 2 weeks following design commissioning coordination meeting
65% Design Review Comments	Within 2 weeks following receipt of 65% design.
100% Design Review Comments	Within 2 weeks following receipt of 100% design.
Construction Phase Commissioning Plan	Within 2 weeks following receipt of 100% design.
Corrected Final Design Review Back Check	Within 2 weeks following receipt of corrected final design.
Construction Phase Commissioning Coordination Meeting	30 days after construction. Held at site.
Progress Meetings	Ongoing through construction.
Project Schedule Review	Ongoing through construction.
Construction Submittal and Shop Drawing Reviews	Within 2 weeks after receipt of each submittal.
Pre-Functional Checklists Submitted by Construction Contractor	Within 2 weeks after receipt.
Pre-Functional Inspection	Following pre-functional checklist submittal by contractor and prior to functional performance testing.
Trend Log Review	At least 7 days prior to scheduled functional performance tests for HVAC systems. Review within 3 calendar days.
Functional Performance Testing	Following pre-functional inspection and all testing as required by specifications. Deficiencies reported within 1 week following test.
Training Plan Review	Within 2 weeks of receipt.
Systems Manual and Maintenance Plan Review	Within 2 weeks of receipt.
Commissioning Report	Within 1 week of completion of all activities except for deferred tests and post-construction activity.
Deferred Testing Commissioning Report Update	Within 1 week following deferred testing.
Trend Log Review	Monthly after construction up to 9 months. Review within 1 week after receipt.
Trend Log Addendum	Within 2 weeks after receipt of the final trend log.
Post-Occupancy Review	Concurrent with 9-month warranty walkthrough.
Post-Occupancy Addendum	Within 2 weeks following site visit.
Post-Occupancy Survey	9 months after construction completion (seasonal).





## Staff & Resources

Our assigned professionals are readily available and eager to undertake your projects. CMTA is a firm that includes over 750 employees across 35 offices with the capacity to handle complex and fast track projects. Projects listed in the Firm Introduction have been completed by the proposed project team. This project is led and managed from our Louisville office. The Louisville office is staffed by 125+ employees and has a long relationship and history of successful work in the area. We are available to meet the district's scheduling and timing demands with qualified personnel.

Workload under a term contract fluctuates greatly depending on when a task order is issued. To help mitigate this, we structured our team to remain flexible for these task orders as they arise. When a task order is issued, it is anticipated that it is sent to Brent Leinenbach, the account manager. We then assemble the most appropriate and responsive team based on the identified scope of work. Further, weekly office planning allows us to manage and accommodate greater project involvement as client needs grow. For instance, any of these team members could manage as much as 40-60% workload supporting this contract with short-term planning and support from the larger team.

CMTA has a consistent track record of a manageable balance of projects and staff availability to commit to project success. The proposed team members have the capacity needed to support the needs of the district. They are responsible for each project from conception through construction. CMTA has a deep bench of resources for engineering and design support if needed at any time.

# Company & Employee Certifications





hereby certifies that

### Brent Leinenbach, CxA

CMTA Engineering Consultants

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG.

#### Certified Commissioning Authority

Registration number: 321-1894. This certificate, valid only for the year 2023, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



*J. Garcia*  
Jana K. Garcia, P.E., CxA  
Certification Council Chair



*R. Best*  
Ray Best  
ACG Executive Director

The validity of the energy label and the related requirements.



hereby certifies that

### Sammy J. Gordon, CxA

CMTA Engineering Consultants

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG.

#### Certified Commissioning Authority

Registration number: 325-2090. This certificate, valid only for the year 2023, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



*J. Garcia*  
Jana K. Garcia, P.E., CxA  
Certification Council Chair



*R. Best*  
Ray Best  
ACG Executive Director

The validity of the energy label and the related requirements.



hereby certifies that

### Zachary Schneider, CxA

CMTA Engineering Consultants

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG.

#### Certified Commissioning Authority

Registration number: 508-309. This certificate, valid only for the year 2023, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



*J. Garcia*  
Jana K. Garcia, P.E., CxA  
Certification Council Chair



*R. Best*  
Ray Best  
ACG Executive Director

The validity of the energy label and the related requirements.



hereby certifies that

### Todd W. Givens, CxA

CMTA Engineering Consultants

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG.

#### Certified Commissioning Authority

Registration number: 323-2082. This certificate, valid only for the year 2023, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



*J. Garcia*  
Jana K. Garcia, P.E., CxA  
Certification Council Chair



*R. Best*  
Ray Best  
ACG Executive Director

The validity of the energy label and the related requirements.



hereby certifies that:

**Daniel A. Chesser, CxA**

CMTA Engineering Consultants

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG

**Certified Commissioning Authority**

Registration number: 123-2069 ; This certificate, valid only for the year 2023, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



*Joseph*  
Joseph R. Chesser P.E., CxA  
Certification Board Chair

*P. Ba*  
P. Ba  
ACG Executive Director



The available for use copy of ALL of our licensed documents



## 4 Methodology



# Commissioning Approach

*CMTA takes a facilitator's approach to building commissioning. Commissioning should take a holistic approach reviewing how systems work together instead of running manufacturers' start-up programs on individual systems. Today's building owners demand the management of complex building systems. A consulting engineering and commissioning firm that understands these systems are crucial to successfully commencing building operations and energy management systems.*

## System Controls

CMTA has a thorough understanding of the importance of controls. Controls are vital in getting a building to operate per the specifications, engineering intent controls, industry best practices, and Owner preference, simultaneously and synergistically working together.

Our experienced controls team thoroughly understands all aspects of controls: from design and application engineering through installation and programming to verification, Owner operations, maintenance, and system evolution over time. Most importantly, our controls team completely understands controls in an integrated building systems context. The building systems must be understood, accounted for, and functional and operational status must be factored in where no detail can be ignored. The controls system is the binding agent for sustainable building system operation.

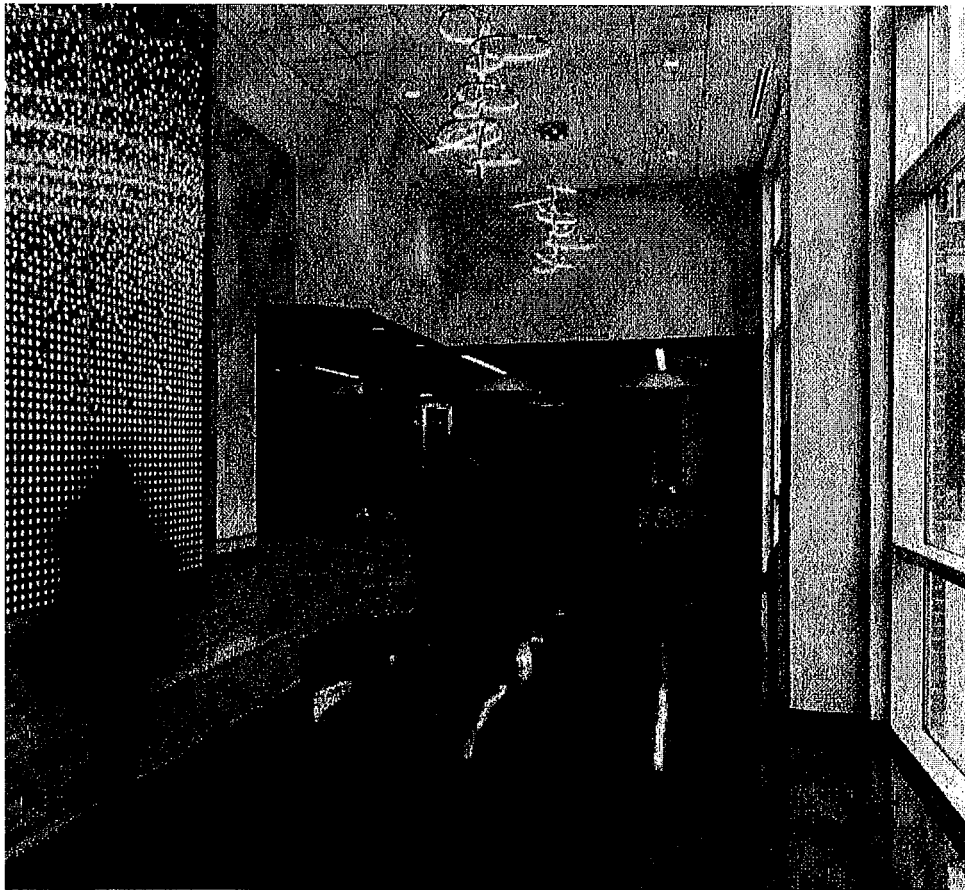
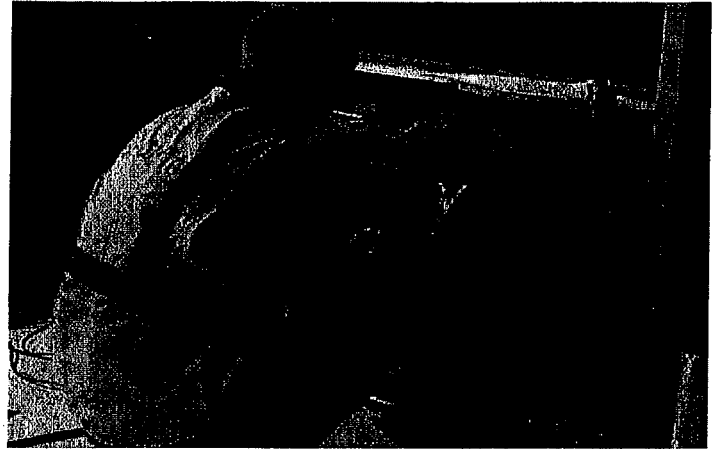
## Optimization

We understand that each building and its operation is unique. There is an optimization of the building that needs to occur after the building is occupied in order for the building to properly perform.

Our team's unique understanding of building science allows us to commission buildings better. Our ability to troubleshoot known trouble points means that the owners we work for can feel confident that their building is operating at optimal levels and reducing utility costs. Based on our experience, we firmly support the International Energy Code requirement for commissioning.

## Cost Shifting

The life-cycle cost of high-performance buildings and systems will present itself as the obvious best choice during analysis and provide you with the best overall value. However, even in most cases, high-performance design can be accomplished with little, if any, additional first costs through cost shifting. For example, if we know that a building will have an excellent building envelope and includes envelope pressure testing, we can reduce our HVAC system sizing accordingly, shifting costs.

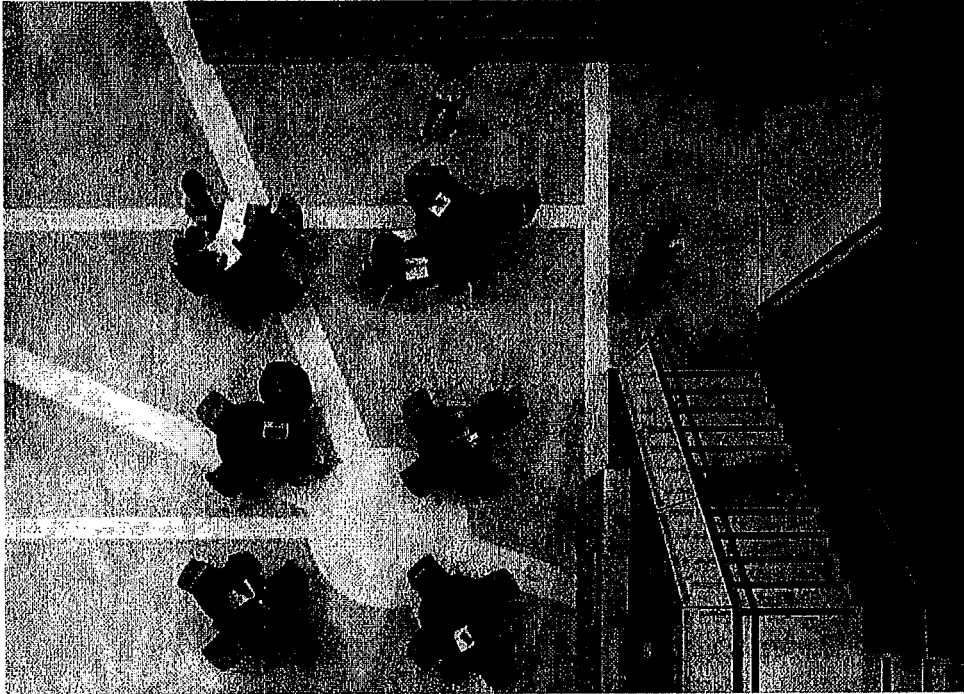


## Occupant Wellness

CMTA's buildings are moving beyond energy efficiency and sustainability to lead the industry's focus on improving occupant health. Our team has a vast understanding of the building performance metrics and design strategies that enhance the built environment for occupant comfort and wellness. This knowledge allows us to successfully incorporate strategies to focus on the occupant's well-being while still maintaining budget and energy efficiency goals.

The International WELL Building Institute (IWBI), a public benefit corporation, is leading the movement to promote health and wellness in buildings. Their WELL Building Certification is the leading tool for advancing health and well-being in buildings globally. CMTA has embraced this new certification and has three buildings certified WELL Buildings, including our latest office building in Louisville, Kentucky. In addition, 22 of our staff engineers are WELL Accredited Professionals.

# Commissioning Overview



DCPS Benjamin Bannekar , Washington, DC

The intent of commissioning services is to verify and document that a facility and its systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the owner's project requirements and design engineers' expectations. This is accomplished by properly setting goals that enhance the project's outcome.

Today's building owners demand the management of complex building systems. We have extensive experience designing and developing complex systems and sequences, which is crucial to successful building operations and energy management strategies that outperform the competition.

Our proactive approach promotes that, in addition to the efforts performed by onsite superintendents, effective QA/QC measures are implemented. As a result, we often identify new opportunities—whether specific to brands of equipment or unique building considerations—that were not apparent before the construction phase.

We see ourselves as the owner's eyes and ears, an onsite representative helping orchestrate the systems' successful implementation. We realize that attention to detail and construction scheduling organization are keys to quality commissioning and have lasting impacts that are realized throughout the life of a facility.

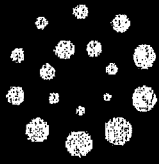
## Cx Differentiators

- Knowledge of complex energy saving sequences of operations of equipment.
- Sampling method. High-performance requires all units to be tested and trended.
- Hands-on engineering approach to issues resolution.
- Advanced trending techniques for performance optimization (7-day + trends).
- Active Construction Management role. Prioritize/ Expedite construction schedule items critical to avoid delays.
- Detailed owner/facilities staff training and occupancy phase follow-up.
- Accessibility to clients throughout the Commissioning process (ex: calls after hours, weekends, etc.)
- Team members of diverse experience/knowledge backgrounds.
- Historical Performance Database / Benchmarking



Novak Center for Children's Health,  
Louisville, Kentucky





# CMTA

**< 0.15 CFM/SF**  
Envelope Leakage Rate

# VS

# Competitor

**0.4 CFM/SF**  
Envelope Leakage Rate

## Building Envelope Cx

The building envelope is critical to the energy performance of any building. Building Envelope Commissioning (BECx) is a quality-based process to determine the impact the envelope's performance has on a project's defined objectives, standards, and owner requirements.

As a national leader in high-performance, low-energy buildings, CMTA understands the importance of a tight building envelope concerning Indoor Air Quality (IAQ) and energy performance. As such, we started performing our envelope commissioning over the past five years and have commissioned over ~2.3 million square feet of building envelopes since.

Periodically for complex applications, CMTA augments our team with architectural specialists that excel in envelope design

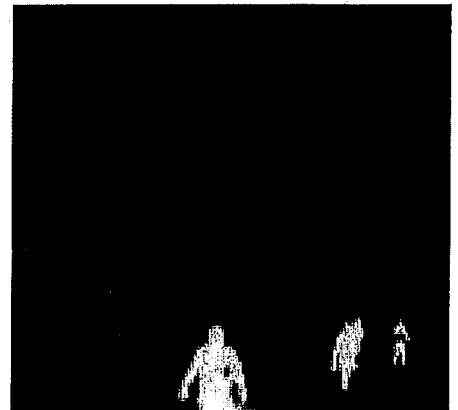
and construction to yield buildings with extremely low leakage rates (<0.15 cfm/sf). These team members provide design peer reviews of the architectural envelope, shop drawing reviews, and onsite inspections of the building envelope construction. This team and our proven process are vital to ensure a high-performance envelope.

One persistent myth is that BECx is solely for new construction, but it can also be applied to existing buildings. For example, many envelopes we test today were not constructed according to the design specification, and the result was that the building leaked air excessively.

As a result, much more energy was required to keep occupants comfortable than initially intended.

By reviewing the original design and

submittal documentation, we evaluate the current performance of an existing building and conduct thermal scanning as well as water and air intrusion testing. If results show the envelope is not performing to the owner's standards, solutions can be implemented as part of an improvement plan.

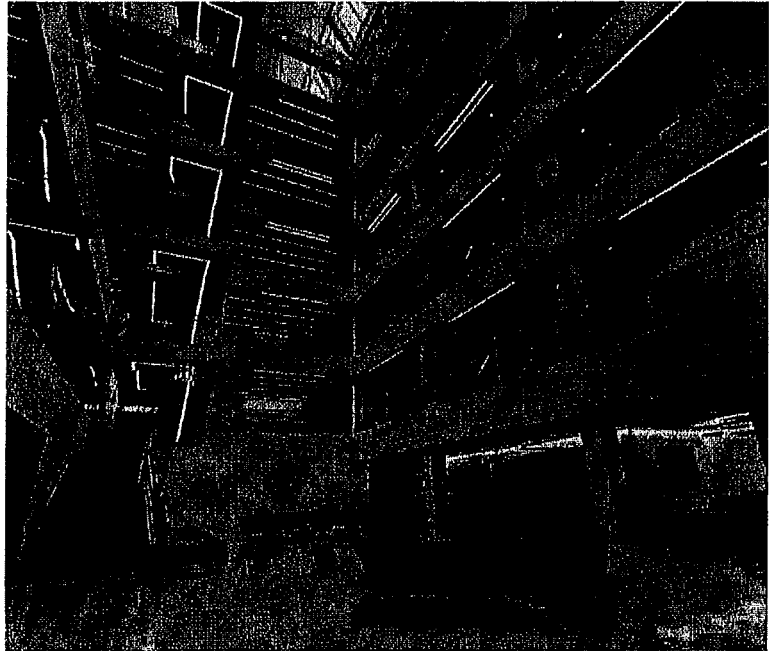


# Continuous Commissioning

Continuous commissioning, or monitoring-based commissioning, uses technology to mine savings from data from equipment and building systems. Continuous commissioning has proved to be a practical approach to delivering verifiable savings for commercial real estate operators. Real-time monitoring of equipment uncovers faults and inefficiencies on an ongoing basis instead of periodically with traditional retro-commissioning.

Continuous commissioning combines real-time data collection with automated analysis techniques to uncover anomalies. Unfortunately, many operational teams resist raw data, however sophisticated, because they need more time, skills, and/or budget to take action on the information.

More recent continuous commissioning programs have focused on delivering specific, actionable insights to enable building operators to benefit from constant commissioning without changing their usual roles and responsibilities.



[mccormick.cmtasphere.com](http://mccormick.cmtasphere.com)

# Retro Commissioning

Retro-commissioning is a process to improve the efficiency of an existing building's equipment and systems. It can often resolve problems during design or construction or address problems that have developed throughout the building's life as equipment has aged or as building usage has changed. Retro-commissioning involves a systemic evaluation of opportunities to improve energy-using systems. To illustrate, if the same process were applied to a car, mechanics would adjust the settings, controls, components, and engine design based on how the owner drives. Commercial buildings frequently undergo operational and occupancy changes that challenge the mechanical, electrical, and control systems, hindering optimal performance. In today's complex buildings, systems are highly interactive, with sophisticated controls that can create a trickle-down effect on building operations – minor problems have significant effects on performance. As a result, buildings can experience performance degradation over time.



**24 EUI**  
Operating

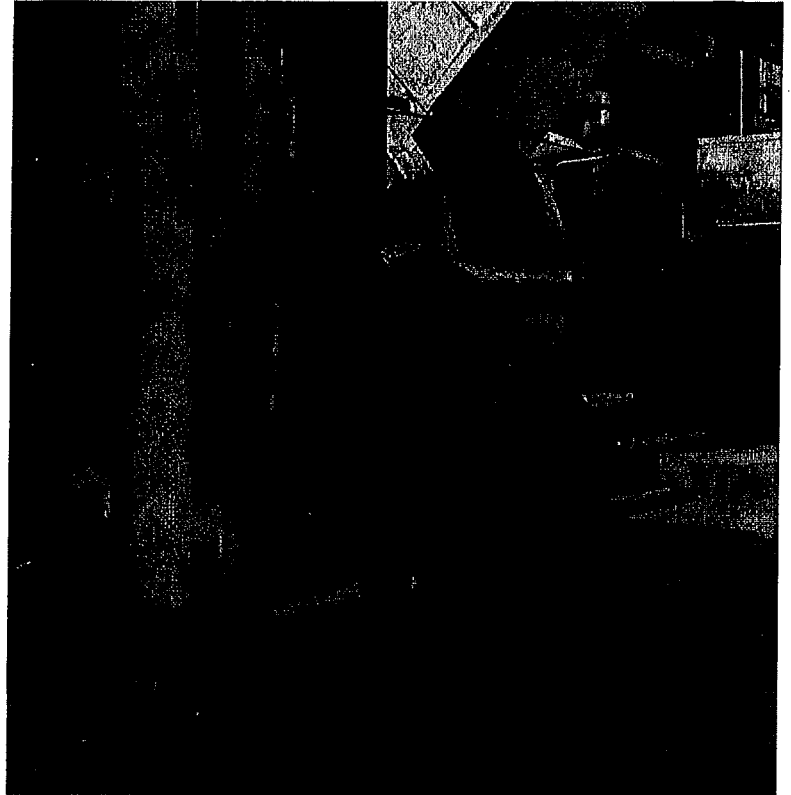
Shadow Creek High School, Pearland, Texas

# Design Application Review Services

The Design Phase Commissioning process begins with our team reviewing the Owner's Project Requirements (OPR) and meeting with the owner and design team to verify the OPR as a basis for reviewing the design documents and construction documents for compliance with the owner's written expectations. Once the OPR and the construction documents are reviewed, the Commissioning Specifications included in the construction documents are verified to meet the owner's requirements.

We understand that the architect and engineer team are responsible for the design; however, we have found that projects often benefit from independent reviews when they produce constructive suggestions for consideration.

As part of our involvement, we perform a detailed review of the construction documents (drawings and specifications) as they are produced, mainly from constructibility, operability, and maintainability perspectives.



## Cx for LEED Certification

We take pride in our ability to assist clients in achieving LEED certification and sustainability goals through energy-conscious system selection, renewable energy source implementation, and advanced control techniques. When paired with a rigorous commissioning effort, this results in performance achievements rarely seen in the industry.

We offer professional engineering and commissioning services to fulfill LEED demands surrounding Sustainable Sites, Water Efficiency, and Energy and Atmosphere credits. With over 100 LEED APs, we can accommodate full-service LEED requests. In addition, our commissioning consultants have specific expertise in areas such as fundamental and enhanced commissioning, monitoring-based commissioning, building envelope commissioning and pressure testing, and Indoor Air Quality.

## Achieving Certifications

Although third-party building certifications are not a goal for every project or owner, our success in guiding projects through the process of achieving certifications is another way we can quantify our effectiveness as a leader in sustainability.



### 202 LEED Projects

21 Platinum; 87 Gold; 67 Silver; 27 Certified



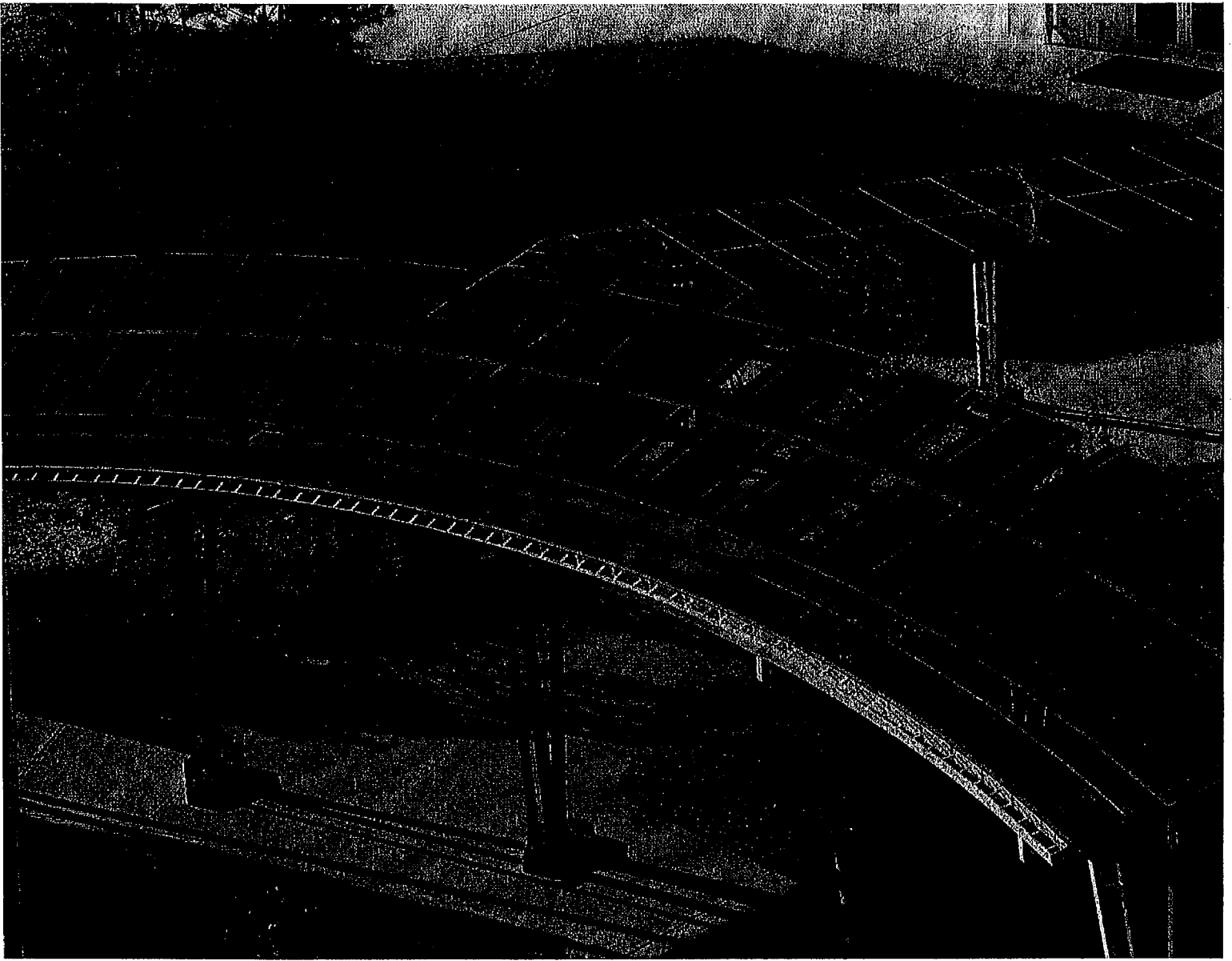
### 9 WELL Projects

5 Gold; 4 Certified



### 700+ ENERGY STAR

projects scoring over 75



## Achieving High Performance

*Buildings account for nearly 40% of the energy consumed in the United States (EIA, n.d.). Reducing this energy use offers many benefits to our communities and occupants. CMTA has been a pioneer in the engineering design of high-performance and zero-energy buildings for decades and understands how complex changing paradigms can be. However, our firm believes that achieving low-energy-consuming buildings can become a reality, even for publicly-funded entities. This document showcases various projects from various markets that achieved, or are targeting, extraordinary results and cost savings through high-performance design.*

### Consensus Building

CMTA has decades of experience addressing sustainability and energy reduction in facilities while meeting life-safety regulatory requirements and without compromising budget or schedule. Our team has led hundreds of sustainability charrettes for all types of projects. During these events, held as early in the design process as possible, we gather all the project stakeholders, including designers, engineers, owners, facility managers, and end-users. Our experienced staff led the group through the exercise of collaborating to set sustainability goals for the project, including; energy reduction, occupant health and wellness, and building certifications such as LEED, WELL, or ENERGY STAR.



## 5 Proposed Fee Letter



November 24, 2023

**Re: MEP Commissioning Services  
Bernheim Middle School Renovation  
Shepherdsville, Kentucky  
CMTA Project No.: CBBM23**

Dear Mr. Clemens,

CMTA is pleased to submit this proposal for providing Commissioning (Cx) Services for the Bernheim Middle School Renovation project in Shepherdsville, Kentucky. This proposal includes comprehensive commissioning (Cx) process activities for mechanical, electrical, and plumbing systems and assemblies for this facility.

Properly tuning the building systems are critical components to ensuring the building is operating in compliance with construction documents and design intention. We are excited to partner with you to offer this service. Please refer to the scope of services below for our detailed involvement.

#### **I. Commissioning Scope**

##### **MEP Commissioning**

Complete the following commissioning process (CxP) activities for mechanical, electrical, plumbing systems and assemblies in accordance with ASHRAE Guideline 0 and ASHRAE Guideline 1.1 for HVAC&R systems, as they relate to energy, water, indoor environmental quality, and durability. We propose to perform the following tasks:

1. Review the OPR, BOD, and project design.
2. Develop and implement a Cx plan.
3. Host regular Commissioning Meetings to coincide with Owner Progress Meetings
4. Review contractor submittals.
5. Development of pre-functional checklists and functional test sequences.
6. Conduct functional testing of the base building systems and equipment.
  - a. The controls contractor shall manipulate the building controls system under the direction of the Owner & CxA to collect data and to demonstrate functionality of the systems per the designed functional test sequences.
7. Development and maintenance of a Commissioning Issues and Benefits Log (Deficiency List).
8. Verify operator and occupant training delivery and effectiveness.
9. Development of a Commissioning Report.
10. Review building operations 10 months after substantial completion or during seasonal testing window.
11. MBECx Analysis & Optimization:

- a. Occupancy Phase testing and trend data review will be executed through the quarterly analysis of an MBCx plan. This approach allows for increased efficiency and eliminates disruptions to the daily operations of the facility by remotely analyzing the seasonal performance of critical systems over extended periods of time without having to manually simulate varying operational conditions on-site.
  - i. This scope includes a MBCx kickoff meeting and quarterly meetings to review findings and track the implementation of recommendations and resolution of identified issues.
  - ii. CMTA will provide the MBCx scope of work through the 12-month warranty period following substantial completion.
  - iii. Further, building systems shall be optimized through the use of trending to ensure that actual system performance meets or exceeds energy model predictions.

## II. Systems to be Commissioned:

### **High Performance Integration and Verification Commissioning - Approach**

We propose that for the Middle School facility Renovation (~ 70,158 sf) the systems to be commissioned include, but are not limited to the following:

#### HVAC System

1. Outside Air Units (DOAS)
2. Water Source Heat Pumps
3. Geothermal Loop & Associated components
4. Hydronic Pumps and Valves
5. Variable frequency Drives
6. Make-up Air Units
7. Exhaust Fans
8. Electric Unit Heaters
9. Kitchen Hoods
10. Kitchen Refrigeration Monitoring
11. Test & Balance Witness and Review
12. Fire Alarm system Integration to HVAC systems
13. DDC Controls
  - a. DDC System Integration & Point Compliance
  - b. DDC System GUI Compliance

#### Plumbing

1. Domestic Hot Water System
  - a. Water Heaters & associated pumps, components.

#### Electrical

1. Emergency and Standby Power Systems
  - a. Generator & ATS Equipment
  - b. Blacksite/Power Loss
2. Lighting Controls

3. Power Monitoring & Metering System
4. Photovoltaic (PV) System

**III. Proposed Fee:**

Given the systems described above and the complexity in scheduling and testing these systems, CMTA shall perform the above scope of work for the fee breakdown listed below:

<u>Fee Breakout Description</u>	<u>Fee Breakout</u>
<b>MEP Cx – (Base Bid)</b> (Performance Integration and Verification MEP Commissioning)	<b>\$ 49,250.00</b>
<i>Project Expenses</i>	Included in Fees above

Expenses for trips to the site are included in the fees listed above. We will work with the owner group and the Contractor to schedule and prioritize work in an effort to maximize results.

**Functional Performance Testing Requirements:**

1. The above lump sum fee includes one initial functional performance test for each system noted to be commissioned above.
2. If the Contractor has deficiencies that cannot be corrected at the time of functional testing, that part of the sequence will be retested at a later date at no additional charge. If the deficiency does not pass during the first retest and the retest requires an additional trip to the site, the Contractor will be billed for the commissioning personnel's return trip for each subsequent retest at a rate of \$1,200 per trip. The owner group will not be billed in this circumstance. This does not consider a return trip for a second Building pressure test mobilization.

**IV. Exclusions**

1. The following items/systems have been excluded from this proposal: (Note - A revised proposal to include these services is available upon request)
  - a. Security/Access Control Systems Commissioning
  - b. Telecommunications/LV Systems Commissioning
  - c. Building Envelope Commissioning

Please contact us if you have any questions or would like to make any modifications to this proposal. Again, thank you for the opportunity.

Sincerely,




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Brent Leinenbach  
Commissioning Accounts Manager  
[bleinenbach@cmta.com](mailto:bleinenbach@cmta.com), 502-216-3668

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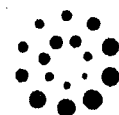
Owner Representative

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Date



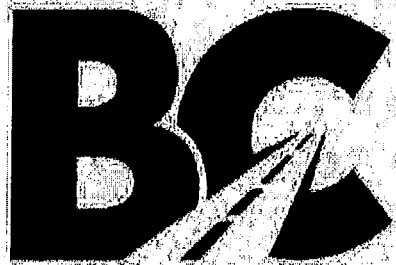
## 6 Original RFP



**CMTA**

CMTA.COM

MEP Commissioning Services RFP  
Bernheim Middle School Renovation  
Bullitt County Public Schools  
Renovation | Shepherdsville, Ky  
BG# 23-051 | ska# 2022-36



MOVING FORWARD

# BULLITT COUNTY PUBLIC SCHOOLS

Commissioning Services RFP for

**Bernheim Middle School Renovation**

Renovation | Shepherdsville, Kentucky

BG# 23-051 | ska# 2022-36

November 8, 2023

**RFP-v1**

**MEP Commissioning Services RFP  
Summary Sheet**

studio kremer architects

1231 S Shelby St, Louisville, KY 40203

TEL: 502.499.1100 FAX: 502.499.1101

**Bernheim Middle School Renovation  
Bullitt County Public Schools  
Renovation | Shepherdsville, Ky.  
BG# 23-051 | ska# 2022-36  
RFP-v1**

**Professional Services:** Building MEP Commissioning Services

**Project Name and Location:** Bernheim Middle School Renovation  
700 Audubon Drive,  
Shepherdsville, Kentucky 40165

**Project Description:** In general, the project involves the renovation of and addition to an existing 6th – 8th grade school for accommodation of 500 students. There are two additions to the end of the building to expand classroom space. Project gross sf is 70,158 sf. Interior renovation includes the reconfiguration of partitions at the classrooms, media center, administration suite, and gym locker rooms. MEP Work involves new HVAC systems, electrical systems (including lighting), plumbing, fire-protection, communications, and electronic safety and security systems. The building will be provided with a complete HVAC system including Outside Air Handling Units (DOAS's), Water-Source Heat Pumps (WSHP's), Exhaust Fans, Ductwork Systems, Temperature Control Systems (BAS), etc.

**RFP Attachments:** The MEP construction drawings and specification sections are included as an attachment to this RFP. The entire construction document package is linked in the email containing the RFP. Reference specification sections 230800 & 265995 for the additional scope requirements for commissioning.

**Project Construction Schedule:** The Project construction start date is June 13, 2023 and Substantial Completion is projected to be July 1, 2025. See attached Phasing Plan G0.3 and summarized construction schedule below for reference:

Construction Schedule Summary (Some dates subject to change)	
<p><b>Summer 1</b> 1) June 2023 – August 2023</p> <ul style="list-style-type: none"> <li>a) Work Includes New Construction of Classroom Additions</li> <li>b) Geothermal Field</li> <li>c) Science Classroom</li> <li>d) Site Work</li> </ul> <p><b>Academic Year 1</b> 1) August 2023 - May, 2024</p> <ul style="list-style-type: none"> <li>a) Phased Construction of Classrooms and New Heat Pump Closets</li> </ul> <p><b>Summer 2</b> 1) June 2024 - August 2024</p> <ul style="list-style-type: none"> <li>a) Renovation Of Common Areas Included:               <ul style="list-style-type: none"> <li>i) Cafeteria</li> <li>ii) Gymnasium</li> <li>iii) Kitchen</li> <li>iv) Media Center</li> <li>v) Band Room</li> <li>vi) Art Room</li> </ul> </li> </ul>	<p><b>Academic Year 2</b> 1) August 2024 - May 2025</p> <ul style="list-style-type: none"> <li>a) Phased Construction of Classrooms and New Heat Pump Closets</li> <li>b) Gang Restroom Area a To Be Constructed - One to Remain in Use At All Times.</li> <li>c) Special Education Classroom And</li> <li>d) Supporting Restroom</li> </ul> <p><b>Summer 3</b> 1) June 2025</p> <ul style="list-style-type: none"> <li>a) Switchgear And Geothermal Loop Switchover</li> </ul> <p><b>Substantial Completion</b> 1) July 2025</p> <ul style="list-style-type: none"> <li>a) Owner To Move Furniture and Finish O.F.O.I.</li> <li>b) Equipment Installation Starting June 2025</li> </ul>

**Response Deadline (Proposals Due):** Proposals shall be submitted via email on or before **Nov. 24, 2023 3:00pm**. Please note, firms will be notified electronically regarding selection results.

**Proposed Lump Sum Fee:**

The commissioning service fee proposal is

\$ 49,250

**Proposals shall be submitted via email to:**

Danny Clemens  
Director of Facilities  
Bullitt County Schools  
[danny.clemens@bullitt.kyschools.us](mailto:danny.clemens@bullitt.kyschools.us)

Cate Noble Ward, AIA  
Architect  
Studio Kremer Architects  
[cate@studiokremer.com](mailto:cate@studiokremer.com)

## REQUEST FOR PROPOSAL

Bullitt County Public Schools is inviting pre-selected Commissioning Firms (referred to as CxA throughout this document) to submit a proposal for commissioning services for the Bernheim Middle School Renovation project. The responses to this proposal will be used to negotiate the contract with the selected firm.

## PROJECT SCOPE INFORMATION

The Owner is committed to commissioning this facility to systematically optimize the building and Mechanical, Electrical & Plumbing systems so that they operate efficiently and effectively in accordance with the owner's project requirements, and that the facility staff has adequate system documentation and training.

It is the intent of the Owner to ensure that these fundamental systems are calibrated and operating as required to deliver functional and efficient performance.

The Owner reserves the right to request clarification of any proposal after all proposals have been received. This request can be in the form of oral presentation or personal meetings.

## SYSTEMS TO BE COMMISSIONED

Systems to be commissioned will include the following:

(Note, all systems are to be tested 100%, sampling not allowed)

1. HVAC System
  - a. Outside Air Units (DOAS)
  - b. Water Source Heat Pumps
  - c. Geothermal Loop & Associated components
  - d. Hydronic Pumps and Valves
  - e. Variable frequency Drives
  - f. Make-up Air Units
  - g. Exhaust Fans
  - h. Electric Unit Heaters
  - i. Kitchen Hoods
  - j. Kitchen Refrigeration Monitoring
  - k. Test & Balance Witness and Review
  - l. Fire Alarm system Integration to HVAC systems
  - m. DDC Controls
    - i. DDC System Integration & Point Compliance
    - ii. DDC System GUI Compliance
2. Plumbing
  - a. Domestic Hot Water System
    - i. Water Heaters & associated pumps, components.
3. Electrical
  - a. Emergency and Standby Power Systems
    - i. Generator & ATS Equipment
  - b. Lighting Controls
  - c. Power Monitoring & Metering System

d. Photovoltaic (PV) System

**SCOPE OF SERVICES**

Commissioning Agent shall provide the following services:

Construction Phase Cx Services

1. CxA will conduct commissioning meetings and distribute minutes to the commissioning team.
  - a. Conduct a Kick-off or pre (early) construction meeting where the commissioning process requirements are reviewed with the commissioning team (A/E, CM/GC, Owner).
  - b. Conduct monthly construction phase commissioning meetings. These meetings will support the commissioning process for determining schedule, checklist completion, issues log management, and functional test scheduling.
  - c. CxA will issue a Field Observation (FO) Reports after each meeting or site visit during the construction phase of the project.
2. CxA will coordinate the commissioning work with the Construction Manager to ensure that commissioning activities are included in their master schedule. Coordinate and direct commissioning activities in a logical and efficient manner using regular communications and collaboration with all necessary parties.
3. Conduct monthly site visits, concurrent with monthly commissioning meetings, to observe component and system installation during construction.
4. CxA to maintain an Action Items Log utilizing an online commissioning software for real-time review and response.
5. CxA will review and comment on construction documentation. The purpose of this activity is to understand any modifications to the Commissioning Scope of Work.
  - a. Review RFIs, ASIs, and Change Requests relevant to the equipment/systems being commissioned.
  - b. Review shop drawings and equipment submittals for information affecting the commissioning process.
  - c. Update the commissioning plan to reflect equipment and controls data from the submittals.
  - d. Review and comment on air and water test and balance reports with the Engineer of Record
  - e. Review and comment on Operations and Maintenance Manual with the Engineer of Record
6. CxA will develop project and equipment specific Pre-Functional Checklists (PFCs) based on the project documents, submittals, and lessons learned. These documents will be managed and completed by the contractors, and then accepted by the Commissioning Authority (CxA).
  - a. Verify completion of construction checklists on a periodic basis to verify the contractor's progress.
  - b. PFCs to be managed electronically.
7. CxA will develop project and equipment specific Functional Performance Test (FPT) procedures based on the project documents, submittals, and lessons learned.
  - a. FPTs will be submitted to the design and construction team for review.
  - b. These documents will be executed by the vendors, subcontractors, and the CxA. The CxA will manage and document.

- c. The CxA will defer the acceptance of the related systems and equipment on the behalf of the Owner until after the successful completion of the FPTs.
8. CxA will perform Functional Procedures during both the heating and cooling season; however, some overwriting of control values to simulate conditions may be used if appropriate.
  - a. Identify all seasonal testing required and identify in Action Items Log.
9. CxA will conduct 7-Day performance trending of all systems commissioned and include in Final Cx Report.

#### Occupancy Phase Cx Services

1. CxA will schedule and verify any deferred seasonal testing by the contractor.
2. CxA to review contractor training agendas and provide verification of system training by the contractors.
3. CxA will develop a Final Commissioning Report. This report will be made available to the Owner for issuance to the code official, as required. The final deliverable will encompass all the commissioning project documentation which includes, but is not limited to the following:
  - a. Commissioning Plan
  - b. Commissioning meeting minutes
  - c. Site Observation Reports
  - d. Completed PFCs
  - e. Completed FPTs
  - f. Verification of Air testing of water systems
4. A copy of the final report must be made available for the Engineer of Record to submit to the Authority Having Jurisdiction, upon request.
5. CxA to Return to the site ten (10) months after occupancy to review current building operation and any open issues with the facility management staff, related to the original and seasonal commissioning. Document open issues on an updated issues log and distribute to relevant parties for resolution.
6. Monitoring-Based Commissioning:
  - a. After the controls contractor has completed the installation and programming of the building automation system (BAS), the CxA shall collect trending data from the BAS. The CxA then shall monitor the performance of mechanical systems, equipment, and metering data. Approval and assistance are requested from the network administrator for gaining access to the BAS network and pulling point & trend data.
  - b. Occupancy Phase testing and trend data review will be executed through the quarterly analysis of an MBCx plan. This approach allows for increased efficiency and eliminates disruptions to the daily operations of the facility by remotely analyzing the seasonal performance of critical systems over extended periods of time without having to manually simulate varying operational conditions on-site.
  - c. This scope includes a MBCx kickoff meeting and quarterly meetings to review findings and track the implementation of recommendations and resolution of identified issues.
  - d. The CxA shall provide the MBCx scope of work through the 12-month warranty period following substantial completion.
  - e. Further, building systems shall be optimized through the use of trending to ensure that actual system performance meets or exceeds energy model predictions.



## QUALIFICATIONS

1. The CxA must have substantial and proven in-building commissioning experience, including technical and management expertise on commissioning projects of similar scope.
2. If a subcontractor is needed, provide qualifications and clearly designate in the response to this RFP.
3. It is the desire of the Owner that the CxA satisfy as many of the following conditions and requirements as possible:
  - a. Acted as the principal commissioning agent for at least three projects of comparable size, type and scope.
  - b. Commissioning activities must be performed by full time commissioning agents.
  - c. Firm must have a dedicated full-time commissioning staff of greater than 3 commissioning agents.
  - d. Extensive experience in the operation and troubleshooting of HVAC systems and energy management control systems.
  - e. Extensive field experience for all key team members, including project managers, team leaders and field engineers.
  - f. Knowledge and experience in the following:
    - i. Writing commissioning plans.
    - ii. Writing commissioning specifications
    - iii. Testing and balancing of air and water systems.
    - iv. Energy-efficient equipment design and control strategy optimization.
    - v. Monitoring and analyzing system operation using energy management control system trending and stand-alone data logging equipment.
  - g. Excellent verbal and written communication skills.
  - h. A bachelor's degree from an accredited institution in Mechanical/Electrical engineering and professional licenses and certifications.
  - i. Certification as a Certified Commissioning Professional with the Building Commissioning Association, or hold other equal certification. These certifications shall be listed in the firm's proposal.

## PROPOSAL REQUIREMENTS

Please provide the following as a minimum in the order indicated:

1. CxA's INFORMATION & TEAM
  - a. Name, address, telephone number and e-mail of one individual point of contact during RFP process.
  - b. Key leadership and employees who will likely be responsible for providing the Cx services for this project and their specific roles, including an organizational chart for the project, and projected commitment/availability of each to the project.
2. CxA's PREVIOUS EXPERIENCE
  - a. Descriptions of three to five relevant projects similar in total project cost. For each, include:
    - i. Project name, project team, project type, location and date opened
    - ii. Summary description with project size (total SF), system type(s), etc.
    - iii. Contact information of owner references
    - iv. Energy Performance Criteria
      1. On the bid form below, the prospective commissioning agent shall list and briefly describe 5 completed K- 12 School projects where the

EUI (Energy Usage Intensity) upon completion of commissioning is 25 kbtu/SF or less:

- a. Include description of HVAC system type
  - b. Include total building square footage
2. On the bid form below, the prospective commissioning agent shall briefly describe their overall approach to the commissioning of the Middle School Renovation project for Bullitt County. List any prospective challenges and outline your firm's goals for the project.

Following are five (5) K-12 school projects where EUI upon completion of commissioning was 25 Kbtu/SF or less:

A. School Name: Wilde Lake Middle School, Columbia, MD. -- EUI: 13.8

a. HVAC System Type: Geothermal WSHP

b. Total Building Square Footage: 106,000 SF

B. School Name: Discovery Elementary, Arlington, VA. -- EUI: 15.8

a. HVAC System Type: Geothermal WSHP

b. Total Building Square Footage: 98,000 SF

C. School Name: NeoCity Academy, Kissimmee, FL. -- EUI: 20.3

a. HVAC System Type: Geothermal WSHP

b. Total Building Square Footage: 44,600 SF

D. School Name: Morgan County High School, Morgan Cty., KY. -- EUI: 19.0

a. HVAC System Type: Geothermal WSHP

b. Total Building Square Footage: 102,000 SF

E. School Name: Frederick Douglas High School, Lexington, KY. -- EUI: 18.0

a. HVAC System Type: Geothermal WSHP

b. Total Building Square Footage: 287,000 SF

Briefly describe the Approach/Process your firm will take in commissioning this facility. List challenges and thoughts to overcome. List your firm's commissioning goals for the project:  
See attached Cx Process information provided in RFP response

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3. PROPOSAL

- a. Fee Proposal. Cost for all services associated with Commissioning as outlined above.
- b. An estimated total of reimbursable expenses.
- c. Statement that CxA firm will comply with all Scope of Service items listed in RFP.

4. ADDITIONAL INFORMATION

- a. Provide any other relevant information and/or experience.

**SELECTION CRITERIA**

Proposers should be mindful that selection of a Commissioning Agent will be based on the following criteria:

- 1. Previous relevant experience: Successful and proven track record of relevant projects of similar size, scope and scale in various markets. It is important that the Commissioning Agent has the past experience working with k12 clients.

2. **Qualifications:** The individuals leading the commissioning effort shall have the requested certifications and experience mentioned in this proposal.
3. **Quality:** Quality of service working with and responsiveness to the owner and project team.
4. **Sustainability:** Demonstrated ability to commission similar projects incorporating strong principles of sustainability.
5. **Competitiveness of fees**
6. **Commissioning Approach/Process (Amount of onsite support)**
7. **Energy Performance:** Energy performance criteria of previous projects commissioned.

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**Request For Proposal Response  
For  
Commissioning Services**

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**Bullitt County Public Schools  
Bernheim Middle School Renovation**



**Attention: Danny Clemens, Director of Facilities  
Bullitt County Public Schools**

**November 24, 2023**



**Facility  
Commissioning  
Group**

[facomgrp.com](http://facomgrp.com)

156 Burt Road • Lexington, KY 40503 • Tel. (859) 278-5552  
8355 Rockville Road, Suite 36 • Indianapolis, IN 46234 • Tel. (317) 536-2618



# Facility Commissioning Group

158 Burt Road • Lexington, KY 40503 • Tel. (859) 278-5552

8355 Rockville Road, Suite 36 • Indianapolis, IN 46234 • Tel. (317) 536-2618

## Request for Proposal for Commissioning Services Bullitt County Public Schools Bernheim Middle School Renovation

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*Bullitt County Public Schools  
Bernheim Middle School Renovation  
Shepherdsville, KY*

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**Commissioning Services RFP Response**

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*1. CxA's Information & Team*





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## **COMMISSIONING POINT OF CONTACT**

Facility Commissioning Group (FCG) appreciates this opportunity to respond to your request for commissioning proposals for Bullitt County Public Schools. FCG has prepared this proposal with a keen understanding of the unique characteristics of this project and the coordination required of commissioning services to assure delivery of a working and sustainable building.

The main point of contact during the RFP Process for this project will be:

V. Todd Yates, PE  
President  
158 Burt Road Lexington, KY 40503  
859 533-5000 (Cell)  
859 278-5552 (Office)  
Todd@facomgrp.com





## **FCG KEY LEADERSHIP**

The commissioning provider team members noted below have experience in the systems and building type of this project, and all names listed below are experienced commissioning professionals.

### **PRINCIPAL IN CHARGE**

**Todd Yates, PE, TBE, CxA, LEED AP BD+C, President;** Bachelor of Science degree from the University of Kentucky in Mechanical Engineering; licensed mechanical Professional Engineer in the Commonwealth of Kentucky (#20447), Indiana (#PE10001131), and Tennessee (#001906392); certified Test and Balance Engineer (TBE #97-06-34) with the Associated Air Balance Council (AABC), charter ACG Certified Commissioning Authority (#1004-042), and a USGBC LEED Accredited Professional (LEED AP). Todd is a member of ASHRAE. He is the lead commissioning agent for the Indianapolis Public Schools – Capital Improvements Program. Todd has performed mitigation commissioning for secondary schools in Kentucky and Indiana. Sample commissioning projects include IUPUI – Biotechnology Research and Training Center, IUS – Life Science Building and Library. Todd possesses extensive HVAC experience with schools, HVAC controls, and specializes in laboratory fume hood systems.

### **PROJECT MANAGER**

**Kim Kissick, CxA;** Associate Degree in Electrical Engineering from University of Louisville. Kim has experience as a Certified Commissioning Authority (CxA) #609-512, ACG, OSHA 30-Hour Construction Safety and Health Course and has completed KSHE Safe Day One Training. Kim Kissick has building systems operation, maintenance, and design experience since 1985. Kim's expertise includes central chiller plants, central steam plants, HVAC mechanical system & controls, clean rooms, electrical distribution systems, life safety systems, emergency power generator and automatic power transfer systems. Prior industry experience includes 11 years as a Facility Engineer, Loss Control Manager and Maintenance Manager for Square D Company, three years as Facilities Manager for Modine Manufacturer. Kim also has ten years of experience as an MEP Project Manager with Paladin, Inc.

### **PROFESSIONAL AND TECHNICAL STAFF**

**Jim Adams, PE, RCDD, EMP, CxA, LEED AP, Vice President;** Bachelor of Science degree from the University of Kentucky in Electrical Engineering; licensed electrical Professional Engineer in the Commonwealth of Kentucky (#19845), and Ohio (#275323); ACG certified Commissioning Authority (CxA) #711-871; registered communications distributions designer (#140157), a USGBC LEED Accredited Professional (LEED AP) and is certified as a Crime Prevention Through Environmental Design (CPTED). Jim is a member of the Building Industry Consulting Service International (BICSI) and ASHRAE. Jim has industry experience since 1991. Sample industry projects include Eastern State Hospital, Eastern Kentucky University – New Science Building and Western Kentucky University – College of Education & Behavioral Sciences. Mr. Adams provides commissioning support relating to electrical distribution, lighting, life safety, emergency power generator and automatic power transfer systems as well as fire alarm and various low-voltage systems.

## COMMISSIONING TECHNICIAN

**Clay Kissick, CxT, ITC Level II Thermographer;** Computer Engineering/Computer Science studies at University of Louisville; ACG Certified Commissioning Technician (CxT) #226-0322. Sample projects include Eastern State Hospital, UK Football Training Center, UK – Commonwealth Stadium Expansion/Renovation, and ECU – New Science Building. Clay provides technician services as needed to support the commissioning process at the direction of the project manager and principal in charge.

## PROJECT ADMINISTRATOR

**Brandon Moore, CxA, LEED GA, Vice President;** Bachelor of Arts degree in Accounting from Transylvania University; ACG Certified Commissioning Authority (CxA) #518-1662 and USGBC LEED Green Associate #10797615. Brandon has administrative experience since 2008. Brandon's involvement in the following projects includes commissioning report production and distribution and file maintenance: Lucas Oil Stadium, Sweetwater Headquarters, Eastern State Hospital and Kenton County Middle Schools – Turkey Foot Middle School.

## OUTLINE OF ANTICIPATED DUTIES

Todd will supervise commissioning project management and coordination of site activities. Todd Yates will provide professional engineering services to provide technical support related to HVAC and HVAC controls for the commissioning process. Todd will organize the commissioning provider group and will represent executive authority for document control and deliverables, and will serve as the HVAC/DHW project engineer and principal in charge for this project.

Kim Kissick will interact with the commissioning team as the primary commissioning project contact. Kim will be responsible for site supervision of the commissioning plan implementation and directing FCG field personnel execution of the Commissioning Plan and associated documentation provided by FCG and the installing contractors. Kim will be responsible for site project management, site visits and direction of the commissioning plan creation and site execution, directing field operations, developing commissioning protocols and document control.

Jim Adams will be available to provide professional engineering services for lighting/daylighting controls design review and technical support, system verification and developing and performing Functional Performance Tests. Jim will also provide field support for the commissioning process for lighting, emergency, and renewable energy systems.

Brandon Moore will provide administration of this project, which includes document distribution, commissioning plan and report production and commissioning document administration. Brandon will provide communication support for the commissioning provider group and implement a professional approach to delivery of Facility Commissioning Group quality standards for the commissioning process.

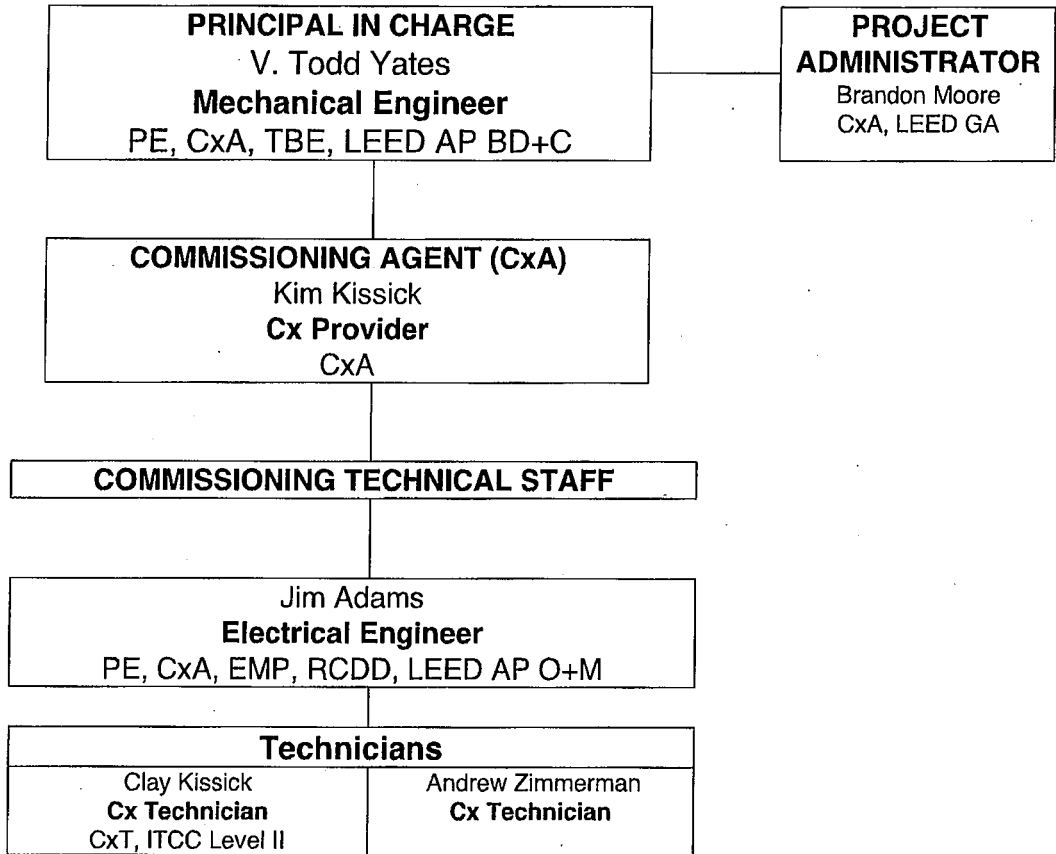


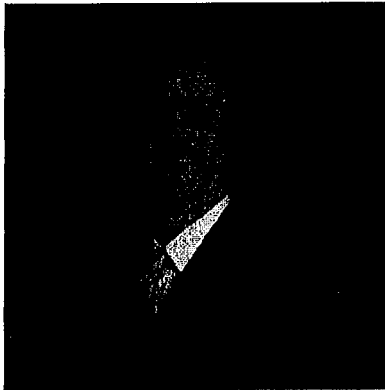
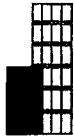
# Facility Commissioning Group

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## COMMISSIONING (Cx) ORGANIZATIONAL CHART





## V. Todd Yates, President

**EDUCATION** BSME, University of Kentucky

### **CERTIFICATIONS**

PE in the Commonwealth of Kentucky #20447

PE in the State of Tennessee #001906392

PE in the State of Indiana #PE10001131

PE in the State of West Virginia #PE021877

Certified Commissioning Authority (CxA) #1004-042, ACG

Certified Test and Balance Engineer (TBE) #97-06-34, AABC

USGBC LEED Accredited Professional #10269800, LEED AP BD+C

### **AFFILIATIONS**

Associated Air Balance Council (AABC)

AABC Commissioning Group (ACG)

American Society for Health Care Engineering (ASHE)

American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)

United States Green Building Council (USGBC)

### **INDUSTRY EXPERIENCE BEGINNING: 1991**

### **PROJECT EXPERIENCE**

#### **Indianapolis Public Schools Capital Improvements Program Phase I, II and III, Indianapolis, IN**

Project Cost: \$693,000,000 / 6,500,000 SF

Scope: Comprehensive HVAC Commissioning for renovations and new construction of elementary, middle, and high schools funded by bonds issued by the city of Indianapolis. FCG performed Commissioning pursuant to LEED certification on 25 of the 27 Phase III projects.

#### **Indiana University (IUB) – Ashton Apartment Complex, Bloomington, IN**

Project Cost: \$80,000,000 / 400,000 SF

Scope: Comprehensive HVAC Commissioning for new construction of seven student housing buildings. The new complex will have a five-story commons building that provides programming and classroom space, while the housing buildings will be four stories. It consists of 803 beds and the majority of units have four-bedroom suites, each with its own kitchen, common area and two bathrooms.

#### **Indiana University School of Medicine – Information Science Building, Indianapolis, IN**

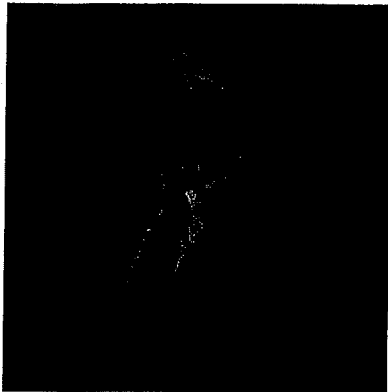
Project Cost: \$42,000,000 / 167,000 SF

Scope: Comprehensive HVAC Commissioning for new construction of a research facility that also includes restaurants and other shops to serve the occupants of the building and the general public.

#### **Purdue University – Mechanical Engineering Building - Gatewood Wing, West Lafayette, IN**

Project Cost: \$25,000,000 / 84,000 SF

Scope: Comprehensive Commissioning for research labs, classrooms, offices, conference rooms, teaching labs and breakout rooms, and tech-atrium space for exhibits and departmental events.



## Jim Adams, Vice President

**EDUCATION** BSEE, University of Kentucky

### **CERTIFICATIONS**

PE in the Commonwealth of Kentucky #19845  
PE in the State of Ohio #75323  
Certified Commissioning Authority (CxA) #711-871, ACG  
Certified Energy Management Professional (EMP), #412-E32, EMA  
RCDD (Registered Communications Distributions Designer) #140157  
CPTED (Crime Prevention Through Environmental Design)  
OSHA 30-Hour Construction Safety and Health Course  
USGBC LEED Accredited Professional #11158667, LEED AP O&M

### **AFFILIATIONS**

AABC Commissioning Group (ACG)  
BICSI Building Industry Consulting Service International  
American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) #8198793

### **INDUSTRY EXPERIENCE BEGINNING: 1991**

Design, operation, maintenance, and commissioning of electrical distribution, lighting, life safety, emergency power generator and automatic power transfer systems as well as fire alarm and various low-voltage systems.

### **PROJECT EXPERIENCE**

#### **Eastern Kentucky University – New Science Building, Richmond, KY**

Project Cost: \$83,000,000 / 234,000 SF

Scope: New construction of a facility with laboratory classrooms and offices. The facility also features an atrium and greenhouse to draw attention to the environment and serve as teaching tools. With this emphasis on the environment EKU has utilized a sustainable design for this facility. Mr. Adams was responsible for specification development and design of the physical access control and DVMS (digital video management system) through the contract document phase of this project.

#### **Eastern State Hospital, Lexington, KY (LEED Silver)**

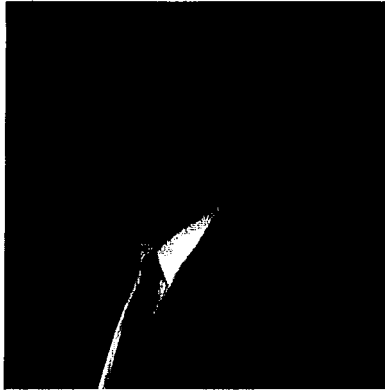
Project Cost: \$129,000,000 / 323,000 SF

Scope: New construction of a mental health care facility that is a state-of-the-art facility providing specialized programs such as for veterans with substance abuse and mental illnesses. Mr. Adams was responsible for specification development and design of the physical access control, DVMS, and emergency notifications systems through the contract document phase of this project.

#### **Western Kentucky Univ. – College of Education & Behavioral Sciences, Bowling Green, KY (LEED Gold)**

Project Cost: \$35,000,000 / 119,000 SF

Scope: New construction of a building that will house administrative, classroom, library and clinical spaces dedicated to literacy, psychology, and counseling programs. Mr. Adams was responsible for Physical Security, Access Control design and contract administration.



## Kim Kissick, Commissioning Provider

**EDUCATION** AEE, University of Louisville

### **CERTIFICATIONS**

Certified Commissioning Authority (CxA) #609-512, ACG  
OSHA 30-Hour Construction Safety and Health Course

### **AFFILIATIONS**

AABC Commissioning Group (ACG)

### **INDUSTRY EXPERIENCE BEGINNING: 1985**

Design, operation, maintenance, and commissioning of central chiller plants, central steam plants, HVAC mechanical systems and controls, clean rooms, electrical distribution systems, life safety systems, emergency power generator and automatic power transfer systems.

### **PROJECT EXPERIENCE**

#### **Whiskey Row Hotel (Hotel Distil & Moxy), Louisville, KY**

Project Size: 192,000 SF

Scope: Comprehensive Commissioning including HVAC, DHW and Lighting Controls for a hotel that encompasses a lower level and up to 13 levels of space. Hotel Distil has 205 guest rooms, which includes meeting space, a restaurant and rooftop bar, & Moxy/Autograph Hotel has 110 guest rooms.

#### **Bartholomew County Schools Corporation – Columbus East and North High Schools**

Project Cost: \$89,000,000 / 825,000 SF (includes existing and additions)

Scope: Comprehensive Commissioning for both schools with Columbus North High School consisting of 125,000 SF of new additions and extensive renovations. The new construction includes five separate additions to the existing building. Columbus East High School includes a complete renovation of the second floor classrooms, labs and large student resource areas. A new administrative wing and ten additional classrooms, as well additions to the athletic complex of the school are a part of this project.

#### **Northpoint Training Facility – Replacement Facilities, Burgin, KY**

Project Cost: \$18,800,000.00 / 42,000 SF

Scope: The Northpoint Training Facility project includes the replacement of five buildings into two new buildings to accommodate the 1256 inmate's needs for dining, medical, education, visitation, and personal supplies.

#### **Eastern State Hospital, Lexington, KY (LEED Silver)**

Project Cost: \$129,000,000 / 323,000 SF

Scope: Comprehensive Commissioning for new construction of a mental health care facility that is a state-of-the-art facility providing specialized programs for veterans with substance abuse and mental illnesses.



## Clay Kissick, Commissioning Technician

**EDUCATION** Computer Engineering/Computer Science studies at University of Louisville

### **CERTIFICATIONS**

Certified Commissioning Technician (CxT) 226-6322, ACG  
Infrared Training Center Thermographer Level I, #172009  
OSHA 10-Hour Construction Safety and Health Course

**INDUSTRY EXPERIENCE BEGINNING:** 2014

### **PROJECT EXPERIENCE**

#### **Eastern State Hospital, Lexington, KY (LEED Silver)**

Project Cost: \$129,000,000 / 323,000 SF

Scope: Comprehensive Commissioning for new construction of a mental health care facility that is a state-of-the-art facility providing specialized programs for veterans with substance abuse and mental illnesses.

#### **University of Kentucky Football Training Center and Practice Field**

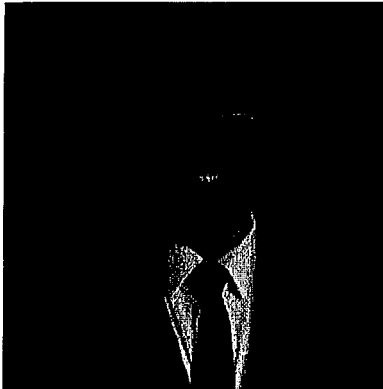
Project Cost: \$45,000,000 / 107,795 SF

Scope: Comprehensive commissioning services for a new facility that will ultimately provide the University with state-of-the-art facilities that will improve the experience of students, athletes, coaches, staff and faculty.

#### **University of Kentucky Commonwealth Stadium Expansion and Renovation**

Project Cost: \$125,000,000 / 478,646 SF

Scope: Comprehensive commissioning services for an expansion and renovation to improve the stadium's function and aesthetic appearance thus improving the overall fan experience on game day. In addition, premium spaces were created for game day and rental use throughout the year.



## Brandon Moore, Vice President

**EDUCATION** BA Accounting, Transylvania University

**CERTIFICATIONS**

Certified Commissioning Authority (CxA) #518-1662, ACG  
USGBC LEED Green Associate #10797615, LEED GA

**AFFILIATIONS**

AABC Commissioning Group (ACG)  
United States Green Building Council (USGBC)

### **INDUSTRY EXPERIENCE BEGINNING: 2008**

Brandon's involvement in the following projects includes project/LEED administration duties that entails commissioning plan/report production, document reviews, file distribution and file maintenance.

#### **Lucas Oil Stadium, Indianapolis, IN**

Project Cost: \$720,000,000 / 1.8 million SF

Scope: New construction of a special events venue. The Indianapolis Colts' stadium features 137 corporate suites, two club lounges, meeting rooms, and two exhibit halls.

#### **Sweetwater, Fort Wayne, IN (LEED Platinum)**

Project Cost: \$30,000,000 / 150,000 SF

Scope: Commissioning of HVAC, DHW, and Lighting Controls for new construction of an energy plant, warehouse area, repair areas, office area, mall areas, studios, and an auditorium to serve as the facility for a leading music retailer and wholesaler.

#### **Gateway Community and Technical College – Boone Campus Phase II (Center for Advanced Manufacturing), Florence, KY**

Project Cost: \$30,000,000 / 103,000 SF

Scope: Commissioning of HVAC, DHW, Lighting, and E-Power Systems for new construction of a facility, which houses 16 general classrooms and special high-tech laboratories equipped to teach leading-edge manufacturing process in a variety of disciplines. The center also contains an array of services that includes an assessment center and career/transfer center for students.

#### **University of Louisville – Kersey Renovation, Louisville, KY (LEED Gold)**

Project Cost: \$4,100,000 / 35,000 SF

Scope: Comprehensive Commissioning for renovation of an existing 34,000 square foot library that is being converted into an academic building that will offer state of the art teaching and research labs, a career center, and student commons.

#### **Kenton County Middle Schools – Turkey Foot Middle School, Edgewood, KY**

Project Cost: \$29,000,000 / 133,000 SF

Scope: Comprehensive commissioning for new construction of a high performance school design to accommodate 1,100 students (grades 6-8). The project included some of the following features to reduce energy consumption drastically: Natural daylight harvesting, solar tube day-lighting for interior space, rainwater harvesting, vegetated roof, and the largest solar photovoltaic system built in Kentucky. These features helped to rate the school as a Net "10" school for energy usage.





# Facility Commissioning Group

158 Burt Road • Lexington, KY 40503 • Tel. (859) 278-5552

8355 Rockville Road, Suite 36 • Indianapolis, IN.46234 • Tel. (317) 536-2618

## PROJECTED COMMITMENT/AVAILABILITY

FCG operates with a staff of over twenty commissioning professionals dedicated solely to providing commissioning services. We are managed to meet and exceed our project commitments. In addition to our in-house electrical and mechanical capabilities, FCG has a vast wealth of specialized professionals who enable us to deliver comprehensive whole building commissioning services. We are nationally recognized as leaders in the commissioning industry. For this project, Facility Commissioning Group utilizes the expertise and services of designated commissioning provider group members who possess the expertise and the manpower to handle the scope of work in an efficient and expedient manner. FCG's current workload would not affect our team's availability or workload commitment to this project. We are immediately available to perform the services within the sequence deadlines. FCG takes pride in accomplishing our work in an efficient timely manner – the success of commissioning depends on it. The workflow for this project has been entered into our planning and scheduling model and analyzed to determine that FCG has the indicated resources available to carry out the assignments requested.

Kim Kissick is an accomplished commissioning provider and will be the lead commissioning authority and point of contact for this project. Kim will have immediate availability to serve for the projects' durations as the lead CxA.

*Bullitt County Public Schools  
Bernheim Middle School Renovation  
Shepherdsville, KY*

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**Commissioning Services RFP Response**

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*2. CxA's Previous Experience*



**Facility  
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## **CxA's PREVIOUS PROJECT EXPERIENCE**

### **1. KENTON COUNTY PUBLIC SCHOOLS – FORT WRIGHT, KY**

Rob Haney, Chief Operations Officer  
Kenton County School District  
Ft. Wright, KY 41017  
859 344-1531  
[Rob.Haney@kenton.kyschools.us](mailto:Rob.Haney@kenton.kyschools.us)

#### **Scott High School Phases 1 to 4 Renovations**

The first two phases of this project included a two-story classroom addition, stadium, fieldhouse, softball field and new secure entry school entrance. Phase 3 was \$17 million of construction including new relocated science classrooms, kitchen, cafeteria and media center. Phase 4 is conducted in two phases which included renovation of classrooms in lower/upper levels, band/support spaces, auditorium and gymnasium.

These renovations encompasses replacing all HVAC, electrical, plumbing, lighting, fire protection systems, and interior finishes. FCG provided Comprehensive Commissioning services for the HVAC, HVAC controls, domestic hot water, lighting controls, low voltage (security/access control, data/comm) and electrical (power distribution/emergency power) systems.

#### **Turkey Foot Middle School**

New 133,000 SF high performance sustainable design middle school that includes 39 classrooms, choral room, technical education room, art room, media center, cafeteria, gymnasium to accommodate 1,100 students (grades 6-8) and the largest photo voltaic array in the state of Kentucky. The project includes the following features that reduce energy consumption: Natural daylight harvesting, solar tube day-lighting for interior space, rainwater harvesting, vegetated roof, and photovoltaic systems.

FCG performed commissioning services for HVAC, Domestic Hot Water, Rain Water Catchment, Electrical, Exterior Enclosure, Low-Voltage Communications Technology, Audio/Visual Wiring Systems and at the time Kentucky's largest solar photovoltaic system (407 kW PV system).

FCG has completed over 20 projects for Kenton County Schools that also include:

- Kenton County School District - Scott High School Site Improvements
- Kenton County School District - Beechgrove Elementary School
- Kenton County School District - Fort Wright Elementary School Addition & Renovation
- Kenton County School District - Hinsdale Elementary School Secure Entry Addition Phase 1
- Kenton County School District - Simon Kenton High School
- Kenton County School District - Dixie Heights High School Phases II and III
- Kenton County School District - Kenton County Middle School (Twenhofel)

## 2. CLARK COUNTY PUBLIC SCHOOLS – WINCHESTER, KENTUCKY

Paul D. Christy, Superintendent (Current Superintendent – Dustin Howard)  
Clark County Board of Education  
1600 West Lexington Ave., Winchester, KY 40391  
(859) 744-4544

### **New Clark County High School Phase I and II (George Rogers Clark)**

New 230,000 SF building to serve 1,900 students that contains standard classrooms to serve grades 9 to 12, specialized classrooms including Art, Band, Chorus, Orchestra, Agriculture, Business Education, Family & Consumer Science, Industrial Arts, JROTC, Library, Computer Classrooms, Multipurpose Rooms, an Auxiliary Gym, Kitchen/Cafeteria and Administration Offices. A 15,000 SF, 600-seat auditorium was added to the project's Base Bid.

Facility Commissioning Group performed commissioning services for the HVAC, HVAC Controls, Domestic Hot Water, Electrical, Electronic Safety and Security and Communications systems.

## 3. INDIANAPOLIS PUBLIC SCHOOLS – INDIANAPOLIS, INDIANA

Debra Kunce  
J.S. Held  
429 Pennsylvania St, Suite 304  
Indianapolis, IN 46204  
(317) 981-7257  
[dkunce@jsheld.com](mailto:dkunce@jsheld.com)

### **Indianapolis Public Schools Capital Improvements Program Phases I to III**

\$650,000,000 of bond issued in three phases over 12 years renovated, improved and added K-12 facilities in 50 Indianapolis Public Schools. These projects were commissioned as individual projects by Facility Commissioning Group (FCG) serving various project team compositions program managed by Schmidt Associates (Deb Kunce). The projects consisted of 6,500,000 SF, which included multiple school buildings that started in 2002. FCG was commissioning agent for Phase I to Phase III, with Phase III of the IPS Capital Improvements Program renovating 27 schools, providing adequate classrooms, modern media centers, access to technology, comfortable and healthy air circulation, better lighting, functioning restrooms, building safety, playgrounds, lunchrooms and compliance with the Americans with Disabilities Act. Every school in the \$245 million bond funded Phase III renovation projects pursued LEED certification. Phase III completion dates ranged from 2013 to the Summer of 2014. The majority of these projects included library space that were served by dedicated HVAC units.

Facility Commissioning Group performed comprehensive commissioning, which included HVAC, HVAC controls, domestic hot water, electrical, and lighting control systems. Todd Yates and Matt Adams led a commissioning provider group composed of FCG employees operating as interdisciplinary professionals working with multiple project teams simultaneously.



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#### 4. BOYD COUNTY PUBLIC SCHOOLS – ASHLAND, KENTUCKY

Tim Black, Facilities and Operations Staff Director (New Current director is Bob Higginbotham)  
Boyd County Board of Education  
12308 Midland Trail Road  
Ashland, KY 41102  
(606) 928-7124  
[bob.higginbotham@boyd.kyschools.us](mailto:bob.higginbotham@boyd.kyschools.us)

##### **Boyd County High School**

New construction of approximately 144,477 square feet; Boyd County High School was constructed on existing school district property with a budget of approximately \$28 million and replaced the existing school currently in operation. Design of the new high school is tailored around the needs of the students. Wings are devoted to specific academies while other areas of the building have been designed to meet the needs of the remaining programs and technology labs for various departments have been incorporated into the new building. The new Boyd County High School is one of the most technologically advanced schools in the state. FCG provided comprehensive commissioning services for the electrical systems (emergency generator and lighting controls) and mechanical systems of this new facility.

*Bullitt County Public Schools  
Bernheim Middle School Renovation  
Shepherdsville, KY*

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**Commissioning Services RFP Response**

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*3. Bid Amount*

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*Refer to RFP Bid Form*

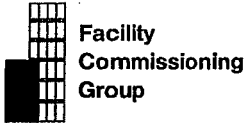
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**Bullitt County Public School  
Bernheim Middle School Renovation  
Shepherdsville, KY**

**COMMISSIONING FEE PROPOSAL**

**COMMISSIONING SERVICES (No Sampling Rates)**

1. HVAC Commissioning .....	\$ 38,490.00
2. Plumbing Commissioning .....	\$ 15,720.00
3. Electrical Commissioning.....	\$ 5,580.00

**Commissioning (Cx) Fee Total..... \$ 59,790.00**

**Reimbursable Expenses**

Due to our Kentucky office location and staffing, FCG does not anticipate reimbursable expenses for this project.

**TIMELINE FOR COMPLETION OF COMMISSIONING (Cx)**

Facility Commissioning Group is immediately available to start this project upon notification to proceed. Commissioning services will be provided in sequence with completion of installations based on close coordination with contractors and the construction schedule to provide verified and tested systems at the point of building turnover.

**PAYMENT SCHEDULE**

Facility Commissioning Group will bill on a 30-day calendar period based on the proposal breakdown relative progress, or as negotiated with Bullitt County Public Schools.

MEP Commissioning Services RFP  
Bernheim Middle School Renovation  
Bullitt County Public Schools  
Renovation | Shepherdsville, Ky.  
BG# 23-051 | ska# 2022-36



# **BULLITT COUNTY PUBLIC SCHOOLS**

Commissioning Services RFP for

**Bernheim Middle School Renovation**

Renovation | Shepherdsville, Kentucky

BG# 23-051 | ska# 2022-36

November 8, 2023

**RFP-v1**

**MEP Commissioning Services RFP  
Summary Sheet**

studio kremer architects

1231 S Shelby St, Louisville, KY 40203

TEL 502.499.1100 FAX 502.499.1101



**Bernheim Middle School Renovation  
Bullitt County Public Schools  
Renovation | Shepherdsville, Ky.  
BG# 23-051 | ska# 2022-36  
RFP-v1**

**Professional Services:** Building MEP Commissioning Services

**Project Name and Location:** Bernheim Middle School Renovation  
700 Audubon Drive,  
Shepherdsville, Kentucky 40165

**Project Description:** In general, the project involves the renovation of and addition to an existing 6th – 8th grade school for accommodation of 500 students. There are two additions to the end of the building to expand classroom space. Project gross sf is 70,158 sf. Interior renovation includes the reconfiguration of partitions at the classrooms, media center, administration suite, and gym locker rooms. MEP Work involves new HVAC systems, electrical systems (including lighting), plumbing, fire-protection, communications, and electronic safety and security systems. The building will be provided with a complete HVAC system including Outside Air Handling Units (DOAS's), Water-Source Heat Pumps (WSHP's), Exhaust Fans, Ductwork Systems, Temperature Control Systems (BAS), etc.

**RFP Attachments:** The MEP construction drawings and specification sections are included as an attachment to this RFP. The entire construction document package is linked in the email containing the RFP. Reference specification sections 230800 & 265995 for the additional scope requirements for commissioning.

**Project Construction Schedule:** The Project construction start date is June 13, 2023 and Substantial Completion is projected to be July 1, 2025. See attached Phasing Plan G0.3 and summarized construction schedule below for reference:

Construction Schedule Summary (Some dates subject to change)	
<p><u>Summer 1</u> 1) June 2023 – August 2023 a) Work Includes New Construction of Classroom Additions b) Geothermal Field c) Science Classroom d) Site Work</p> <p><u>Academic Year 1</u> 1) August 2023 - May, 2024 a) Phased Construction of Classrooms and New Heat Pump Closets</p> <p><u>Summer 2</u> 1) June 2024 - August 2024 a) Renovation Of Common Areas Included: i) Cafeteria ii) Gymnasium iii) Kitchen iv) Media Center v) Band Room vi) Art Room</p>	<p><u>Academic Year 2</u> 1) August 2024 - May 2025 a) Phased Construction of Classrooms and New Heat Pump Closets b) Gang Restroom Area a To Be Constructed - One to Remain in Use At All Times. c) Special Education Classroom And Supporting Restroom</p> <p><u>Summer 3</u> 1) June 2025 a) Switchgear And Geothermal Loop Switchover</p> <p><u>Substantial Completion</u> 1) July 2025 a) Owner To Move Furniture and Finish O.F.O.I. b) Equipment Installation Starting June 2025</p>

**Response Deadline (Proposals Due):** Proposals shall be submitted via email on or before **Nov. 24, 2023 3:00pm**, Please note, firms will be notified electronically regarding selection results.

**Proposed Lump Sum Fee:**  
The commissioning service fee proposal is \$ 59,790.00

**Proposals shall be submitted via email to:**

Danny Clemens  
Director of Facilities  
Bullitt County Schools  
[danny.clemens@bullitt.kyschools.us](mailto:danny.clemens@bullitt.kyschools.us)

Cate Noble Ward, AIA  
Architect  
Studio Kremer Architects  
[cate@studiokremer.com](mailto:cate@studiokremer.com)

## REQUEST FOR PROPOSAL

Bullitt County Public Schools is inviting pre-selected Commissioning Firms (referred to as CxA throughout this document) to submit a proposal for commissioning services for the Bernheim Middle School Renovation project. The responses to this proposal will be used to negotiate the contract with the selected firm.

## PROJECT SCOPE INFORMATION

The Owner is committed to commissioning this facility to systematically optimize the building and Mechanical, Electrical & Plumbing systems so that they operate efficiently and effectively in accordance with the owner's project requirements, and that the facility staff has adequate system documentation and training.

It is the intent of the Owner to ensure that these fundamental systems are calibrated and operating as required to deliver functional and efficient performance.

The Owner reserves the right to request clarification of any proposal after all proposals have been received. This request can be in the form of oral presentation or personal meetings.

## SYSTEMS TO BE COMMISSIONED

Systems to be commissioned will include the following:  
(Note, all systems are to be tested 100%, sampling not allowed)

1. HVAC System
  - a. Outside Air Units (DOAS)
  - b. Water Source Heat Pumps
  - c. Geothermal Loop & Associated components
  - d. Hydronic Pumps and Valves
  - e. Variable frequency Drives
  - f. Make-up Air Units
  - g. Exhaust Fans
  - h. Electric Unit Heaters
  - i. Kitchen Hoods
  - j. Kitchen Refrigeration Monitoring
  - k. Test & Balance Witness and Review
  - l. Fire Alarm system Integration to HVAC systems
  - m. DDC Controls
    - i. DDC System Integration & Point Compliance
    - ii. DDC System GUI Compliance
2. Plumbing
  - a. Domestic Hot Water System
    - i. Water Heaters & associated pumps, components.
3. Electrical
  - a. Emergency and Standby Power Systems
    - i. Generator & ATS Equipment
  - b. Lighting Controls
  - c. Power Monitoring & Metering System

d. Photovoltaic (PV) System

**SCOPE OF SERVICES**

Commissioning Agent shall provide the following services:

Construction Phase Cx Services

1. CxA will conduct commissioning meetings and distribute minutes to the commissioning team.
  - a. Conduct a Kick-off or pre (early) construction meeting where the commissioning process requirements are reviewed with the commissioning team (A/E, CM/GC, Owner).
  - b. Conduct monthly construction phase commissioning meetings. These meetings will support the commissioning process for determining schedule, checklist completion, issues log management, and functional test scheduling.
  - c. CxA will issue a Field Observation (FO) Reports after each meeting or site visit during the construction phase of the project.
2. CxA will coordinate the commissioning work with the Construction Manager to ensure that commissioning activities are included in their master schedule. Coordinate and direct commissioning activities in a logical and efficient manner using regular communications and collaboration with all necessary parties.
3. Conduct monthly site visits, concurrent with monthly commissioning meetings, to observe component and system installation during construction.
4. CxA to maintain an Action Items Log utilizing an online commissioning software for real-time review and response.
5. CxA will review and comment on construction documentation. The purpose of this activity is to understand any modifications to the Commissioning Scope of Work.
  - a. Review RFIs, ASIs, and Change Requests relevant to the equipment/systems being commissioned.
  - b. Review shop drawings and equipment submittals for information affecting the commissioning process.
  - c. Update the commissioning plan to reflect equipment and controls data from the submittals.
  - d. Review and comment on air and water test and balance reports with the Engineer of Record
  - e. Review and comment on Operations and Maintenance Manual with the Engineer of Record
6. CxA will develop project and equipment specific Pre-Functional Checklists (PFCs) based on the project documents, submittals, and lessons learned. These documents will be managed and completed by the contractors, and then accepted by the Commissioning Authority (CxA).
  - a. Verify completion of construction checklists on a periodic basis to verify the contractor's progress.
  - b. PFCs to be managed electronically.
7. CxA will develop project and equipment specific Functional Performance Test (FPT) procedures based on the project documents, submittals, and lessons learned.
  - a. FPTs will be submitted to the design and construction team for review.
  - b. These documents will be executed by the vendors, subcontractors, and the CxA. The CxA will manage and document.

- c. The CxA will defer the acceptance of the related systems and equipment on the behalf of the Owner until after the successful completion of the FPTs.
8. CxA will perform Functional Procedures during both the heating and cooling season; however, some overwriting of control values to simulate conditions may be used if appropriate.
  - a. Identify all seasonal testing required and identify in Action Items Log.
9. CxA will conduct 7-Day performance trending of all systems commissioned and include in Final Cx Report.

#### Occupancy Phase Cx Services

1. CxA will schedule and verify any deferred seasonal testing by the contractor.
2. CxA to review contractor training agendas and provide verification of system training by the contractors.
3. CxA will develop a Final Commissioning Report. This report will be made available to the Owner for issuance to the code official, as required. The final deliverable will encompass all the commissioning project documentation which includes, but is not limited to the following:
  - a. Commissioning Plan
  - b. Commissioning meeting minutes
  - c. Site Observation Reports
  - d. Completed PFCs
  - e. Completed FPTs
  - f. Verification of Air testing of water systems
4. A copy of the final report must be made available for the Engineer of Record to submit to the Authority Having Jurisdiction, upon request.
5. CxA to Return to the site ten (10) months after occupancy to review current building operation and any open issues with the facility management staff, related to the original and seasonal commissioning. Document open issues on an updated issues log and distribute to relevant parties for resolution.
6. Monitoring-Based Commissioning:
  - a. After the controls contractor has completed the installation and programming of the building automation system (BAS), the CxA shall collect trending data from the BAS. The CxA then shall monitor the performance of mechanical systems, equipment, and metering data. Approval and assistance are requested from the network administrator for gaining access to the BAS network and pulling point & trend data.
  - b. Occupancy Phase testing and trend data review will be executed through the quarterly analysis of an MBCx plan. This approach allows for increased efficiency and eliminates disruptions to the daily operations of the facility by remotely analyzing the seasonal performance of critical systems over extended periods of time without having to manually simulate varying operational conditions on-site.
  - c. This scope includes a MBCx kickoff meeting and quarterly meetings to review findings and track the implementation of recommendations and resolution of identified issues.
  - d. The CxA shall provide the MBCx scope of work through the 12-month warranty period following substantial completion.
  - e. Further, building systems shall be optimized through the use of trending to ensure that actual system performance meets or exceeds energy model predictions.

## QUALIFICATIONS

1. The CxA must have substantial and proven in-building commissioning experience, including technical and management expertise on commissioning projects of similar scope.
2. If a subcontractor is needed, provide qualifications and clearly designate in the response to this RFP.
3. It is the desire of the Owner that the CxA satisfy as many of the following conditions and requirements as possible:
  - a. Acted as the principal commissioning agent for at least three projects of comparable size, type and scope.
  - b. Commissioning activities must be performed by full time commissioning agents.
  - c. Firm must have a dedicated full-time commissioning staff of greater than 3 commissioning agents.
  - d. Extensive experience in the operation and troubleshooting of HVAC systems and energy management control systems.
  - e. Extensive field experience for all key team members, including project managers, team leaders and field engineers.
  - f. Knowledge and experience in the following:
    - i. Writing commissioning plans.
    - ii. Writing commissioning specifications
    - iii. Testing and balancing of air and water systems.
    - iv. Energy-efficient equipment design and control strategy optimization.
    - v. Monitoring and analyzing system operation using energy management control system trending and stand-alone data logging equipment.
  - g. Excellent verbal and written communication skills.
  - h. A bachelor's degree from an accredited institution in Mechanical/Electrical engineering and professional licenses and certifications.
  - i. Certification as a Certified Commissioning Professional with the Building Commissioning Association, or hold other equal certification. These certifications shall be listed in the firm's proposal.

## PROPOSAL REQUIREMENTS

Please provide the following as a minimum in the order indicated:

1. CxA's INFORMATION & TEAM
  - a. Name, address, telephone number and e-mail of one individual point of contact during RFP process.
  - b. Key leadership and employees who will likely be responsible for providing the Cx services for this project and their specific roles, including an organizational chart for the project, and projected commitment/availability of each to the project.
2. CxA's PREVIOUS EXPERIENCE
  - a. Descriptions of three to five relevant projects similar in total project cost. For each, include:
    - i. Project name, project team, project type, location and date opened
    - ii. Summary description with project size (total SF), system type(s), etc.
    - iii. Contact information of owner references
    - iv. Energy Performance Criteria
      1. On the bid form below, the prospective commissioning agent shall list and briefly describe 5 completed K- 12 School projects where the

EUI (Energy Usage Intensity) upon completion of commissioning is 25 kbtu/SF or less:

- a. Include description of HVAC system type
  - b. Include total building square footage
2. On the bid form below, the prospective commissioning agent shall briefly describe their overall approach to the commissioning of the Middle School Renovation project for Bullitt County. List any prospective challenges and outline your firm's goals for the project.

Following are five (5) K-12 school projects where EUI upon completion of commissioning was 25 Kbtu/SF or less:

A. School Name: Kenton County School District - Turkey Foot Middle School (Net Zero Ready School)

a. HVAC System Type:

Geothermal heat pumps, water-to-water heatpumps, photovoltaic array.

b. Total Building Square Footage:

139,000 SF

B. School Name: Howard County Public Schools - New Wilde Lake Middle School (Net Zero Ready School)

a. HVAC System Type:

Geothermal heat pumps, ERU's, water-to-water heat pumps, photovoltaic array.

b. Total Building Square Footage:

71,743 SF

C. School Name: Wayne County Board of Education - Ceredo-Kenova Elementary School (Kenova, WV)

a. HVAC System Type:

VRV with ERU's, water-to-water heat pumps

b. Total Building Square Footage:

83,349 SF

D. School Name: Wayne County Board of Education - Crum Elementary School (Crum, WV)

a. HVAC System Type:

Geothermal heat pumps, VRV system, water-to-water heat pumps, and ERU's

b. Total Building Square Footage:

64,656 SF

E. School Name: Perry County Board of Education - West Perry Elementary Phase 1

a. HVAC System Type:

VRV with ERU's

b. Total Building Square Footage:

76,360 SF

Briefly describe the Approach/Process your firm will take in commissioning this facility. List challenges and thoughts to overcome. List your firm's commissioning goals for the project:

FCG's goal is always functioning systems, that work efficiently and can be maintained by operating staff. To do this we take a hands on approach throughout the project using our decades of experience to avoid problems rather than fight them when they occur by leveraging technology to manage documentation and communicate quickly and efficiently. We are then able to avoid and resolve issues in a timely fashion by working towards the best interests of the owner and working with the designers, contractors and suppliers to deliver a working facility. We utilize a provider group made up of experienced mechanical/electrical engineers, controls technicians, and architects to provide the level of expertise required for large complex projects. We use Sharepoint and mobile devices to organize project documents and information between specialists in our provider group and the project team.

Challenges include tight startup and turnover schedules, strict requirements regarding turnover dates, and by treating commissioning as a process rather than an event at the end of the project we leverage the commissioning process to ensure timely testing of building systems and complete corrective action prior to occupancy.

FCG's goals for this project include fully functional commissioned systems, efficient function with low energy usage, functional front end controls, respective and productive collaboration between designer, contractor and Cx provider.

- 
3. PROPOSAL
    - a. Fee Proposal. Cost for all services associated with Commissioning as outlined above.
    - b. An estimated total of reimbursable expenses.
    - c. Statement that CxA firm will comply with all Scope of Service items listed in RFP.
  4. ADDITIONAL INFORMATION
    - a. Provide any other relevant information and/or experience.

## **SELECTION CRITERIA**

Proposers should be mindful that selection of a Commissioning Agent will be based on the following criteria:

1. Previous relevant experience: Successful and proven track record of relevant projects of similar size, scope and scale in various markets. It is important that the Commissioning Agent has the past experience working with k12 clients.



2. **Qualifications:** The individuals leading the commissioning effort shall have the requested certifications and experience mentioned in this proposal.
3. **Quality:** Quality of service working with and responsiveness to the owner and project team.
4. **Sustainability:** Demonstrated ability to commission similar projects incorporating strong principles of sustainability.
5. **Competitiveness of fees**
6. **Commissioning Approach/Process** (Amount of onsite support)
7. **Energy Performance:** Energy performance criteria of previous projects commissioned.

*Bullitt County Public Schools  
Bernheim Middle School Renovation  
Shepherdsville, KY*

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**Commissioning Services RFP Response**

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*4. Additional Information*



**Facility  
Commissioning  
Group**

[facomgrp.com](http://facomgrp.com)

158 Burt Road • Lexington, KY 40503 • Tel. (859) 278-5552  
8355 Rockville Road, Suite 36 • Indianapolis, IN 46234 • Tel. (317) 536-2618

FCG K-12 PROJECTS LIST

#	Project Name	Location
1	Bartholomew Consolidated School Corporation - Columbus East High School	Columbus, IN
2	Bartholomew Consolidated School Corporation - Columbus North High School	Columbus, IN
3	Bath County Board of Education - Bath County High School Renovations Phase II	Owingsville, KY
4	Bath County Board of Education - Bath County High School Renovations Phase II	Owingsville, KY
5	Berea Independent Schools - Berea Community School	Berea, KY
6	Bluford Unit School District - Bluford High School Addition	Bluford, IL
7	Boone County Schools - Boone County High School HVAC Upgrades	Florence, KY
8	Boone County Schools - Boone County High School MEP Upgrades	Florence, KY
9	Boone County Schools - Burlington Elementary School Geothermal Heat Pump and Glycol Charge	Burlington, KY
10	Boone County Schools - Cooper High School and Longbranch Elementary Additions	Union, KY
11	Boone County Schools - Florence Elementary School MEP Upgrades	Florence, KY
12	Boone County Schools - Larry A. Ryle High School Replacement of Temperature Controls Phase 2	Union, KY
13	Boone County Schools - Thornwilde Elementary School	Hebron, KY
14	Bourbon County District Wide HVAC Upgrades	Paris, KY
15	Boyd County Board of Education - Cannonsburg Elementary School Addition/Renovation	Ashland, KY
16	Boyd County Board of Education - Boyd County Middle School Renovation	Ashland, KY
17	Boyd County High School - Electrical Commissioning	Ashland, KY
18	Boyd County High School - Mechanical Commissioning	Ashland, KY
19	Caldwell County Board of Education - Caldwell County Elementary School	Princeton, KY
20	Calloway County High School HP Verification	Murray, KY
21	Clark County Board of Education - Conkwright Middle School - Infrared Moisture Roof Survey	Winchester, KY
22	Clark County Public Schools - Clark County Elementary School	Winchester, KY
23	Clark County Public Schools - Conkwright Middle - Renovation into Elementary School	Winchester, KY
24	Clark County Public Schools - George Rogers Clark High School	Winchester, KY
25	Clark County Public Schools - George Rogers Clark High School Phase 2: Area Technology Center	Winchester, KY
26	Corbin Independent Board of Education - New Corbin Middle School	Corbin, KY
27	Corbin Independent Schools - Corbin High School Career Center Phase 1	Corbin, KY
28	Danville Independent Schools - Toliver Elementary School Renovation/Addition	Danville, KY
29	Daviess County Public Schools Apollo High School Phase 4 Addition and Renovations	Owensboro, KY
30	Fayette County Public Schools - Coventry Oak Elementary School	Lexington, KY
31	Fayette County Public Schools - Garrett Morgan Elementary School	Lexington, KY
32	Fayette County Public Schools - New High School Air Barrier Design Review	Lexington, KY
33	Fayette County Public Schools - Stonewall Elementary School Renovation & Addition Building Envelope	Lexington, KY
34	Fayette County Public Schools - Stonewall Elementary School Window Observation Phase 2	Lexington, KY
35	Fayette County School Corporation - Connersville Middle School	Connersville, IN
36	Floyd County Schools - Floyd Central High School	Prestonsburg, KY
37	Frankfort Dual Elementary School	Frankfort, IN
38	Frankfort Independent Board of Education - F.D. Wilkinson Gymnasium Renovation	Frankfort, KY
39	Franklin County Public School - Franklin County Alternative School	Franfort, KY
40	Franklin County Public Schools - 6 Public Schools Existing Building Commissioning	Frankfort, KY
41	Franklin County Public Schools - Career and Technical Center	Franfort, KY
42	Franklin High School	Indianapolis, IN
43	Glasgow Independent Schools - Glasgow High School Addition & Renovation	Glasgow, KY
44	Graves County Schools - Farmington Elementary School HVAC Renovation	Mayfield, KY
45	Danville Independent Schools - Toliver Elementary School Renovation/Addition	Caneyville, KY
46	Green County Schools	Greensburg, KY
47	Green County Schools - Green County High School - Additions and Renovations	Greensburg, KY
48	Harlan Independent Schools - Harlan Elementary School Phase 1 Renovation	Harlan, KY
49	Harlan Independent Schools - Harlan H.S. and Harlan E.S. BECx	Harlan, KY
50	Hopkinsville Career Center - HVAC Replacement	Hopkinsville, KY
51	Howard County Public School System - New Wilde Lake Middle School BECx	Columbia, MD
52	IPS - Anna Brochhausen Elementary School #88	Indianapolis, IN
53	IPS - Arlington High School #722	Indianapolis, IN
54	IPS - Arlington Woods Elementary School #99	Indianapolis, IN
55	IPS - Arsenal Tech - Treadwell and Stuart Hall #716	Indianapolis, IN
56	IPS - Arsenal Tech W. Gym/Cafeteria #716	Indianapolis, IN
57	IPS - Arsenal Technical High School #716 (Allen Hall / Anderson Aud., Arsenal, Magazine)	Indianapolis, IN
58	IPS - Arsenal Technical High School #716 (East Gym / Media Center)	Indianapolis, IN
59	IPS - Arsenal Technical High School #716 (Morgan Hall / Lone Hall / Storage)	Indianapolis, IN

#	Project Name	Location
60	IPS - Arsenal Technical High School #716 (New Tech)	Indianapolis, IN
61	IPS - Arsenal Technical High School #716 (West Residence and Barracks)	Indianapolis, IN
62	IPS - Broad Ripple High School #717	Indianapolis, IN
63	IPS - Brookside Elementary School #54	Indianapolis, IN
64	IPS - Carl Wilde Elementary School #79	Indianapolis, IN
65	IPS - Charles Warren Fairbanks Elementary School #105	Indianapolis, IN
66	IPS - Christian Park Elementary School #82	Indianapolis, IN
67	IPS - Clarence Farrington Elementary School #61	Indianapolis, IN
68	IPS - Cold Spring School #315	Indianapolis, IN
69	IPS - Crispus Attucks Medical Magnet #518	Indianapolis, IN
70	IPS - Eleanor Skillen Elementary School #34	Indianapolis, IN
71	IPS - Eliza A. Blaker Elementary School #55	Indianapolis, IN
72	IPS - Emmerich Manual High School #715	Indianapolis, IN
73	IPS - Emmerich Manual High School #715	Indianapolis, IN
74	IPS - Ernie Pyle Elementary School #90	Indianapolis, IN
75	IPS - Floro Torrence Elementary School #83	Indianapolis, IN
76	IPS - Forest Manor Middle School #554	Indianapolis, IN
77	IPS - Francis Scott Key Middle School #103	Indianapolis, IN
78	IPS - Frederick Douglas Elementary School #19	Indianapolis, IN
79	IPS - George Buck Elementary School #94	Indianapolis, IN
80	IPS - George W. Julian Elementary School #57	Indianapolis, IN
81	IPS - George Washington Community School #521	Indianapolis, IN
82	IPS - Harshman Middle School #501	Indianapolis, IN
83	IPS - Henry W. Longfellow Elementary School #28	Indianapolis, IN
84	IPS - James A. Garfield Elementary School #31	Indianapolis, IN
85	IPS - James Russell Lowell Elementary School #51	Indianapolis, IN
86	IPS - James Whitcomb Riley Elementary School #43	Indianapolis, IN
87	IPS - John Hope Adult High School #26	Indianapolis, IN
88	IPS - Jonathan Jennings Elementary School #109	Indianapolis, IN
89	IPS - Joseph Bingham Elementary School #84	Indianapolis, IN
90	IPS - Joyce Kilmer Elementary School	Indianapolis, IN
91	IPS - Lew Wallace Elementary School #107	Indianapolis, IN
92	IPS - Margaret McFarland Middle School #112	Indianapolis, IN
93	IPS - Mary E. Nicholson Elementary School #70	Indianapolis, IN
94	IPS - Merle Sidener Elementary School #59	Indianapolis, IN
95	IPS - Northwest High School #723	Indianapolis, IN
96	IPS - Ralph Waldo Emerson Elementary School #58	Indianapolis, IN
97	IPS - Riverside Elementary School #44	Indianapolis, IN
98	IPS - Rousseau McClellan Elementary School #91	Indianapolis, IN
99	IPS - Shortridge High/Middle School #514	Indianapolis, IN
100	IPS - Shortridge Magnet HS New Gymnasium #514	Indianapolis, IN
101	IPS - Stephen Foster Elementary School #67	Indianapolis, IN
102	IPS - T.C. Howe Academy #520	Indianapolis, IN
103	IPS - Theodore Potter Elementary School #74	Indianapolis, IN
104	IPS - Thomas A. Edison Key Learning Community School #47	Indianapolis, IN
105	IPS - Thomas D. Gregg Elementary School #15	Indianapolis, IN
106	IPS - Washington Irving Elementary School #14	Indianapolis, IN
107	IPS - Wendell Phillips Elementary School #63	Indianapolis, IN
108	IPS - Willard J. Gambold Middle School #508	Indianapolis, IN
109	IPS - William A. Bell Elementary School #60	Indianapolis, IN
110	IPS - William McKinley Elementary School #39	Indianapolis, IN
111	IPS #2 Center For Inquiry	Indianapolis, IN
112	Jackson Elementary School	Ft. Campbell, KY
113	Jessamine County Schools - Nicholasville Elementary School	Nicholasville, KY
114	Jessamine County Schools - Rosenwald-Dunbar Elementary School Renovation/Addition	Nicholasville, KY
115	Kenton County School District - Beechgrove Elementary School Addition and Renovation	Independence, KY
116	Kenton County School District - District Support Operations Center	Independence, KY
117	Kenton County School District - Fort Wright Elementary School Addition & Renovation	Covington, KY
118	Kenton County School District - Hinsdale Elementary School Secure Entry Addition Phase 1	Edgewood, KY
119	Kenton County School District - Safety & Security Improvements	Edgewood, KY
120	Kenton County School District - Scott High School Add. & Ren. Phase IIA	Taylor Mill, KY

FCG K-12 PROJECTS LIST

#	Project Name	Location
121	Kenton County School District - Scott High School Phase IIB - Classroom Addition	Taylor Mill, KY
122	Kenton County School District - Scott High School Phase 3 Renovation	Taylor Mill, KY
123	Kenton County School District - Scott High School Phase 4 Renovation	Taylor Mill, KY
124	Kenton County School District - Scott High School Phase V	Taylor Mill, KY
125	Kenton County School District - Scott High School Site Improvements	Taylor Mill, KY
126	Kenton County School District - Simon Kenton High School Phase 6 Improvements	Independence, KY
127	Kenton County School District - Turkey Foot Middle School	Edgewood, KY
128	Kenton County School District - White's Tower Elementary School Addition and Renovation	Independence, KY
129	Kenton County School District-Turkeyfoot Middle School-Photovoltaic-Phase III	Edgewood, KY
130	Kenton County Schools - (5) Kenton County ES HVAC Modifications	Kenton Co., KY
131	Kenton County Schools - (5) Kenton County ES HVAC Assessment	Kenton Co., KY
132	Kenton County Schools - Beechgrove Elementary School	Independence, KY
133	Kenton County Schools - Caywood Elementary School	Crestview Hills, KY
134	Kenton County Schools - Dixie Heights High School Phase II	Crestview Hills, KY
135	Kenton County Schools - Dixie Heights High School Phase III	Crestview Hills, KY
136	Kenton County Schools - Dixie Heights High School Phase IV	Crestview Hills, KY
137	Kenton County Schools - KCMS Post-Occupancy Building Envelope Cx	Independence, KY
138	Kenton County Schools - Kenton County Middle School (Twenhofel)	Independence, KY
139	Kenton County Schools - Scott High School	Taylor Mill, KY
140	Kenton County Schools - Simon Kenton High School	Independence, KY
141	Kenton County Schools - Summit View ES - Ryland Heights ES Additions	Independence, KY
142	Kentucky School for the Blind - Howser Hall Renovations	Louisville, KY
143	Kentucky School for The Deaf - New Elementary School (Walker Hall Replacement)	Danville, KY
144	Kentucky School for the Deaf - HVAC Upgrades	Danville, KY
145	LaPorte Community School Corporation - Handley Elementary School	LaPorte, IN
146	LaPorte Community School Corporation - LaPorte Intermediate Schools on the Kesling Campus	LaPorte, IN
147	Laurel County Board of Education - Laurel County Center for Innovation	London, KY
148	Lebanon Community School Corporation - Central Elementary School	Lebanon, IN
149	Lebanon Community School Corporation - Harney Elementary School	Lebanon, IN
150	Lebanon Community School Corporation - Hattie B Stokes Elementary School	Lebanon, IN
151	Lebanon Community School Corporation - Lebanon High School	Lebanon, IN
152	Lebanon Community School Corporation - Middle School	Lebanon, IN
153	Lebanon Community School Corporation - Perry Worth Elementary School	Lebanon, IN
154	Leslie County Schools - W.B. Muncy Elementary School Renovation/Addition	Wooton, KY
155	Lewis County Schools - Lewis County High School Renovation	Vanceburg, KY
156	Lewis County Schools - Lewis County Middle School Renovation	Vanceburg, KY
157	Lewis County Schools - New Garrison Elementary School	Vanceburg, KY
158	Lexington Catholic High School - Phase 2 Addition & Renovation	Lexington, KY
159	Logan County Schools - New Area Technology Center	Russellville, KY
160	Madison County Schools - Clark Moores Middle School Renovations and Addition	Richmond, KY
161	Madison County Schools - Foley Middle School	Berea, KY
162	Mayfield Independent School District - Mayfield Middle School	Mayfield, KY
163	Mayfield Independent School District - Mayfield Middle School Phase 2	Mayfield, KY
164	McCordsville Elementary School	McCordsville, IN
165	McCracken County Public Schools - Heath Middle School Auditorium HVAC	Paducah, KY
166	McCracken County Public Schools - Heath Middle School Gymnasium HVAC	Paducah, KY
167	McCracken County Public Schools - Reidland Middle School Gymnasium HVAC	Paducah, KY
168	Meade County Board of Education - David T. Wilson Elementary Upgrades	Brandenburg, KY
169	Meade County Board of Education - Flaherty Elementary School Renovation	Brandenburg, KY
170	Meade County Schools-Brandenburg Primary School	Brandenburg, KY
171	Menifee County Board of Education - Menifee Central Elementary School	Frenchburg, KY
172	Meridian Community Unit School District - Meridian Elementary/Junior High School Addition	Mounds, IL
173	Metcalf County Elementary School Additions and Renovation- Building Envelope Cx	Edmonton, KY
174	Metropolitan Lawrence Township - Mary Castle Early Learning Cntr	Indianapolis, IN
175	Middlesboro Elementary School - Phase 2 Renovation and Addition	Middlesboro, KY
176	MSD of Washington Township - North Central High School Renovation Central Plant	Indianapolis, IN
177	Mt. Vernon Community School Corporation - Mt. Vernon Intermediate School	Mount Vernon, IN
178	Murray Independent / Calloway County Schools - New Career and Technical Center	Murray, KY
179	New Castle Community Schools - New Castle Chrysler High School	New Castle, IN
180	New Mountain View Elementary School	Greenville County, SC
181	Ohio County Board of Education - Middle/High School Misc. Additions	Hartford, KY

#	Project Name	Location
182	Owensboro Public Schools - Innovation Academy Renovations	Owensboro, KY
183	Paris Middle/High School Renovation Phase 1	Paris, KY
184	Pendleton County Board of Education Sharp Middle School HVAC Renovation	Butler, KY
185	Perry County Board of Education - West Perry Elementary School - Phase II	Hazard, KY
186	Perry County School District - Perry County Elementary School	Hazard, KY
187	Pike County Board of Education - Shelby Valley High School HVAC Replacement	Pikeville, KY
188	Plainfield High School	Plainfield, IN
189	Powell County Board of Education - Powell County Middle School Renovation	Stanton, KY
190	Robertson County School	Mt. Olivet, KY
191	Rowan County Board of Education - Clearfield Elementary School Renovation & Addition	Clearfield, KY
192	Rowan County Board of Education - Rodburn Elementary School ARP ESSER Addition and Renovation	Clearfield, KY
193	Russell County Board of Education - Russell County High School Renovation	Russell Springs, KY
194	Sayre School - Lower School	Lexington, KY
195	School City of Hammond - Hammond Middle School/High School	Hammond, IN
196	Shelby County Public Schools - Shelby County High School Renovation	Shelbyville, KY
197	Somerset Independent Schools - Hopkins Elementary School	Somerset, KY
198	Somerset Independent Schools - Somerset High School	Somerset, KY
199	Somerset Independent Schools - Somerset High School Renovation	Somerset, KY
200	Spencer County Board of Education - Spencer County Early Learning Center Phase 1	Taylorsville, KY
201	Tippecanoe School Corp. - New Klondike Middle School	West Lafayette, IN
202	Tippecanoe School Corporation - Additions and Renovations to Klondike Elementary School	West Lafayette, IN
203	Tippecanoe School Corporation - Wyandotte Elementary School	West Lafayette, IN
204	Union County Schools - Morganfield Elementary School	Morganfield, KY
205	Union County Schools - Sturgis Elementary School	Morganfield, KY
206	Union County Schools - Union County High School	Morganfield, KY
207	Union County Schools - Union County Middle School	Morganfield, KY
208	Vincennes Comm. Sch. Corp. - New Clark Middle School	Vincennes, IN
209	Warsaw Community Schools - Warsaw High School	Warsaw, IN
210	Washington County High School - Air Barrier Testing	Springfield, KY
211	Wayne County Schools - Bell Elementary ESSER III HVAC Renovation	Monticello, KY
212	Wayne County Board of Education - Ceredo-Kenova Elementary School	Kenova, WV
213	Wayne County Board of Education - Crum PK-8 School	Crum, WV
214	Wayne County Schools - Wayne County Gymnasium Building - HVAC Renovation	Monticello, KY

**FCG Projects List  
CMTA Engineer of Record**

<b>Project #</b>	<b>Project Name</b>	<b>Location</b>
1	Middlesboro Elementary School - Phase 2 Renovation and Addition	Middlesboro, KY
2	(5) Kenton County ES HVAC Assessment	Kenton Co., KY
3	Boone County Schools - Cooper High School and Longbranch Elementary Additions	Union, KY
4	Boone National Guard Center - Army Aviation Support Facility	Frankfort, KY
5	Boyd County Board of Education - Boyd County Middle School Renovation	Ashland, KY
6	Boyd County High School - Electrical Commissioning	Ashland, KY
7	Boyd County High School - Mechanical Commissioning	Ashland, KY
8	Calloway County High School HP Verification	Murray, KY
9	Casey County Hospital - Replacement Hospital	Liberty, KY
10	Churchill Downs - Starting Gate Suites	Louisville, KY
11	CMTA - New Office Building Envelope Commissioning	Lexington, KY
12	Corbin Independent Board of Education - Corbin High School Career Center Phase 1	Corbin, KY
13	Corbin Independent Board of Education - New Corbin Middle School	Corbin, KY
14	Danville Independent Schools - Tolver Elementary School Renovation/Addition	Danville, KY
15	Eastern Kentucky University - Student Recreation and Wellness Center	Richmond, KY
16	Ephraim McDowell Regional Medical Center	Danville, KY
17	Fayette County Public Schools - Garrett Morgan Elementary School	Lexington, KY
18	Fayette County Public Schools - New High School (Winchester Rd) Air Barrier Design Review	Lexington, KY
19	Floyd County Schools - Floyd Central High School	Prestonsburg, KY
20	Fort Logan Hospital	Stanford, KY
21	Hardin Memorial Hospital - Ambulatory Care Building	Bardstown, KY
22	Harrison County Hospital	Cynthiana, KY
23	Hazelwood Center - HVAC System Replacement	Louisville, KY
24	KCTCS - Bluegrass Community & Technical College Admin Building Renovation and Addition	Lexington, KY
25	KCTCS - Elizabethtown Community & Technical College Glendale On-Site Training Center	Elizabethtown, KY
26	KCTCS BCTC - Newtown Science Education Center Phase 5 Classroom & Office Fit-Up	Lexington, KY
27	KCTCS Bluegrass Community & Technical College - Danville Advanced Manufacturing Center	Danville, KY
28	KCTCS Bluegrass Community & Technical College - Upgrade Newtown Campus Phase 2 - Renovation and Expansion of Laundry Building	Lexington, KY
29	Kenton County School District - Beechgrove Elementary School Addition and Renovation	Independence, KY
30	Kenton County School District - Fort Wright Elementary School Addition & Renovation	Covington, KY
31	Kenton County School District - Hinsdale Elementary School Secure Entry Addition Phase 1	Edgewood, KY
32	Kenton County School District - Piner Elementary School Addition and Renovation	Morning View, KY
33	Kenton County School District - Ryland Heights Elementary School Addition and Renovation	Ryland Heights, KY
34	Kenton County School District - Safety & Security Improvements	Edgewood, KY
35	Kenton County School District - Scott High School Add. & Ren. Phase IIA	Taylor Mill, KY
36	Kenton County School District - Scott High School Phase 3 Renovation	Taylor Mill, KY
37	Kenton County School District - Scott High School Phase 4 Renovation	Taylor Mill, KY
38	Kenton County School District - Scott High School Phase IIB - Classroom Addition	Taylor Mill, KY
39	Kenton County School District - Turkeyfoot Middle School-Photovoltaic-Phase III	Edgewood, KY
40	Kenton County School District - White's Tower Elementary School Addition and Renovation	Independence, KY
41	Kenton County Schools District - Beechgrove Elementary School	Independence, KY
42	Kenton County Schools District - Caywood Elementary School	Crestview Hills, KY
43	Kenton County Schools District - Dixie Heights High School Phase II	Crestview Hills, KY
44	Kenton County Schools District - Dixie Heights High School Phase III	Crestview Hills, KY
45	Kenton County Schools District - Dixie Heights High School Phase IV	Crestview Hills, KY
46	Kenton County Schools District - Middle School (Twenhofel)	Independence, KY
47	Kenton County Schools District - Scott High School Phase 5	Taylor Mill, KY
48	Kenton County Schools District - Scott High School Site Improvements	Taylor Mill, KY

**FCG Projects List  
CMTA Engineer of Record**

<b>Project #</b>	<b>Project Name</b>	<b>Location</b>
49	<b>Kenton County Schools District - Simon Kenton High School</b>	Independence, KY
50	<b>Kenton County Schools District - Simon Kenton High School Phase 6 Improvements</b>	Independence, KY
51	Kentucky Center for the Arts - Air Handler Unit Replacement	Louisville, KY
52	Kentucky Exposition Center - HVAC Renovation	Louisville, KY
53	Kentucky State Police - Demolition and Construction of Training Academy Building	Frankfort, KY
54	Kentucky State University - Old Young Hall Dormitory	Frankfort, KY
55	Kentucky State University - Repair Boilers & Aging Distribution Lines	Frankfort, KY
56	Lake Cumberland Regional Hospital	Somerset, KY
57	Lake Cumberland Regional Hospital AHU#4	Somerset, KY
58	Major Hospital - Replacement Hospital BECx Design Review	Shelbyville, IN
59	Med Center Health - The Medical Center - Hybrid OR Expansion and Renovation	Bowling Green, KY
60	Medical Center at Bowling Green - Parking Garage and Medical Office/Multipurpose Building	Bowling Green, KY
61	<b>Menifee County Board of Education - Menifee Central Elementary School</b>	Frenchburg, KY
62	Morehead State University - Student Services Facility	Morehead, KY
63	Northern Kentucky University - New Residence Hall	Highland Heights, KY
64	<b>Owensboro Public Schools - Innovation Academy Renovations</b>	Owensboro, KY
65	<b>Powell County Board of Education - Powell County Middle School Renovation</b>	Stanton, KY
66	<b>Rowan County Board of Education - Rodburn Elementary School ARP ESSER Addition and Renovation</b>	Morehead, KY
67	<b>Russell County Board of Education - Russell County High School Renovation</b>	Russell Springs, KY
68	Saints Mary and Elizabeth Hospital - Addition and Renovation General Building Package #3	Louisville, KY
69	Shriners Hospital for Children - Lexington ASC and Clinic	Lexington, KY
70	St. Elizabeth Healthcare - Cancer Center, C Tower, and Parking Structure	Edgewood, KY
71	UK - Expand/Renovate Student Center	Lexington, KY
72	UK - Renovate Outpatient Clinic in Kentucky Clinic	Lexington, KY
73	UKMC - Emergency Department Renovation	Lexington, KY
74	University of Kentucky - Agricultural Science Center North HVAC Renovation	Lexington, KY
75	University of Kentucky - Improve Student Center Space 1 - Harris Ballroom	Lexington, KY
76	University of Kentucky - Improve Student Center Space 2 - Dining Facilities Expansion	Lexington, KY
77	University of Louisville - Student Activities Center Renovation	Louisville, KY
78	<b>Wayne County Area Technology Center</b>	Monticello, KY
79	<b>Whitley County Middle School HVAC Replacement Upgrades</b>	Williamsburg, KY
80	<b>Williamsburg Independent School District - Williamsburg Independent Schools Renovation</b>	Williamsburg, KY
81	Western Kentucky University - Commons at Helm Library	Bowling Green, KY
82	Western Kentucky University - Ogden College Hall	Bowling Green, KY
83	Western Kentucky University - Thompson Complex Center Wing	Bowling Green, KY
84	<b>Woodford County Public Schools - Northside Elementary School Renovation</b>	Versailles, KY
85	<b>Woodford County Public Schools - Southside Elementary School Renovation</b>	Versailles, KY
86	<b>Woodford County Public Schools - Woodford County High School Phase 1</b>	Versailles, KY

50+ Total K-12 School Projects Commissioned by FCG with CMTA As Engineer of Record