



COLLECTIVE KNOWLEDGE FOR AN INTERCONNECTED WORLD

**State of West Virginia
Armed Forces Reserve Centers**

RFQ DEFK11023

Commissioning Services

Submitted By:

John McFarland, PE, CCP, CEM, LEED AP, LEED Faculty™
WorkingBuildings
4501 Circle 75 Parkway, Suite B-2200
Atlanta, GA 30339
678-990-8001 tel.
jkmcfarland@workingbuildings.com

January 19, 2011

RECEIVED
2011 JAN 19 AM 10:02
WW PURCHASING
DMS ON

Corporate Headquarters
Atlanta, Georgia
International Offices
London
São Paulo

Regional Offices
Albuquerque
Austin
Chicago
Fort Lauderdale

Houston
Los Angeles
New Orleans
New York

Trenton, NJ
Winston-Salem, NC
Washington DC



January 18, 2011

Corporate Headquarters
4601 Circle 76 Parkway
Suite B2200
Atlanta, Georgia 30339
678.990.8001 Tel.
678.990.5399 Fax

www.workingbuildings.com

Regional Offices
Albuquerque
Austin
Chicago
Dallas
Fort Lauderdale
Houston
Los Angeles
New Orleans
New York
Winston-Salem, N.C.

International
London
São Paulo

Department of Administration
Purchasing Division
Building 15
2019 Washington Street, East
Charleston, WV 25305-0130

Re: WorkingBuildings' Commissioning Qualifications, RFQ DEFK11023

Members of the Selection Committee:

We are pleased to submit our qualifications for commissioning services, outlining our company's capabilities relative to the West Virginia Armed Forces Reserve Centers. WorkingBuildings is dedicated to providing you a sustainable building that works, regardless of its complexity. Our processes provide complete quality assurance through the design, construction, delivery and occupancy phases of your project.

WorkingBuildings has commissioned more than 140 million square feet of facility space with a collective value of \$14 billion. Of these, nearly 150 are LEED projects ranging from Registered to Platinum and totaling more than 50 million square feet.

We are dedicated to defining the commissioning industry and setting the benchmarks for professional excellence. WorkingBuildings is a leader in high-performance commissioning, working to define the issues and operational parameters specific to military facilities. WorkingBuildings has long been a part of defining commissioning, working with such entities as Department of Energy, General Services Administration, Department of Defense, Centers for Disease Control and Prevention, Fort Bayard and Fort Gordon.

We appreciate the opportunity to present our proposal and look forward to further discussions concerning this exciting project. If you have any questions, please feel free to contact me at 678-990-8001.

Sincerely,

John McFarland, PE, CCP, CEM, LEED AP, LEED Faculty™
Director of Operations

www.workingbuildings.com
jkmcfarland@workingbuildings.com



Table of Contents

RFQ Cover Sheet/Addendum	1
Purchasing Affidavit	12
Corporate/Personnel Experience	13
Project Examples	15
Key Personnel	26
Project Management Plan	36
Subcontractors	43
Quality Control	44
Project Cost Control.....	47



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
DEFK11023

PAGE
1

ADDRESS FOR CORRESPONDENCE AND FABRICATION OF
TARA LYLE
304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE

WorkingBuildings
4501 Circle 75 Pkwy, Suite B-2200
Atlanta, GA 30339

DIV ENGINEERING & FACILITIES ARMORY BOARD SECTION

1707 COONSKIN DRIVE
CHARLESTON, WV
25311-1099 304-341-6368

DATE PRINTED		TERMS OF SALE		SHIP VIA		F.O.B.		FREIGHT TERMS	
12/02/2010									
BID OPENING DATE:		01/31/2011		BID OPENING TIME		01:30PM			
LINE	QUANTITY	UOP	UNIT NO	ITEM NUMBER	UNIT PRICE	AMOUNT			
0001	1	JB		EOI					
				EXPRESSION OF INTERESTS (EOI)					
				3 RESERVE CTRS IN ELKINS, FAIRMONT AND SPENCER-RIPLEY					
				EXPRESSION OF INTERESTS (EOI)					
				THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, WV ARMY NATIONAL GUARD, IS SOLICITING EXPRESSIONS OF INTEREST TO PROVIDE ARCHITECTURAL AND ENGINEERING SERVICES FOR THREE (3) WV ARMY NATIONAL GUARD ARMED FORCES RESERVE CENTERS LOCATED IN THE VICINITY OF ELKINS, SPENCER-RIPLEY AND FAIRMONT, WEST VIRGINIA, AS DEFINED PER THE ATTACHED.					
				TECHNICAL QUESTIONS CONCERNING THIS SOLICITATION MUST BE SUBMITTED IN WRITING TO TARA LYLE VIA MAIL AT THE ADDRESS SHOWN IN THE BODY OF THIS EOI, VIA FAX AT 304-558-4115, OR VIA E-MAIL AT TARA.L.LYLE@WV.GOV.					
				DEADLINE FOR ALL TECHNICAL QUESTIONS IS 12/15/2010 AT THE CLOSE OF BUSINESS. ANY TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY FORMAL ADDENDUM ISSUED BY THE PURCHASING DIVISION AFTER THE DEADLINE HAS					
SEE REVERSE SIDE FOR TERMS AND CONDITIONS									
SIGNATURE				TELEPHONE			DATE		
TITLE		FEIN		1			ADDRESS CHANGES TO BE NOTED ABOVE		

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
DEFK11023

PAGE
2

ADDRESS CORRESPONDENCE TO ATTENTION
TARA LYLE
304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE

WorkingBuildings

4501 Circle 75 Pkwy, Suite B-2200

Atlanta, GA 30339

DIV ENGINEERING & FACILITIES
ARMORY BOARD SECTION

1707 COONSKIN DRIVE

CHARLESTON, WV

25311-1099 304-341-6368

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS		
12/02/2010						
BID OPENING DATE: 01/31/2011		BID OPENING TIME 01:30PM				
LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
LAPSED.						
CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICE SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.						
BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.						
NOTICE						
A SIGNED BID MUST BE SUBMITTED TO:						
DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130						
PLEASE NOTE: PLEASE PROVIDE TWO (2) ORIGINALS IN A THREE-RING BINDER PLUS ONE (1) COPY ON A CD IN PDF FORMAT IS PREFERRED.						
THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:						
SEALED BID						
SEE REVERSE SIDE FOR TERMS AND CONDITIONS						
NATURE		TELEPHONE		DATE		
TITLE		FAX		ADDRESS CHANGES TO BE NOTED ABOVE		

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
DEFK11023

PAGE
3

ADDRESS CORRESPONDENCE TO ATTENTION OF
TARA LYLE
304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE

WorkingBuildings

4501 Circle 75 Pkwy, Suite B-2200

Atlanta, GA 30339

DIV ENGINEERING & FACILITIES
ARMORY BOARD SECTION

1707 COONSKIN DRIVE

CHARLESTON, WV

25311-1099 304-341-6368

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
12/02/2010				

BID OPENING DATE: 01/31/2011

BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	QTY NO	ITEM NUMBER	UNIT PRICE	AMOUNT
BUYER:-----TARA LYLE-FILE 32-----						
RFQ. NO.:-----DEFK11023-----						
BID OPENING DATE:-----01/12/2011-----						
BID OPENING TIME:-----1:30 PM-----						
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:						
FAX 678-990-5399-----						
CONTACT PERSON (PLEASE PRINT CLEARLY):						
John McFarland, PE, CCP, CEM, LEED AP, LEED Faculty						
Director of Operations						
***** THIS IS THE END OF RFQ DEFK11023 ***** TOTAL:						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FBN	3

ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

DEFK11023

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
TARA LYLE
304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE

WorkingBuildings
4501 Circle 75 Pkwy, Suite B-2200
Atlanta, GA 30339

DIV ENGINEERING & FACILITIES
ARMORY BOARD SECTION

1707 COONSKIN DRIVE
CHARLESTON, WV
25311-1099 304-341-6368

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS		
12/03/2010						
BID OPENING DATE: 01/12/2011		BID OPENING TIME 01:30PM				
LINE	QUANTITY	UOP	QTY NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO. 1						
1. THE MOVE THE BID OPENING DATE FROM 01/31/2011 TO 01/12/2011.						
2. ADDENDUM ACKNOWLEDGEMENT IS ATTACHED. THIS DOCUMENT SHOULD BE SIGNED AND RETURNED WITH YOUR BID. FAILURE TO SIGN AND RETURN MAY RESULT IN DISQUALIFICATION OF YOUR BID.						
EXHIBIT 10						
REQUISITION NO.: DEFK11023						
ADDENDUM ACKNOWLEDGEMENT						
I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.						
ADDENDUM NO. S:						
NO. 1 .. X						
NO. 2 .. X						
NO. 3						
NO. 4						
NO. 5						
I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF TH						
SEE REVERSE SIDE FOR TERMS AND CONDITIONS						
NATURE		TELEPHONE		DATE		
FILE		PEIN		ADDRESS CHANGES TO BE NOTED ABOVE		

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
DEPK11023

PAGE
2

ADDRESS OF CORRESPONDENCE FOR INFORMATION ONLY
TARA LYLE
304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE

WorkingBuildings
4501 Circle 75 Pkwy, Suite B-2200
Atlanta, GA 30339

DIV ENGINEERING & FACILITIES
ARMORY BOARD SECTION

1707 COONSKIN DRIVE
CHARLESTON, WV
25311-1099 304-341-6368

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS		
12/03/2010						
BID OPENING DATE: 01/12/2011		BID OPENING TIME 01:30PM				
LINE	QUANTITY	UOP	QTY NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.</p> <p>VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.</p> <p>..... SIGNATURE WorkingBuildings COMPANY January 18, 2011 DATE</p> <p>NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.</p> <p>REV. 09/21/2009 END OF ADDENDUM NO. 1</p>						
0001	1	JB		BOI		
3 RESERVE CTRS IN ELKINS, FAIRMONT AND SPENCER-RIPLEY						
SEE REVERSE SIDE FOR TERMS AND CONDITIONS						
NATURE		TELEPHONE		DATE		
FAX		FAX		ADDRESS CHANGES TO BE NOTED ABOVE		

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



Request for Quotation

88886162941017432

DEFK11023

PAGE

3

[illegible]

TARA LYLE

304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE

WorkingBuildings

4501 Circle 75 Pkwy, Suite B-2200

Atlanta, GA 30339

**DIV ENGINEERING & FACILITIES
ARMORY BOARD SECTION**

1707 COONSKIN DRIVE

CHARLESTON, WV

25311-1099 304-341-6368

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS		
12/03/2010						
BID OPENING DATE: 01/12/2011		BID OPENING TIME 01:30PM				
LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
***** THIS IS THE END OF RFQ DEFK11023 ***** TOTAL:						
SEE REVERSE SIDE FOR TERMS AND CONDITIONS						
SIGNATURE				TELEPHONE		DATE
NAME		FIRM		ADDRESS CHANGES TO BE NOTED ABOVE		



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

DEFK11023

1

TARA LYLE
304-558-2544

RFQ COPY
TYPE NAME/ADDRESS HERE

WorkingBuildings
4501 Circle 75 Pkwy, Suite B-2200
Atlanta, GA 30339

DIV ENGINEERING & FACILITIES
ARMORY BOARD SECTION

1707 COONSKIN DRIVE
CHARLESTON, WV
25311-1099 304-341-6368

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOR	REMARKS
01/07/2011				
BID OPENING DATE: 01/19/2011		BID OPENING TIME 01:30PM		
LINE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
ADDENDUM NO. 2				
1. QUESTIONS AND ANSWERS ARE ATTACHED.				
2. TO MOVE THE BID OPENING DATE FROM 01/12/2011 TO 01/19/2011.				
3. ADDENDUM ACKNOWLEDGEMENT IS ATTACHED. THIS DOCUMENT SHOULD BE SIGNED AND RETURNED WITH YOUR BID. FAILURE TO SIGN AND RETURN MAY RESULT IN DISQUALIFICATION OF YOUR BID.				
EXHIBIT 10				
REQUISITION NO.: DEFK11023				
ADDENDUM ACKNOWLEDGEMENT				
I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.				
ADDENDUM NO.'S:				
NO. 1 X				
NO. 2 X				
NO. 3				
NO. 4				
NO. 5				
I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF TH				
SEE REVERSE SIDE FOR TERMS AND CONDITIONS				
SIGNATURE		TELEPHONE		DATE
ADDRESS CHANGES TO BE NOTED ABOVE				

JAN 18 2011 1:44PM WV DIV OF PURCH
NO. 0786 F. 2
NG TO RFQ, INSERT NAME AND ADDR



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

DEFK11023

2

TARA LYLE
304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE

WorkingBuildings

4501 Circle 75 Pkwy, Suite B-2200
Atlanta, GA 30339

DIV ENGINEERING & FACILITIES
ARMORY BOARD SECTION

1707 COONSKIN DRIVE
CHARLESTON, WV
25311-1099 304-341-6368

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOR	SHIPPING TERMS		
01/07/2011						
BID OPENING DATE:	01/19/2011		BID OPENING TIME	01:30PM		
LINE	QTY	QUANTITY	UNIT	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS. VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.</p> <p>..... SIGNATURE WorkingBuildings COMPANY January 18, 2011 DATE</p> <p>NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.</p> <p>REV. 09/21/2009</p> <p>END OF ADDENDUM NO. 2</p>						
0001	JB	BOI				
1						
3	RESERVE CTRS IN	ELKINS, FAIRMONT AND	SPENCER-RIPLEY			
SEE REVERSE SIDE FOR TERMS AND CONDITIONS						
NATURE		TELEPHONE		DATE		
LE		FEN		ADDRESS CHANGES TO BE NOTED ABOVE		

NO. 07862-3
VIRGINIA REQUEST FOR QUOTATION TO RFP, INSERT NAME AND ADDRESS
JAN. 8. 2011. 1:44PM
WV DIV OF PURCHASING

Addendum #1 Responses & Clarifications

1. Please clarify if the intent of the RFP is to select one vendor for all three projects to be commissioned, or if the projects may be awarded to multiple vendors.
 1. One(1) vendor will be selected and subsequently awarded one(1) Contract for the Commissioning of all three(3) projects.
2. Please clarify per paragraph 1.1 if only architectural/engineering firms can submit a proposal or if a CM firm which provides commissioning services can submit a proposal as well.
 2. Proposals may be submitted by CM firms.
3. Are any minimum requirements for MBE/WBE participation to be included as part of a proposed team?
 3. While there are no minimum requirements in that regard, we encourage the participation of all qualified MBE/WBE businesses in the proposal submission process.
4. Will the projects pursue a LEED certification? If so, what version of LEED (i.e. 2.2 or 3.0)
 4. LEED Silver 2.2
5. Paragraph 1.7 states that the proposal responses "shall be prepared simply and economically." As such, is there a fixed limitation on the number of pages that can be submitted beyond the two page limit per resume?
 5. All potential vendors are encouraged to keep resume's under the two page limit.
6. Page 6 of the BOI notes "some optional service should include the following:" Please clarify if we are to include any other services other than that of an on-site CM person.
 6. At present the WVARNG has no intantion to engage CEI services. However, if those services are deemed to be needed, and funding becomes available, we may engage CEI services at a later date.
7. Please clarify that a price proposal is not required at this time.
 7. Cost negotiations are performed at a later date per WV Code 5-G.
8. Have commissioning specifications been included in the project bid documents?
 8. Yes.
9. What are the dates for substantial completion for each of the buildings?
 9. Ripley AFRC: 15 September 2011
Elkins AFRC: 10 September 2011
Fairmont AFRC: 01 September 2011
10. Please provide names of the design team and contractors for each building.
 10. Ripley AFRC: A/E = ZMM, Inc. // GC = Neighborgall Construction Co.
Elkins AFRC: A/E = E.T. Boggess Architects // GC = The March-Westin Co.
Fairmont AFRC: A/E = Omni Associates // GC = TEDCO, Inc.
11. At the end of the commissioning process (Acceptance Phase), is the Owner expecting ALL systems to have successfully passed functional performance testing procedures for all systems referenced?
 11. Yes.

12. Are construction schedules available for all projects? If so, can we get a copy of these?

12. Yes. They will be made available to the selected firm.

13. Who is the Control Manufacturer?

13. Different for all 3 projects; typically Johnson Controls.

14. Bid opening date on page 1 of the EOI is noted as January 31, 2011, but page 3 notes January 12, 2011.

14. Revised bid opening date: 19 January 2011 @ 1:30pm.

15. Is there a chance that the opening date will be extended.

15. Yes, see Q&A #14 above.

16. Page 2 makes references to sealed and signed bids. Page 6 item 1.14 notes "No Price or Fee" is requested. Some may assume by the reference to sealed bid a quote is required. Please clarify.

16. No price/cost proposal is required, but your EOI response shall be signed & sealed, and is due on the date & time stated in Q&A #14.

17. The RFQ notes three reserve centers in Elkins, Fairmont, and Spencer-Ripley. Do you require one response for each, or will one response cover all three areas?

17. One response addressing all three locations.

18. I am requesting clarification on the optional CEI services. Is it expected that each project is to have one dedicated full time person to that specific project or are you looking for one person to provide the CEI services for all the projects?

18. Please refer to Q&A #6.

19. Could we get an estimated completion date for the construction phases of these projects?

19. Please refer to Q&A #9.

20. Finally, are we expected to provide closeout services with this CEI service?

20. Closeout services shall be in accordance with the commissioning specs.

21. Reference is made to paragraph 3.3 of the Expression of Interest, regarding Additional Proposed Services. Are these additional services to be provided only as associated with the commissioning services for the building systems described in paragraph 3.3, or are these services to be provided as routine or full-time resident construction inspection/observation for all other elements of the construction of these facilities?

21. If implemented, routine construction administration services shall be provided, but ONLY if a need for these services is identified, justified, and the necessary funding is secured. (Please refer to Q&A #6.)

22. Is there a master plan for each of the centers?

22. Yes.

23. Are there drawings showing existing infrastructure and utilities?

23. Yes.

24. Are there drawings for the work that has been done to date at each center?

24. No. As-built drawings are submitted upon completion of the Project by the Contractor.

25. Is there a construction budget for each of the centers?

25. *Yes, but total budget is not applicable.*

26. Is there a detail scope of services required for these projects?

26. *Yes.*

27. Are there photographs available to view the sites on-line or that can be e-mailed?

27. *No.*

28. If there are no photographs, can we schedule a site visit to each site to prepare our proposal?

28. *Yes. Will have to be coordinated through the WVARNG, CFMO, by 17 January 2011 @ 3:00pm.*

29. Do test borings have to be done or are there reports for borings that have already been done?

29. *No. Test borings are not applicable for this EOI submission.*

30. Specifically, what is your agency looking for us to submit? Are you looking for a qualifications package or a detailed technical and cost proposal?

30. *No cost proposal will be submitted (see Q&A #7); Submissions shall be in accordance with WV Code 5-G.*

31. Is each site to be submitted separately or as one package?

31. *One package.*

32. Are there requirements for disadvantaged business enterprise, SBA a(8) business, or service disabled veteran business participation?

32. *No, but all such types of businesses are encouraged to participate in the proposal submission process.*

NOTE: No Additional Questions Will Be Accepted Or Acknowledged



Corporate/Personnel Experience

WorkingBuildings is a professional services firm specializing in commissioning and energy optimization services. As a third-party provider, we are dedicated to providing the Owner a building that works, regardless of its complexity. Our staff and project experience have been developed during the past 10 years working as a leader in the commissioning sector. Our core service offerings include commissioning, LEED® and sustainability consulting, energy audits and evaluation methods, standard operating procedures, security, risk/threat mitigation, laboratory audits, and CxAlloy™ quality management software.

WorkingBuildings has commissioned more than 140 million square feet of facility space in 700+ projects with a collective value of \$14 billion. Of these, nearly 150 are LEED projects ranging from Registered to Platinum and totaling more than 50 million square feet. We are also closely involved with the EPA's ENERGY STAR program.

We are a leader in commissioning, working to define the issues and operational parameters affecting sustainability, energy efficiency and operations. WorkingBuildings has long been a part of defining commissioning guidelines. Our President, Michael L. Weiss, Ph.D. ABD, HCCP, served as chair of the General Services Administration's Commissioning Review Team to write the *Whole Building Design Guide* setting the standards of commissioning for all GSA properties. Michael also wrote the commissioning guidelines for Dell's worldwide facilities and recently completed writing the sustainability and commissioning guidelines for the United States Air Force.

Industry Leadership

WorkingBuildings has maintained close ties to professional groups that have shaped the commissioning and sustainability industry as we know it today. Michael L. Weiss was a founding member and past president for four years for the Building Commissioning Association (BCA). As president, Michael helped write the Certified Commissioning Professional exam. Additionally, Michael is a voting member of the policy and code development board of New Buildings Institute.

Principal John McFarland, PE, CCP, CEM, LEED AP BD&C, works closely with USGBC as a member of LEED Faculty™ and serves as Vice-Chair of the Indoor Environmental Quality Technical Advisory Group. Additionally, John serves as Vice-Chair of the ASHRAE SSPC 62.1 Committee charged with maintaining ASHRAE Standard 62.1, *Ventilation for Acceptable Indoor Air Quality*.

It is this leadership and expertise in sustainability that drives our team to stay ahead of industry innovations and changes.

Experienced Staff

Our in-house staff is fully qualified to provide the services required under your solicitation. WorkingBuildings promotes and requires our staff to pursue professional certifications and industry-related education. The WorkingBuildings staff includes full-time professionals, engineers, and trades people who support our sustainable design, commissioning and testing services. Our staff boasts the following certifications and professional registrations:

- Professional Engineer
- Registered Architect
- Certified Energy Manager
- LEED Accredited Professional
- Certified Commissioning Authority
- Qualified Commissioning Provider
- Certified Commissioning Professional
- Certified Building Commissioning Professional



WorkingBuildings commissioning authorities' diverse backgrounds and training provide Owners with the most comprehensive list of services and expertise. Among other skills, our team members have:

- Experience providing commissioning on a wide variety of building types, including office buildings, institutional, laboratory, and government facilities
- Experience in the design, construction and operations of a wide variety of building types
- Experience with a variety of building automation systems
- Experience in the operation and troubleshooting of HVAC systems, energy management control systems and security systems
- Experience with laboratory, clean room, hoods and pressurization systems
- Knowledge of test and balance of both air and water systems
- Experience with electrical feeders, distribution, and grounding, emergency power generators and automatic transfer switching, sensor lighting controls, daylight dimming controls, and uninterruptible power supply systems
- Experience with life safety systems, including fire alarms, egress pressurization, and fire protection
- Experience with specialty systems, including equipment sound control systems, data and communication, paging, security, vertical transport, medical gas, building envelope, and process instrumentation and controls
- Knowledge of building operation and maintenance and O&M training

Office Locations

From our origins as a local A/E firm, WorkingBuildings has continually responded to the needs of the building owners and the industry. Today WorkingBuildings has completed projects throughout the world. Office locations include our corporate headquarters in Atlanta and regional and project-based offices across the country and internationally.

WorkingBuildings, LLC 4501 Circle 75 Parkway Suite B-2200 Atlanta, GA 30339 Phone: 00+1-678-990-8001 Fax: 00+1-678-990-5399 Contact: Tony Martin, PE, CCP, CxA, CEM, LEED AP Project Manager aemartin@workingbuildings.com	Albuquerque Austin Chicago Fort Lauderdale* Houston Los Angeles* New Orleans New York Trenton, NJ Washington, DC Winston-Salem, N.C. *satellite office	London São Paulo
---	--	----------------------------



Project Examples

WorkingBuildings has provided commissioning services for more than ten years. We are highly experienced in the field with backgrounds in mechanical design, construction, O&M, owner's representative, TAB, and controls. We understand your goals and how to take the most cost-effective route to energy savings.

On the following pages, we have provided descriptions of some of the projects we have worked on with requirements similar to yours.



Fort Gordon

US Army Corps of Engineers

Fort Gordon, Georgia
Status: Ongoing
LEED Status: Registered
Delivery Method: Design/Build
Size: 45,405 SF
Cost: \$6,250,000

Services

Commissioning

- Electrical
- HVAC

LEED Consulting

Equipment

Air Handling Unit
Chilled Water System
Heating Hot Water
Occupancy Sensors
Photocell & Emergency Lighting
Energy Recovery Systems

Facility Features

6 Buildings including Battalion HQ and Brigade HQ
4 Barracks facilities
Dining hall

Team Member Responsibilities

John McFarland, PE, CCP, CEM, LEED AP -
Project Executive
Ed Hunda, PE, QCP, CxA, CEM, LEED AP -
Project Manager
Trevor Powers, PE, CCP, CEM, LEED AP -
Mechanical CxA
Leslie Adebayo, LEED AP - LEED Consultant

Description

WorkingBuildings is providing HVAC commissioning for three barracks, Battalion Headquarters, Brigade Headquarters and DFAC. The six projects will each have documents tailored to their specific systems and unique mechanical characteristics. The project has a goal of LEED Gold.

Owner

Kosha K. Jones
U.S Army Corp of Engineers
Savannah District
100 West Oglethorpe Avenue
Savannah, GA 31401
912-652-5108 tel.
kosha.k.jones@sass02.us

Owner

Lionel Locke
Tetra Tech
PO Box 7750
414 Barnes Avenue
Fort Gordon, GA 30905
706-798-8942 tel.
706-231-3981 fax
lionel.locke@tetratech.com

Owner

Lionel Locke
Tetra Tech
PO Box 7750
414 Barnes Avenue
Fort Gordon, GA 30905
706-798-8942 tel.
706-231-3981 fax
lionel.locke@tetratech.com



Silver City Medical Center

at Fort Bayard

Albuquerque, New Mexico

Status: Ongoing

LEED Status: Registered

Delivery Method: Design/Bid/Build

Size: 135,000 SF

Cost: \$48,000,000

Period of Performance: 5/2009 - Ongoing



Services

Commissioning

- Mechanical
- Electrical
- Plumbing
- HVAC

Indoor Air Quality

Equipment

Variable Air Volume Air Handling Units

VAV Terminal Units

Boiler Plant

Heating Water Lead/Lag Pumps

Diesel Engine Emergency Power

Exhaust Fans/Ductwork

Fan Coil Split Systems

Building Automation System

Facility Features

81 Skilled Nursing Beds

20 Chemical Dependency Beds

Themed Healing Garden Plazas

Team Member Responsibilities

John McFarland, PE, CCP, CEM, LEED AP -
Project Executive

Marvin Roybal, PE, LEED AP - Project Manager

Craig Spikes - Controls & TAB Specialist

Ray Sanchez - Electrical CxA

Description

The Fort Bayard Medical Center includes: administration, resident rooms, pharmacy, chemical dependency, rehabilitation, Alzheimer nursing care and outpatient diagnostic and specialty care clinic.

Owner

Kevin Robinson

Grant County

State of New Mexico

P.O. Box 009

Silver City, NM 88062

575-574-7677 tel.

kevin@method-arch.com

General Contractor

Philip Ternorio Jaynes

Jaynes Corporation

2906 Broadway NE

Albuquerque, NM 87107

505-239-7701 tel.

505-345-8598 fax

philipjt@jaynescorp.com

Architect

John Laur

Dekker Perich Sabatini

7601 Jefferson NE

Suite 100

Albuquerque, NM 87109

505-761-9700 tel.

505-761-4222 fax

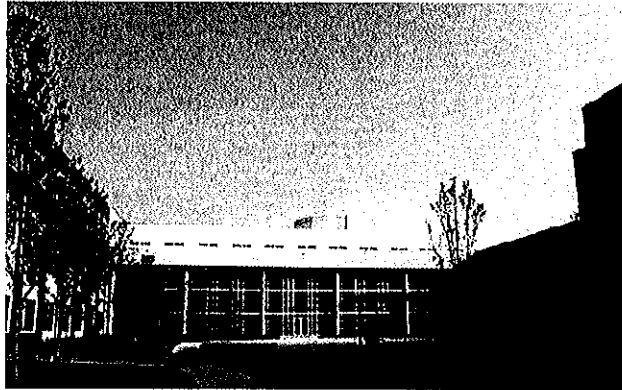
johnl@dpsdesign.org



East Campus Development

Oak Ridge National Laboratory

Oak Ridge, Tennessee
Status: Complete
LEED NC Certified
Delivery Method: Design/Build
Size: campus wide
Cost: \$48,000,000
Period of Performance: 2/2002 - 5/2004



Services

Total Building Commissioning

- Mechanical
- Electrical
- Plumbing
- Building Envelope
- Fire/Life Safety
- Laboratory Systems

Equipment

Central Plant
Chillers
Cooling Towers
Steam Heat Exchanger
Generator
Uninterruptable Power System

Facility Features

Offices
Laboratories
Clean Rooms
Data Center Houses the World's Fastest Supercomputer

Team Member Responsibilities

John McFarland, PE, CCP, CEM, LEED AP -
Project Executive
Tony Martin, PE, CCP, CxA, CEM, LEED AP -
Project Manager

Description

The East Campus Development includes the Computer Science building: LEED Certified, 133,000 SF; Research Office building: LEED Certified, 137,000 SF; Engineering Technology facility: LEED Certified, 98,000 SF; and Central Energy Plant: 7,650 SF. The facilities, which are connected by a main street corridor, house offices, conference rooms, laboratories, supercomputer data center, clean rooms, and a central energy plant. The Computational Sciences Building includes a central energy plant for the three main buildings and four other new buildings nearby. This building also features a 40,000 SF computer center housing the world's fastest supercomputer, capable of 100 trillion calculations per second.

Owner

Keith Dempsey
Oak Ridge National Laboratory
1 Bethel Valley Road
Oak Ridge, TN 37831
865-576-1468 tel.
865-576-1523 fax
dempseykj@ornl.gov

General Contractor

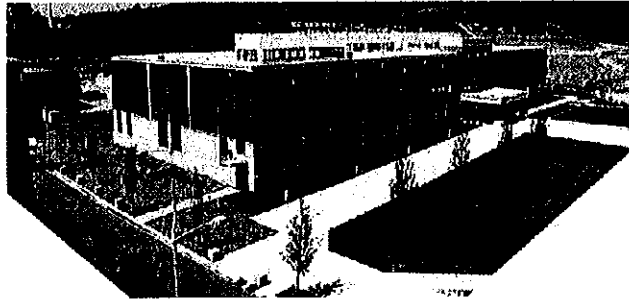
Roger McDonell
Haskell Construction Company
111 Riverside Avenue
Jacksonville, FL 32202
904-475-7646 tel.
904-791-4699 fax
roger.mcdonell@haskell.com



Joint Institute for Computational Sciences

Oak Ridge National Laboratory

Oak Ridge, Tennessee
Status: Complete
LEED NC-Silver
Delivery Method: Design/Bid/Build
Size: 52,000 SF
Cost: \$10,000,000
Period of Performance: 1/2002 - 2005



Services

Total Building Commissioning

- Mechanical
- Electrical
- Plumbing
- Building Envelope
- Fire Alarm
- Fire/Life Safety

Indoor Air Quality

LEED Consulting

Equipment

Chilled Water from Central Plant

Air Handling Units

CRUs

Lighting controls

Terminal Units

Facility Features

Raised Floor Computer Laboratory

Lecture Hall

Distant Learning Center

Four Self-contained Incubator Suites

Team Member Responsibilities

John McFarland, PE, CCP, CEM, LEED AP -

Project Manager & LEED Consultant

Tony Martin, PE, CCP, CxA, CEM, LEED AP -

Mechanical CxA

Description

WorkingBuildings commissioned three previous buildings at ORNL with the same Johnson Controls team of programmers and technicians. The team became so knowledgeable regarding the previous projects' documented issues, that the office building was able to be functionally tested 50% faster than an office building of similar complexity. The commissioning team completed the functional testing with nearly no issues.

Owner

Gerry Palau
Oak Ridge National Laboratory
P.O. Box 2008 MS6336
Oak Ridge, TN 37831
865-574-6747 tel.
865-241-5814 fax
palaug@ornl.gov

General Contractor

Bill Edwards
Anthony and Gordon Construction
Company, Inc.
616 Luttrell Street
Knoxville, TN 37919
615-741-5193 tel.
william.bill.edward@state.tn.us

Architect

Douglas Shover, RA
The Lewis Group
6512 Deane Hill Drive
Knoxville, TN 37919
865-584-5000 tel.
865-588-1272 fax
gshover@lewisgroup.net



Joint Institute for Neutron Sciences

Oak Ridge National Laboratory

Oak Ridge, Tennessee
Status: Complete
LEED Status: Registered
Delivery Method: Design/Bid/Build
Size: 35,600 SF
Cost: \$8,000,000
Period of Performance: 1/2004 - Ongoing



Services

Total Building Commissioning

- Mechanical
- Electrical
- Plumbing
- Building Envelope
- Fire Alarm
- Fire/Life Safety

LEED Consulting

Equipment

VAV Terminal
Air Cooled Chiller
Mini-Split System Heat Pump
Lighting Controls
Boiler

Facility Features

Lecture Hall
Distant Learning Center
Conference Rooms
Staff Offices
Four Self-Contained Incubator Suites

Team Member Responsibilities

John McFarland, PE, CCP, CEM, LEED AP -
Project Executive & LEED Consultant
Tony Martin, PE, CCP, CxA, CEM, LEED AP -
Project Manager
Cody Fincher, CEM, LEED AP - Electrical CxA
Gerard Roth, CxA, CEM - Controls & TAB Specialist

Description

The JINS facility is a multi-use space and energy-efficient building. The facility design will be oriented around several key features, including a large lecture hall, a specially equipped distant learning center, conference rooms, staff offices, and four self-contained incubator suites for computer-based collaborations.

Owner

John Overly
Oak Ridge National Laboratory
5723 Middlebrook Pike
Suite 119
Knoxville, TN 37996
865-974-2231 tel.
865-974-7313 fax
joverly1@utk.edu

General Contractor

Chris Kropp
Rouse Construction
11121 Kingston Pike
Suite G
Knoxville, TN 37934
865-777-9776 tel.
865-777-9727 fax
ckropp@rouseconstruction.com

Architect

Russ Fredrick
Ross Fowler Architects
625 S. Gay Street
Suite 310
Knoxville, TN 37902
865-637-1100 tel.



Infrastructure Upgrade

Centers for Disease Control and Prevention

Atlanta, Georgia
Status: Complete
Delivery Method: Design/Bid/Build
Size: Campus wide upgrade
Cost: \$250,000,000



Period of Performance: 11/2003 - 1/2010

Services

Commissioning

- Mechanical
- Electrical
- Plumbing
- Fire/Life Safety

Indoor Air Quality

Equipment

7 Parallel Diesel Generators
Double Ended Switchgear
Campus Fuel Distribution System
Central Plant Conversion
to Primary/Secondary
HEPA Filtration System
UPS Systems

Features

Fuel Farm
Transshipping Center
Central Plant

Team Member Responsibilities

John McFarland, PE, CCP, CEM, LEED AP - Project Executive
Tony Martin, PE, CCP, CxA, CEM, LEED AP -
Project Manager
Raymond Sanchez - Electrical CxA
Cody Fincher, CEM, LEED AP- Electrical CxA
Gerard Roth, CxA, CEM - Controls & TAB Specialist

Description

WorkingBuildings commissioned the largest renovation and revitalization of the main campus of the CDC to date. This effort includes construction of a new transshipping center; the campus infrastructure upgrade, which includes new power substations, turbine generation and other major upgrades. Due to government restriction, dissemination or distribution of specifications concerning this project to unauthorized users is prohibited.

Owner

Greg Rosser
Program Manager
Centers for Disease Control
and Prevention
1600 Clifton Road, MS 060
Atlanta, GA 30333
404-498-2636 tel.
404-639-0372 fax
ghr8@cdc.gov

General Contractor

Steve Williams
Turner Construction
3424 Peachtree Road
Atlanta, GA 30326
404-504-3700 tel.
404-504-3715 fax
swilliams@tcco.com

Architect Contact

Micah Rosen
TVSA
2700 Promenade II
1230 Peachtree Street, NE
Atlanta, GA 30309
404-946-6748 tel.
404-946-6700 fax
mrosen@tvsa.com



Building 24, Edward R. Roybal Campus

Centers for Disease Control and Prevention

Atlanta, Georgia
Status: Ongoing
LEED Status: Registered
Size: 310,000 SF
Cost: \$92,500,000
Delivery Method: Design/Build
Period of Performance: 8/2008 - Ongoing



Services

Fundamental & Enhanced Commissioning

- Mechanical
- Electrical
- Plumbing

Indoor Air Quality

Equipment

Air Handling Units

BAS: Johnson Controls

Chilled Water system

Daylighting

Domestic & Process Water

Emergency Power

Exhaust Fans

Stairwell Pressurization

Steam Systems

VAV Components

Ventilation Air Volumes

Features

Office Building

Team Member Responsibilities

John McFarland, PE, CCP, CEM, LEED AP -
Project Executive

Tony Martin, PE, CCP, CxA, CEM, LEED AP -
Project Manager

Cody Fincher, CEM, LEED AP - Electrical CxA

Gerard Roth, CxA, CEM - Controls & TAB Specialist

Description

Due to government restriction, the dissemination or distribution of specifications concerning this project to unauthorized users is prohibited.

Architect

Micah Rosen

TVSA

2700 Promenade Two

1230 Peachtree Street NE

Atlanta, GA 30309

404-946-6748 tel.

404-946-6700 fax

mrosen@tvsa.com

General Contractor

Jeff Justen

Turner Construction

3424 Peachtree Road

Atlanta, GA 30326

404-633-3550 tel.

404-504-3715 fax

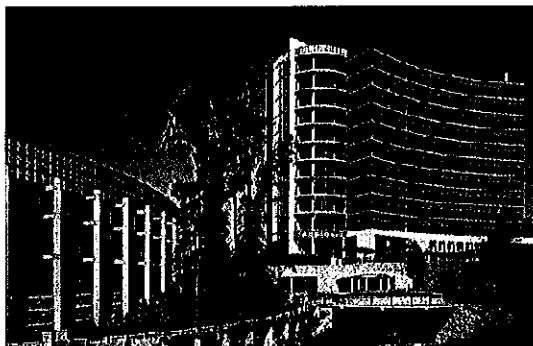
jjusten@tcco.com



Arlen Specter Headquarters & Emergency Operations Center

Centers for Disease Control and Prevention

CDC Building 21
Status: Complete
LEED NC Silver
Delivery Method: Design/Bid/Build
Size: 325,000 SF
Cost: \$100,000,000
Period of Performance: 3/2004 - 12/2005



Services

Commissioning
Indoor Air Quality

Equipment

Fire/Life Safety
Turbine Generation
Power Substations
Medium Voltage (MV) Generators
MV Paralleling Switchgear
MV Switchgear
MV Transfer Switches

Facility Features

Offices
Medical Library
Food Court
Transshipping Center
Emergency Operations Center
Integrated Facilities Management Control Center

Team Member Responsibilities

John McFarland, PE, CCP, CEM, LEED AP -
Project Executive
Tony Martin, PE, CCP, CxA, CEM, LEED AP -
Project Manager

Description

WorkingBuildings commissioning authorities recommended additional run-time testing for two generators. The additional testing revealed catastrophic failure of both generators resulting from manufacturer deficiencies. The removal and replacement of these generators was at the cost of the manufacturer, saving the CDC \$350,000.

Architect

Micah Rosen
TVSA
2700 Promenade Two
1230 Peachtree Street NE
Atlanta, GA 30309
404-946-6748 tel.
404-946-6700 fax
mrosen@tvsa.com

General Contractor

Andres Pinzon
Skanska USA
70 Ellis Street NE
Atlanta, GA 30303
404-636-6580 tel.
404-636-6825 fax
andres.pinzon@skanskausa.com



Heating System Modernization Project

Sandia National Laboratories

Albuquerque, New Mexico

Status: Ongoing

Delivery Method: Design/Bid/Build

Size: withheld at request of client

Cost: withheld at request of client

Period of Performance: 1/2006 - Ongoing

Fee: \$30,262

Services

Commissioning

Retro-commissioning



Equipment

Due to government restriction, the dissemination or distribution of specifications concerning this project to unauthorized users is prohibited.

Campus Features

30 Buildings

Team Member Responsibilities

Michael L. Weiss, Ph.D. ABD, HCCP - Project Executive

John McFarland, PE, CCP, CEM, LEED AP -

Project Executive

Marvin Roybal, PE, LEED AP - Project Manager

Ed Hunda, PE, QCP, CxA, CEM, LEED AP -

Mechanical CxA

Description

WorkingBuildings is providing commissioning to integrate existing and new equipment throughout the campus.

Owner

Jim Smith

Sandia National Laboratories

P.O. Box 5800

Albuquerque, NM 87185

505-844-5844 tel.

505-844-7472 fax

jamesmith@sandia.gov

Architect

Cole Erderly

EEA Consulting Engineers

6615 Vaught Ranch Road

Austin, TX 78730

512-744-4400 tel.

512-744-4444 fax

erderlyc@auseea.com



Sandia National Laboratories

IDIQ

Albuquerque, New Mexico
Status: Ongoing

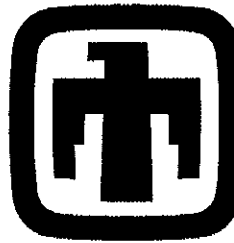
Services

Commissioning

- Mechanical
- Electrical
- Plumbing
- Refractory
- Process Gasses
- Fuel Systems
- Global Integration Services

Equipment

Due to government restriction, the dissemination or distribution of specifications concerning this project to unauthorized users is prohibited.



Sandia National Laboratories

Campus Features

Due to government restriction, the dissemination or distribution of specifications concerning this project to unauthorized users is prohibited.

Team Member Responsibilities

Michael L. Weiss, Ph.D. ABD, HCCP - Project Executive

John McFarland, PE, CCP, CEM, LEED AP -
Project Executive

Marvin Roybal, PE, LEED AP - Project Manager

Edward Hunda, PE, QCP, CxA, CEM, LEED AP -
Mechanical CxA

Description

WorkingBuildings was selected to be one of the two authorized commissioning providers allowed to work at this prestigious institution. WB was also chosen to develop and implement a campus-wide commissioning program, as well as to commission several facility upgrade projects. WorkingBuildings is on an indefinite delivery schedule lasting through 2012.

Sandia National Laboratory (SNL) develops science-based technologies that support national security. Through science and technology, people, infrastructure, and partnerships, the mission of Sandia is to meet national needs in four key areas: nuclear weapons, nonproliferation and materials control, energy and critical infrastructure, and emerging threats.

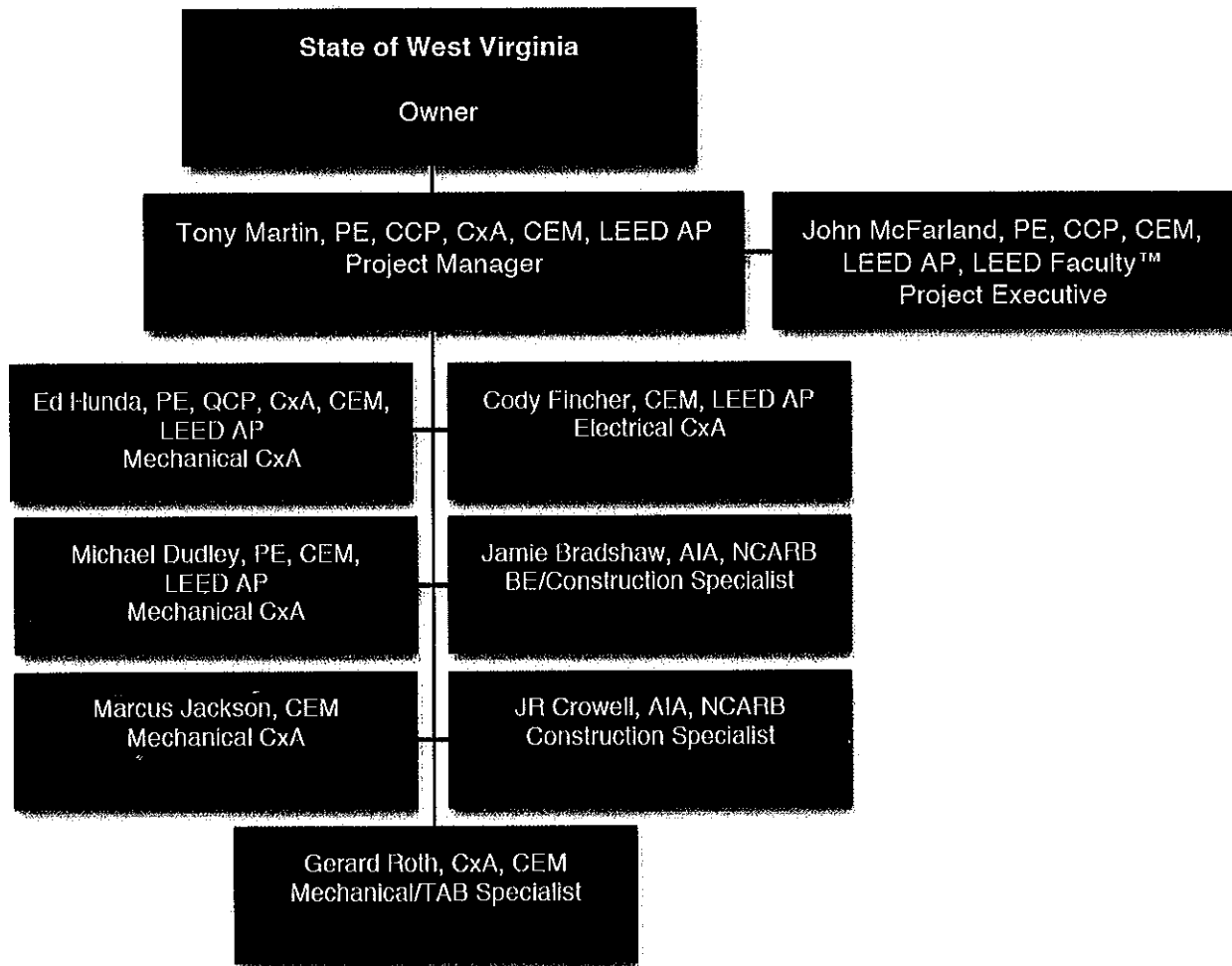
Owner

Anthony Chavez
Sandia National Laboratory
Project Manager
PO Box 5800 MS 0937
Albuquerque, NM 87185
505-844-5867 tel.
mauchav@sandia.gov



Key Personnel

We have established our team structure for your project as detailed below. Resumes for key personnel are included on the following pages.





John McFarland, PE, CCP, CEM, LEED AP
Project Executive

Professional Qualifications

John has been actively serving as a commissioning authority since 1998. John has commissioned office buildings, education facilities, state-of-the-art data centers, cancer research facilities, biological research facilities, and other high-performance and containment research facilities. He has worked as the owner's agent from the design phase through construction and start-up and works well with both engineers and contractors, having come from a design/build background.

John has been actively involved in promoting sustainability in projects. He has acted as a LEED consultant, commissioned LEED projects, and serves on committees and as a member of LEED Faculty. Additionally, John served as the president of the Atlanta Chapter of ASHRAE for 2009. He is an active participant in shaping ASHRAE guidelines as vice-chair of the SSPC 62.1 committee for maintaining ASHRAE Standard 62.1 Indoor Air Quality.

Selected Professional Experience

Fort Gordon (LEED Registered): John is serving as the project executive for this multi-facility project. The project includes four barracks, battalion headquarters, brigade headquarters, and dining hall.

Silver City Medical Center at Fort Bayard (LEED Registered): John serves as the project executive for this 135,000 SF new construction medical center. The facility will feature resident rooms, pharmacy, chemical dependency rehabilitation, Alzheimer nursing care and outpatient diagnostic and specialty care clinic.

Oak Ridge National Laboratory East Campus Development (LEED NC Certified): John served as the project executive and LEED consultant for this multibuilding campus development. The project consisted of offices, laboratories, clean rooms, and a data center totaling more than 500,000 square feet.

Centers for Disease Control and Prevention Building 20 and Infrastructure Upgrade: John served as the project executive for the largest campus infrastructure upgrade for CDC. Features include gas field, power substations, turbine generation, and other upgrades.

Centers for Disease Control and Prevention Building 21 (LEED NC Silver): John served as the project executive for this office building. Commissioning included mechanical, electrical, plumbing, and fire/life safety systems.

General Services Administration Social Security Administration Building (LEED Silver): John served as the project executive and LEED consultant for this 630,000 SF office building. The facility features a green roof, under-floor air distribution system, high efficiency systems, and CO2 monitoring.

Education

Master of Business Administration,
Georgia State University, 2001

Master of Science in Mechanical
Engineering, Georgia Institute of
Technology, 1993

Bachelor of Science, Mechanical
Engineering, Rensselaer Polytechnic
Institute, 1992

Registrations

Professional Engineer: Georgia
(PE23762)

Certified Commissioning Professional
LEED AP BD&C

Certified Energy Manager

Professional Affiliations

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

U.S. Green Building Council

Indoor Environmental Quality

Technical Advisory Group

Building Commissioning Association

Southface Energy Institute

USGBC LEED Faculty

Awards

ASHRAE Distinguished Service
Award, 2008

40 Under 40 AEC Industry Rising
Stars, Building Design and
Construction, 2006

President's Quality Award - Gold
Level, Sandia National Laboratories,
2005

Young Engineer of the Year for
the Atlanta Chapter of ASHRAE,
2001



Tony Martin, PE, CCP, CxA, CEM, LEED AP
Project Manager

Professional Qualifications

Tony is a professional engineer with more than 13 years of experience with mechanical systems. He provides commissioning, energy use analysis and LEED consulting for a variety of projects including office buildings, education facilities, and laboratories. Tony acts as a project manager reporting directly to the owner and interfacing with the general contractor and design team. As the commissioning team leader, Tony ensures the quality control for the project and maintains the commissioning schedule and deliverables.

Tony's experience makes him an expert in reviewing drawings, optimizing HVAC controls sequences, performing site observation visits during construction, and verifying proper system operation during functional testing.

Selected Professional Experience

Oak Ridge National Laboratory Joint Institute for Neutron Sciences (LEED Registered): Tony serves the project manager and will perform mechanical commissioning, design review, functional performance testing and site observations. The facility features energy-efficient design, large lecture hall, distant learning center, and incubator suites for computer-based collaborations.

Oak Ridge National Laboratory Joint Institute for Computational Sciences (LEED Silver): Tony was the mechanical commissioning authority and performed functional performance testing for this office building and small data center. Equipment commissioned includes VAV, rooftop units, computer room air conditioning (CRAC) units and an integrated building automation system.

Oak Ridge National Laboratory East Campus Development (LEED NC Certified): Tony was the mechanical commissioning authority for this 500,650 SF campus development which included the Computer Science Building (LEED Certified), Research Office Building (LEED Certified), and Engineering Technology Facility (LEED Certified). He performed functional performance testing of the HVAC and plumbing systems.

Centers for Disease Control and Prevention Building 20 and Infrastructure Upgrades: Tony served as project manager for this highly complex campus infrastructure upgrade. The project included new power substations, turbine generation and other major upgrades.

General Services Administration Anchorage Federal Building: Tony acted as the project manager in leading the team effort to commission this facility for GSA funded by ARRA. The facility was retro-commissioned and energy conservation measures (ECMs) were identified.

Education

Bachelor of Science in Mechanical Engineering, Georgia Institute of Technology, 2001

Registrations

Professional Engineer: Georgia (PE033654), Maryland (37880) Tennessee (00113600), New Jersey (24GE04850400)

Certified Commissioning Professional

Certified Energy Manager

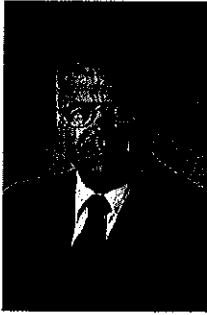
AABC Commissioning Certification
CxA

LEED Accredited Professional

Professional Affiliations

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

Building Commissioning Association
Member



Education

Bachelor of Science, Mechanical Engineering, Florida Atlantic University, 1973

Registrations

Professional Engineer: Georgia (PE14102), New Mexico (17335), California (33514), Florida (70339), New Jersey (24GEO4890600), South Carolina (14102), Tennessee (00016934)

Certified Energy Manager

Qualified Commissioning Provider

Certified Commissioning Authority (AAAB Council)

LEED Accredited Professional

Professional Affiliations

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

U.S. Green Building Council

Building Commissioning Association
- Member

Edward Hunda, PE, QCP, CxA, CEM, LEED AP
Mechanical Commissioning Authority

Professional Qualifications

Ed is a professional engineer with more than 30 years of experience and is fluent in both English and Spanish. Ed has extensive experience in total building commissioning and sustainability features with a focus on the mechanical and plumbing systems. In addition to mechanical commissioning, Ed also often serves as project manager, working directly with the owner, architect and contractors, managing the commissioning tasks for high-performance facilities through the design and construction phases.

Selected Professional Experience

Fort Gordon (LEED Registered): Ed is providing project management and mechanical commissioning support for this multi-facility project. The project includes four barracks, battalion headquarters, brigade headquarters, and dining hall.

General Services Administration Martin Luther King, Jr. Federal Building (LEED registered): Ed is providing mechanical commissioning support for the planning, designing, and preparation of construction documents for the rehabilitation and renovation of this historic facility.

GSA Anzalduas Crossing Land Port of Entry (LEED registered): Ed is providing project management and mechanical commissioning for this GSA project. Commissioned systems include mechanical, plumbing, daylighting controls, design reviews, development of a systems manual, and energy modeling.

GSA Donna Rio Bravo Land Port of Entry (LPOE): Ed is providing project management and mechanical commissioning support for this LPOE. Commissioned systems includes mechanical, electrical, plumbing, fire/life safety and HVAC. The equipment includes BAS, domestic and process water, emergency power, energy recovery systems, rooftop units, telecom systems, VAV components, VFD and variable motor speed and transformers.

GSA Paso del Norte Land Port of Entry (LPOE): Ed is providing project management and mechanical commissioning support for this LPOE. Commissioned systems includes mechanical, electrical, plumbing, fire/life safety and HVAC.

Centers for Disease Control and Prevention Arlen Specter Headquarters and Emergency Operations Center (LEED NC Silver): Ed provided mechanical commissioning for mechanical, electrical and plumbing systems for this 325,000 SF office building.

USDA Animal and Plant Health Inspection Service Facility: Ed is providing project management and mechanical commissioning for this 110,000 SF facility. WorkingBuildings is providing commissioning, bio-containment, security, quality assurances, risk/threat mitigation, training, operational readiness review and translation services.



Education

Bachelor of Science, Mechanical Engineering, Georgia Institute of Technology, 1997

Associates in Mathematics, DeKalb College, 1995

Registrations

Professional Engineer: Georgia (PE031233)

Certified Energy Manager

LEED Accredited Professional

Professional Affiliations

American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
President 2010-2011

Colony Square Toastmasters
(Past President)

Toastmasters (Past Member)

Michael E. Dudley, PE, CEM, LEED AP
Mechanical Commissioning Authority

Professional Qualifications

Michael is a professional engineer with a strong background in HVAC design. He has designed and commissioned HVAC systems for a variety of facility types including central plants, office buildings, laboratories, power plants, and hotels. Michael brings a diverse background to WorkingBuildings having spent time on-site working with general contractors to troubleshoot issues and supervise engineers in the field. Michael has worked as a senior mechanical designer and is well versed in creating and reviewing design documents of various disciplines.

Michael is a LEED consultant and provides building commissioning services including energy audit surveys as required by USGBC for LEED projects. Michael serves primarily as a project manager overseeing a team of commissioning authorities while performing commissioning activities in the field.

Selected Professional Experience

Atlanta Public Safety Headquarters Annex (LEED Registered): Michael served as project manager for this office and warehouse building. The project consisted of demolition of an existing warehouse office, construction of a new three-story office building renovation of a single story, 105,000 SF warehouse and construction of a one-story covered parking structure located at the rear of the building. The commissioned systems were the lighting system and the HVAC system.

Atlanta Public Safety Headquarters (LEED Gold): Michael is the project manager of this newly constructed, five-story, 165,000 SF police and fire rescue headquarters. The \$82 million facility consists of a joint operations center and media room for police and fire personnel, armory, interview rooms, video surveillance area, tactical equipment storage, bunkrooms, archival storage, a cyber crimes office and a fitness center.

Howard Office Building: Michael serves as the project manager for this demolition, gut, renovation and addition of an original 140,000 SF, three-story school and office building. The \$32 million project consists of office spaces, flex-space work areas, an auditorium and a data center. The project includes "green" building techniques such as a white TPO roof, sunshades on south-facing windows, and supplies from within a 500-mile radius.

8500 Andrew Carnegie Boulevard: Michael served as the project manager for this existing, six-story, 441,000 SF office space. Michael conducted Level I and Level II energy audits identifying low cost/no cost ECMs to save \$78,407. The documentation complied with LEED for Existing Buildings: Operations and Maintenance requirements.



Marcus Jackson, CEM
Mechanical Commissioning Authority

Professional Qualifications

Marcus provides commissioning for mechanical systems including building automation systems, HVAC, chillers, cooling towers, VAV units, plumbing, and fire/life safety. Marcus conducts drawing reviews; writes specifications, commissioning plans, equipment checklists, functional performance tests, and commissioning reports. Additionally, Marcus is on-site for site observations, troubleshooting and functional performance testing.

As an Engineering Officer in the United States Navy, Marcus oversaw operations and maintenance of more than \$115 M of engineering plant systems. He is experienced with hydraulics, pneumatics, filtration, refrigeration, HVAC, heat transfer, fuel oil piping, and service water. Marcus is highly experienced in water and chemical fire fighting systems. Upon completing his Naval service, Marcus provided engineering expertise in the manufacturing sector.

Selected Professional Experience

Fort Gordon: Marcus is providing functional performance testing, site observations, and contributing to reports. The project includes the renovation of six buildings including Battalion Headquarters, Brigade Headquarters, four barracks and a dining hall.

Oak Ridge National Laboratory Melton Valley Maintenance Support Facility: Marcus is creating custom functional performance tests, performing site visits, and witnessing functional testing.

Centers for Disease Control and Prevention Building 24: Marcus is conducting site visits and functional performance testing for this 12-story office building.

Tift Regional Medical Center Data Center: Marcus is providing custom commissioning deliverables, site observation and functional testing for this 15,000 SF data center. The data center features 4,000 SF raised floor.

St. Martins Episcopal School: Marcus is developing custom commissioning deliverables, commissioning plan, conducting site observations, witness functional testing, and assembling the final commissioning report.

Augusta Richmond County East Central Georgia Public Library: Marcus is witnessing functional performance testing for this 90,000 SF, three-story state-of-the-art library. The \$16 M construction project will include technology rooms, meeting areas, and study rooms with wireless access.

Education

Bachelor of Science Mechanical Engineering, U.S. Naval Academy, 2002

Professional Licenses

Engineer in Training, Maryland

Registrations

Certified Energy Manager

Professional Affiliations

Building Commissioning Association
- Member

American Society of Heating, Refrigerating, and Air Conditioning Engineers - Member

Military Service

Engineer Officer of the Watch Qualification, U.S. Navy

Basic Engineering School, U.S. Navy

Advanced Gas Turbine Engineering School, U.S. Navy

Service Rank of Lieutenant, U.S. Navy, 2002-2007



Cody Fincher, CEM, LEED AP
Electrical Commissioning Authority

Professional Qualifications

Cody performs all aspects of commissioning for electrical systems. As a commissioning authority, Cody reviews design documents, conducts functional performance tests, prepares checklists and writes O&M manuals for power distribution, lighting controls, and fire systems. Cody is a member of the USGBC Emerging Green Builders Atlanta Chapter as a participant in the professional development committee.

Education

Bachelor of Electrical Engineering,
Georgia Institute of Technology,
2007

Registrations

Engineer in Training, Georgia
(EIT023343), 2008

Certified Energy Manager

LEED Accredited Professional

Professional Affiliations

Building Commissioning Association
Member

United States Green Building
Council Emerging Green Builders

Selected Professional Experience

Oak Ridge National Laboratory Guest House: Cody is providing electrical commissioning for this new three-story, 29,000 SF housing facility for visitors to ORNL facilities. In addition to 47 guest rooms, the building features a lounge area, conference room, fitness and laundry facilities and a mini store.

General Services Administration Social Security Administration Building (LEED Silver): Cody served as the electrical commissioning authority for this facility where he witnessed and performed functional performance testing. Additionally, Cody completed submittal and O&M reviews. This 8-story building features data center, office space and cafeteria. Sustainable features include green roof, high efficiency mechanical and electrical systems, CO2 monitoring, and low VOC content materials.

General Services Administration IRS Andover Service Center: Cody is providing electrical commissioning for this 380,000 SF renovation. As part of a large campus, the facility will serve the IRS as a call center.

Centers for Disease Control and Prevention Infrastructure Upgrades: Cody performed site visits, developed equipment checklists and orchestrated functional performance testing. Additionally, he completed submittal and O&M reviews. WorkingBuildings provided commissioning services for mechanical, electrical, plumbing and fire/life safety systems.

Centers for Disease Control and Prevention Building 24 (LEED Registered): Cody is providing electrical commissioning for this 310,000 SF office building. The facility is located on the Roybal Campus in Atlanta.

Centers for Disease Control and Prevention Building 21: Cody conducted a facility assessment for this office building and data center.

Centers for Disease Control and Prevention Building 106 (LEED Gold): Cody provided all commissioning related to the electrical system for this data center. The facility also features offices and dining area.

USDA Animal and Plant Health Inspection Service Facility: Cody is providing electrical commissioning for this 110,000 SF facility. WorkingBuildings is providing commissioning, bio-containment, security, quality assurances, risk/threat mitigation, training, operational readiness review and translation services.



Jamie Bradshaw, AIA, NCARB
Construction Specialist

Professional Qualifications

Prior to joining WorkingBuildings, Jamie worked as an Architect for more than 25 years. She manages large complex building types including diagnostics and research laboratories, containment facilities, Justice facilities, and projects requiring understanding of high security and risk mitigation. She understands the functionality of facilities and their specific needs including security, restricted access, and resource preservation.

Education

Bachelor of Architecture with
Honors, University of Tennessee,
1984

Fine Arts Major, Florida Southern
College, 1980

Certifications

Registered Architect:

Iowa (6385)

Georgia (RA010180)

Tennessee (00020939)

South Carolina (6160)

New York (003701-1)

NCARB Certificate (39987)

Professional Affiliations

American Institute of Architects
National Council of Architectural
Registration Boards

Jamie has managed significant laboratory projects for the State of New Jersey and Washington, DC, as well as county Justice facilities, and federal facilities for the Federal Bureau of Prisons. Several of her projects have been fast-track, including Design/Build and CM-at-Risk. Her Laboratory projects total \$320 million, and 600,000 SF, and her Justice projects exceed \$500 million, and 1.5 million SF.

Jamie brings her extensive construction experience to WorkingBuildings to complement the commissioning process. She has comprehensive experience and proficiency with BIM (Building Information Modeling) software, including Revit. At WorkingBuildings, Jamie is involved in the Quality Assurance/Quality Control and Commissioning of large complex projects, including several that she had previously managed through design.

Selected Professional Experience

GSA Retro-Commissioning: Jamie conducted facility condition assessments and established building envelope recommendations to enhance energy savings under ARRA (American Recovery and Reinvestment Act). Projects included Federal Office Buildings and Courthouses in Alaska, Washington, Kentucky, and Tennessee.

Georgia State University Parker H. Petit Science Center: Jamie conducted design and shop drawing reviews, and is involved with building systems commissioning. The facility includes Bio-Safety Level 2, 3, and 4 (BSL-2, BSL-3, BSL-4), teaching, analytical and research laboratory areas.

University of Texas Southwestern Medical Center: Jamie conducted design and shop drawing reviews for building systems and envelope commissioning. The facility includes Bio-Safety Level 2 and 3 (BSL-2, BSL-3), teaching, analytical and research laboratory areas.

New Jersey Public Health, Environmental, and Agricultural Laboratory: Jamie is providing commissioning of the construction phase of this facility. The 195,000 SF facility will feature BSL-3 and ABSL laboratories for the handling of dangerous pathogens and highly toxic chemicals.

DC Consolidated Laboratory (LEED registered): Jamie is providing commissioning of the construction phase of this facility. The 350,000 SF facility is housing the offices of the Medical Examiner, Police Department, and Public Health.



J.R. Crowell, AIA, NCARB
Construction Specialist

Professional Qualifications

J.R. has more than 30 years of experience working as a senior project manager and architect on large educational; science and technology; and government facilities. He has participated in a wide range of projects, covering most major building types involving both new construction and renovation in both domestic and international locations. His experience encompasses all project phases including project planning, design, delivery, cost evaluation, quality control/assurance, and construction phase services.

Based on his experience, J.R.'s responsibilities focus on the building envelope and overall construction of a project. He conducts drawing reviews and documents any issues that may affect the performance of the facility. He conducts site observations and contributes to the writing of commissioning deliverables.

Selected Professional Experience

Commissioning

New Jersey Public Health Environmental and Agriculture Laboratory: J.R. is providing architectural and laboratory design review and weekly on site quality assurance observation for this 195,000 SF ABSL and BSL-3 laboratory and office facility.

Georgia State University Parker H. Petit Science Center: J.R. is using his laboratory design expertise to ensure functionality and design intent of the laboratories.

New Mexico Tri-Services Laboratory (LEED registered): J.R. is conducting site observations with a primary focus on the architectural systems of this 165,000 SF laboratory. The facility features a BSL-3 laboratory and a construction cost of \$46,000,000.

Architecture

United States Embassy Office Building, Moscow, Russia
United States Embassy Compound, Riyadh, Saudi Arabia
United States Embassy Compound, Sana, Yemen
Bio-systems Research Center, Clemson University, National Maritime Intelligence Center, Suitland, Maryland
United States Ambassador's Residence, Riyadh, Saudi Arabia
Roybal Infectious Disease Laboratory, United States Centers for Disease Control and Prevention
Shelby Center for Engineering Technology, Phase I, Auburn University
Fort Gillem Criminal Investigation Laboratory
Trinidad and Tobago National Forensic Center DNA Analysis Laboratory
National Maritime Intelligence Center.

Education

Bachelor of Science, Architecture,
The Ohio State University, 1980

AAS, Civil Engineering, Hudson
Valley Community College, 1976

Registrations

Registered Architect, Georgia
(9375), South Carolina (05465,
Alabama (9159), and Ohio
(914923)

National Council of Architectural
Registration Boards Certificate

Professional Affiliations

American Institute of Architects
National Council of Architectural
Registration Boards



Gerard Roth, CxA, CEM
Mechanical and TAB Specialist

Professional Qualifications

As a commissioning authority, Gerard specializes in controls optimization and on-site commissioning. Gerard has 30 years of experience in field design of commercial HVAC systems and testing and balancing of air and water moving systems. In addition, Gerard has installed and maintained equipment, calibrated pneumatic devices, and tested the control systems of hydronic hot and chilled water systems. Gerard has worked in a variety of facilities including high-rise buildings, water treatment facilities, hospitals and schools. He has extensive experience with direct digital control of HVAC, lighting and fire alarm systems.

Selected Professional Experience

Centers for Disease Control and Prevention Infrastructure Upgrade: Gerard conducted TAB verification and commissioning for the mechanical and electrical systems, and direct digital controls. Commissioned systems included: chilled water air handlers, VAV and PIU systems, DDC controls, exhaust and supply fans, generator inspections, condenser and chilled water pumps, flow meters, building pressurization, test and balance review, multi-zone rooftop units, DX units and data center control.

General Services Administration Social Security Administration Building, Birmingham (LEED NC Silver): Gerard conducted TAB verification and commissioning of the mechanical and electrical systems, and direct digital controls. Sustainable features of this 500,000 SF facility include green roof, high efficiency mechanical and electrical systems, CO2 monitoring, and low VOC content materials.

General Services Administration Auburn Federal Administration Building: Gerard provided a facility assessment for this multistory facility. Eight significant ECMs were identified. This project was funded by ARRA.

General Services Administration Laredo Federal Courthouse: Gerard provided retro-commissioning of the mechanical and lighting systems. Recommended repairs were estimated to result in a 40% energy savings. The commissioning paid for itself in less than one year.

General Services Administration Anchorage Federal Building: Gerard conducted TAB verification and retro-commissioning for the mechanical, electrical, pneumatic and direct digital controls. Equipment includes ground source heat pumps, rooftop units, heat pumps, building automation system (Johnson Controls) and energy recovery units.

Naval Health Research Center, Naval Respiratory Disease Laboratory BSL-3: Gerard conducted TAB verification and commissioned the mechanical and electrical systems, and direct digital controls. Equipment included: DX air handling units with remote air cooled condenser, exhaust fans with HEPA filters, building automation system (Johnson Controls), and security locking system.

Education

Associates Degree, HVAC/R
and Electrical, Delhi University,
1981

Registrations

AABC Commissioning Certification
CxA

Automated Logic Certification for
Web Control

EPA Certified for Refrigerant
Usage

Professional Licenses

State of Connecticut HVAC/R
License - S-1, Contractor's License

State of Georgia Conditioned Air
License - Unlimited

Certified Energy Manager

Professional Affiliations

Building Commissioning Association
- Member

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



Project Management Plan

WorkingBuildings is a leader in the integration of the commissioning process with existing or planned projects. Our focus is on team building and total project quality improvement through the application of tools and techniques. The proper adoption of the commissioning process is critical in ensuring the quality of the installation and that all systems, either in existing facilities or those under construction, work from day one.

Our role as the commissioning authority is to represent the Owner's needs, verify quality, and prevent project delivery degradation. Accomplishing this in existing facilities improves operations, comfort and preservation of capital. In facilities that are being designed, refurbished or under construction the WorkingBuildings process will reduce the amount of rework required, reduce project punch lists, increase team building, increase profits for contractors, reduce project cost, and improve project quality delivery.

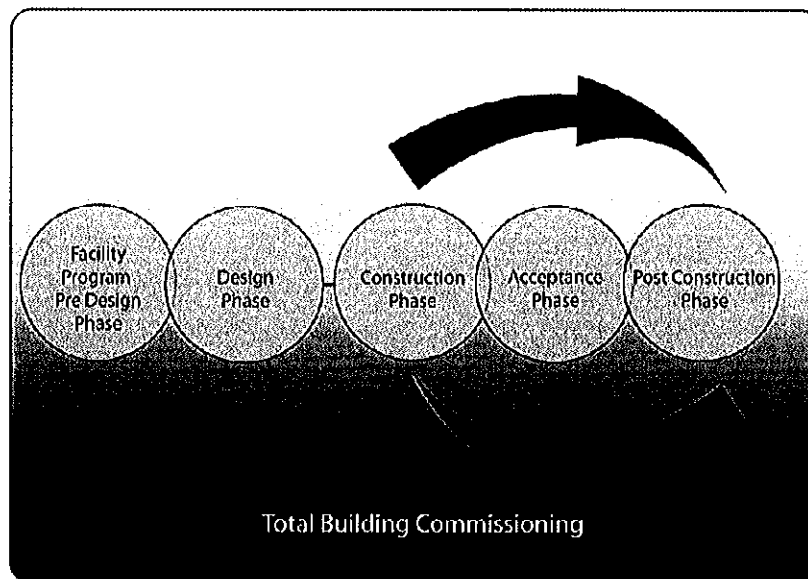
Step-by-Step Approach

As developed by WorkingBuildings and in conjunction with the Building Commissioning Association and ASHRAE, we suggest that the fundamental objectives of the commissioning process are:

- Document the Owner's project requirements (design/operational intent document).
- Provide documentation and tools to improve the quality of deliverables (equipment checklist and pre-functional test checklists – static testing).
- Verify proper coordination among systems and components, and between all contractors, subs, vendors, manufacturers and design professionals.
- Verify and document that systems and assemblies perform according to the Owner's requirements (functional performance testing, dynamic testing).
- Verify that operation and maintenance personnel and occupants are trained.
- Deliver facilities that meet the Owner's requirements at the beginning of occupancy.

To achieve these objectives, our process moves through five major phases. The process is designed to ensure that upon completion of each phase, the operational intent has been met and verified. The five major phases of the WorkingBuildings commissioning process are:

- Facility program pre-design phase
- Design phase
- Construction phase
- Acceptance phase
- Post acceptance/post construction phase





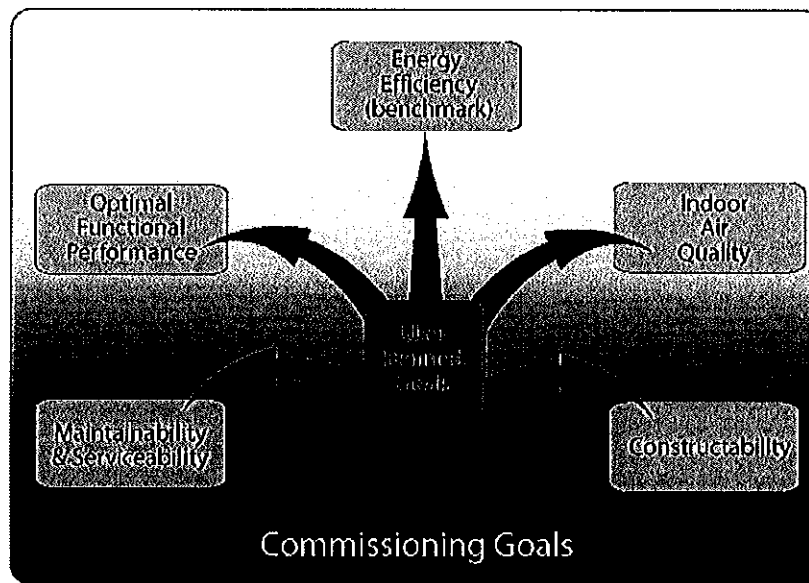
Facility Program Pre-Design Phase

The WorkingBuildings commissioning process begins during the initial planning stages of the building project. During this stage the commissioning authority helps the owner establish the overall goals for the project. The Owner's Project Requirements (OPR) are established through meetings with the Owner, occupants, operations personnel and other affected parties, the commissioning authority establishes the Owner's Project Requirements. These meetings are often in the format of a charrette.

Typical questions that may be asked to determine the owner's project requirements include:

- What spaces are needed to make this building functional?
- List the conditions important to your comfort in an ideal building.
- What is important to you from a maintenance perspective?
- What do you consider the ideal environment for your work or activity?
- How will you determine the success of this project?

The entire project team uses the OPR as the focus of their work. By clearly documenting the Owner's requirements, decisions of system design and component selection for all aspects of the building are clarified. Without a clear and concise OPR, the end goals of the project are not always conveyed to the entire project team. WorkingBuildings will work closely with the project architects and engineers as well as the Owner's engineering staff and maintenance organization to ensure that the OPR has been clearly defined on every project.



Drafting a Commissioning Plan

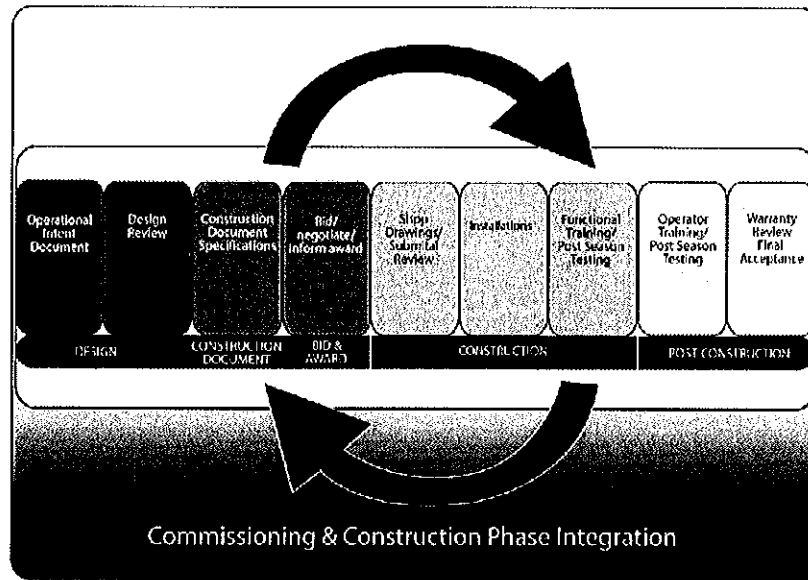
After establishing the Owner's Project Requirements, WorkingBuildings creates a commissioning plan that will serve as a roadmap for the project towards the goal of achieving the Owner's project requirements. The commissioning plan evolves throughout the project as it progresses from planning to design to construction to occupancy. The commissioning plan typically includes the following:

- Systems to be commissioned
- Commissioning roles and lines of communications for each member of the project team
- Commissioning schedule
- Project and commissioning documentation delivery schedule
- Quality control process and procedures that will be used



Design Phase

At established design document phases, WorkingBuildings will review the design documents and provide comments to the design professionals for their consideration. Before progressing to the next drawing release, all previous comments must be resolved, which may mean accepting the design professional's judgment even if it means modifying the Owner's project requirements. One of the keys to our quality assurance process is the systematic approach of documenting and resolving items prior to the next phase. When issues are identified, we work closely with the individuals to clarify the issue and determine how to proceed to best benefit the project. Using this process WorkingBuildings has been able to significantly reduce conflicts and rework on projects, resulting in higher quality systems that are easier to startup and operate.



Drafting Commissioning Specifications

WorkingBuildings develops commissioning specifications for all disciplines included in the commissioning scope of the project, including building envelope and specialty equipment or systems. At a minimum, specifications are included in the following divisions:

- Division 01 - General
- Division 15 - Mechanical
- Division 16 - Electrical

In order to ensure that the training and manuals provided will meet the owner's expectations and requirements, WorkingBuildings will develop an overall specification for the system training and operations and maintenance manual requirements.

Construction Phase

While the general contractor maintains control of means and methods, the WorkingBuildings commissioning authority serves as both a facilitator and watchdog of the level of quality occurring in the field and continues as the leader of the quality control process in the construction stage of the project.

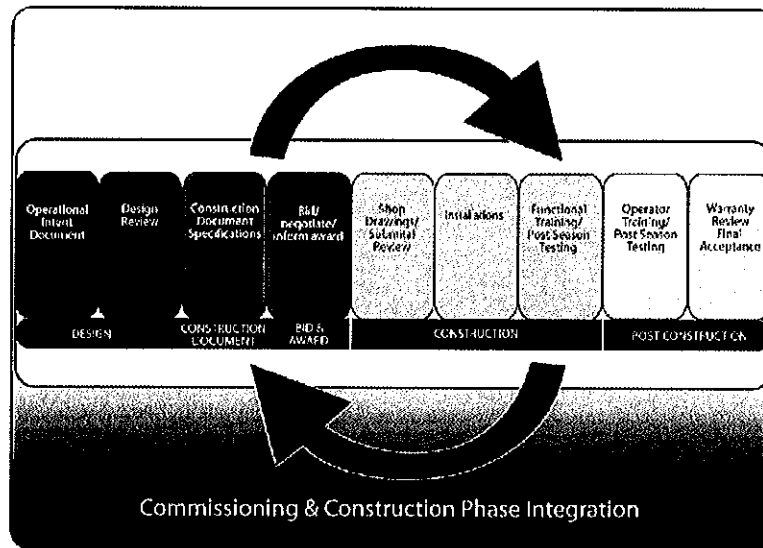
The role of our in-field inspection teams is not only to identify key milestones and document verification, but to also be a resource for the entire project team in the resolution of in-field difficulties with the building systems. The collective knowledge of our commissioning team brings expertise in troubleshooting systems from installation to operation and is a valuable asset during this phase. Clearly, our goal - as well as the entire project team's goal - is the same: a working building that meets the requirements of the Owner. The WorkingBuildings staff and process create an open environment that fosters improved working conditions and team coordination.



Developing Construction Checklists

The commissioning authority develops checklists that are used by the contractors to both facilitate and document that the correct equipment is installed and that the installation meets the owner's expectations, ensuring equipment matches specifications and is installed correctly. Construction checklists may be divided into the following categories:

- **Model verification checklists:** These typically confirm that the equipment on-site matches the submittal and project specifications before it is installed. This avoids installing the wrong equipment or installing damaged equipment.
- **Installation checklists:** These may be used to aid the field workers with how to properly install the equipment so that it meets the project specifications and the owner's project requirements.
- **Pre-functional checklists:** These are used to document that the equipment is ready for functional testing.



Conducting Commissioning Meetings

Cooperation from the contractors is crucial to the success of the project. WorkingBuildings conducts meetings throughout this stage of the project to maintain focus on the commissioning process. Our meeting format fosters open communication and makes commissioning business as usual, avoiding disruptions in the schedule. The primary purpose of these meetings is to communicate to the contractors what is expected of them, create an issue or deficiency log and discuss open/unresolved items, and foster a team approach to resolve conflicts between contractors and between the contractors and designers.

Making Site Observations

Throughout the project the WorkingBuildings commissioning authority will make site observations of the construction work. Typically, these visits occur at more frequent intervals than those made by the design professionals. We will often use a statistical approach to these visits to ensure that all aspects of the work are being observed at the appropriate time. These site observations will accomplish the following:

- Document deficiencies, issues, and areas of concern regarding compliance with contract requirements, long-term operations and maintenance requirements, and the owner's project requirements.
- Provide recommended corrective actions to resolve these issues.
- Communicate observations quickly so corrective action can occur before work is covered and to avoid continuation of incorrect work by the field personnel.

All deficiencies will be referenced by drawing number (if applicable), specification, variance from physical location, and photograph (if applicable).



Conducting Functional Testing

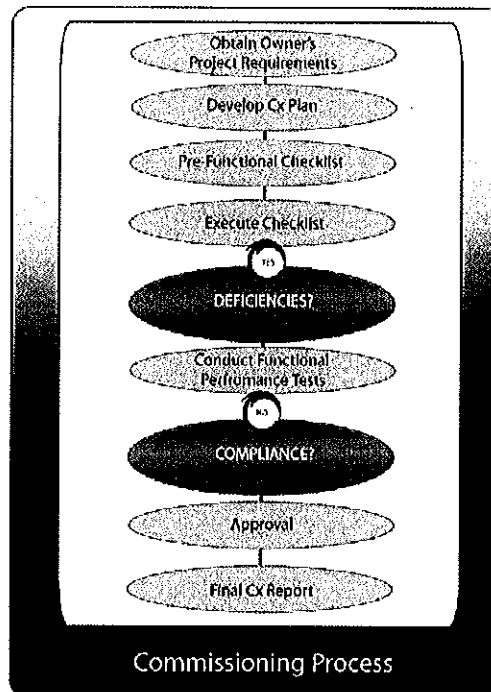
Our standard and those that we developed for GSA for functional testing is:

"Written, repeatable test procedures, prepared specifically for each project, are used to functionally test components and systems in all modes of operating conditions specified for testing. These tests are documented to clearly describe the individual systematic test procedures, the expected system response or acceptance criteria for each procedure, the actual response or findings, and any pertinent discussion."

The WorkingBuildings commissioning authority writes functional test procedures that detail step-by-step the necessary tasks for the test. The procedures identify the expected results in a pass/fail type format. The installing contractors are responsible for operating the equipment and systems during the test while the commissioning authority orchestrates and witnesses the testing process. This is a good time for the future operations personnel to be present to observe how the systems operate in both normal and emergency modes. The performance testing of all commissioned systems will include all normal and emergency modes of operation. For example, the HVAC systems testing includes occupied, unoccupied, morning warm-up or cool-down, summer, winter, power outage, freeze conditions, economizer, and indoor air quality emergency modes of operation. WorkingBuildings works closely with the design team and the contractors to develop and implement these performance tests to ensure equipment warranties are maintained and that all modes of operation are tested. WorkingBuildings will document the results of the test and report to the owner.

At the discretion of the owner, functional testing may be limited to a representative sample of the equipment, especially if there are multiples of the same types of equipment. In this case the representative samples will be selected randomly to minimize the potential for bias in the testing process. Major failures during the testing require that the tests be redone after the issues are corrected.

This documentation and validation provides assurance to both the owner and the contractors that the systems were performing as desired at the turnover of the facility and providing a benchmark to measure future operations against.





Acceptance

Reviewing Operations & Maintenance (O&M) Manuals

The WorkingBuildings commissioning authority will review and comment on the O&M manuals submitted by the contractor and will compile these manuals in an indexed, searchable, electronic format. This format provides a usable resource for the O&M staff. WorkingBuildings will also review as-built documents for accuracy. The following are recommendations regarding the O&M manuals:

- The contractor should provide the outlines for manuals for review within 90 days after the submittals have been approved.
- Only instructions and procedures that pertain to the equipment specific to the project should be accepted.
- Recommend requiring that manuals be provided in electronic format. This makes long-term storage and retrieval more secure.

Verifying Training

Due to our overall knowledge of the project requirements, system designs, equipment installation and systems operational performance, WorkingBuildings will coordinate the contractor-provided training, verify that the training meets the owner's requirements, and play a role in the training process. Training will concentrate on systems - not individual pieces of equipment. Training on systems typically occurs throughout the construction process if O&M personnel have already been hired.

- Project requirements - owner's project requirements
- Design of the systems - drawing reviews
- Installation of the equipment - equipment checklists and site observations
- Operational performance of the systems - functional performance testing

Suggested training topics include:

- Description of equipment & systems
- Warranties & guarantees
- Equipment start-up, shutdown
- Normal & emergency operation
- Seasonal changeover
- Maintenance schedules
- Health & safety issues
- Special tools & spare parts
- Relevant commissioning reports
- Emergency procedures
- Hands-on operation
- Troubleshooting
- O&M manuals
- Energy management control system
- Control sequences

The Commissioning Report

The final commissioning report provides details of the commissioning activities and the results at the end of the process. The commissioning report will include the commissioning plan, functional performance tests and results, issues logs, equipment checklists, meeting minutes, memos, documentation of all commissioning field activities, and other information that applies to specific project requirements. In addition to the hard copies of the report, WorkingBuildings will provide an indexed, searchable electronic format of the report, allowing more efficient use of the information.



Post-Construction Phase

Warranty Review and Tracking

Prior to owner occupancy, it is critical that all warranties be reviewed and owner responsibilities are understood. This is required to ensure that the warranties remain in effect for their terms and that any work accomplished on the equipment by the O&M staff not void the warranty. WorkingBuildings develops warranty summaries in the system manuals to aid the O&M staff. At approximately the tenth month of occupancy, WorkingBuildings will perform a thorough review of the operations of all building systems in preparation for the end of the equipment warranty period. Documenting and correcting any warranty-related issues before the end of the warranty period will result in significant cost- and time-savings.

Deferred Testing and Warranty Issues

If the performance of some systems cannot be fully tested prior to occupancy, WorkingBuildings will orchestrate off-season performance testing of those systems during the first year of operation. WorkingBuildings coordinates and directs this testing with the contractors and designers as appropriate to ensure the systems meet the owner's intent. Deferred testing may also be conducted as the occupancy of the building increases to determine the impact of these changes on the system operation.

In addition, WorkingBuildings is available throughout the first year of operation to aid the O&M staff to optimize systems operation. Warranty claims will be analyzed for trends that may point to latent or systemic defects.

Fostering Teamwork

Because the commissioning process is a means to improve the quality of the entire project, many of the commissioning activities concentrate on the development and improvement of the project team communication and focus. As part of the project team, WorkingBuildings identifies opportunities to improve team cohesion and aid in conflict resolution. Meetings and issue logs are used to track and resolve issues. In addition to the team building aspects of the process, WorkingBuildings identifies and helps resolve coordination issues in the design and construction of the projects. Doing this as early as possible helps eliminate rework and questions later in the process. During construction, coordination between the contractors is evaluated and issues are resolved on paper prior to the installation of actual equipment. Since the commissioning authority's focus is on the lifetime operation of the facility, and not just the end of the construction, we are able to identify items during construction that are often not found until after occupancy of the facility.



Subcontractors

As a total building commissioning provider, WorkingBuildings does not typically have the need to subcontract commissioning services. We have in-house staff to commission all systems including building envelope. Our staff features the following disciplines:

- Mechanical Engineering
- Electrical Engineering
- LEED/Sustainability Consulting
- Architecture
- Controls Specialist
- Test and Balance
- Security Consultant
- Laboratory Commissioning
- Database Management
- Finance and Administration

The WorkingBuildings team has the requisite talent readily available and will be pleased to commit the proposed individuals as required to fully satisfy all requirements of this proposal. This contract represents an important opportunity for our team and will warrant and receive our highest attention and resource allocation. In addition, the WorkingBuildings pool of national resources easily augments the staffing proposed herein. If a scope expands, or an unforeseen specialty is required, our team can draw additional staffing from WorkingBuildings office locations or strategic partners located throughout the U.S. to meet the needs of the project.



Quality Control

Our role as the commissioning authority is to represent the Owner's needs, verify quality, and prevent project delivery degradation. Accomplishing this in existing facilities improves operations, comfort and preservation of capital. In facilities that are being designed, refurbished or under construction the WorkingBuildings process will reduce the amount of rework required, reduce project punch lists, increase team building, increase profits for contractors, reduce project cost, and improve project quality delivery.

Because the commissioning process is a means to improve the quality of the entire project, many of the commissioning activities concentrate on the development and improvement of the project team communication and focus. As part of our commissioning approach, WorkingBuildings identifies opportunities to improve team cohesion among all project contractors and aid in conflict resolution. Meetings and issue logs are used to track and resolve issues.

In addition to the team-building aspects of this process, WorkingBuildings identifies and helps resolve coordination issues throughout all phases of the project. Doing this as early as possible helps eliminate rework and questions later in the process. During construction, coordination between the contractors is evaluated and issues are resolved on paper prior to the installation of actual equipment. Since the commissioning authority's focus is on the lifetime operation of the facility, and not just the end of the construction, we are able to identify items during construction that are often not found until after occupancy of the facility.

Quality Assurance Program

Poor quality management can lead to rework, customer dissatisfaction, higher costs, and missed deadlines. Many projects can fall short of client expectations because the project manager didn't think ahead about how he or she was going to manage quality on the project. The WorkingBuildings Quality Management Plan (QMP) identifies the client's expectations for quality and spells out the project manager's plan to meet those expectations.

The WorkingBuildings QMP is integrated into all aspects of our work, from back office procedures to actual client work reflected in our commissioning plan. The overall goal of the WorkingBuildings QMP is to conduct consistent and effective processes so that work performed conforms to the contract requirements. All commissioning services will be performed and documented for the purpose of evaluating the effectiveness of our work processes, identifying and documenting non-conforming work and ensuring that the facility meets the required program commissioning service requirements.

WorkingBuildings' internal inspection process reviews compliance of our work with the contract requirements. Any indication of system deficiencies, whether discovered as a result of the Owner's or WorkingBuildings' checks and tests, will result in appropriate action to address the deficiencies.

Each WorkingBuildings commissioning project manager has overall responsibility for the successful completion of any project work. The project manager is responsible for overseeing the day-to-day commissioning activities and directing his or her team in the delivery of commissioning services. The project manager assures that all required tests and documentation are completed and that the results are reported in the timeframe required.

Every WorkingBuildings project also has a firm principal responsible for overseeing and reviewing the actions of the project manager. The principal conducts quality review meetings with the project manager to review project findings and upcoming tasks. The principal reviews corrective measures suggested by the commissioning team on a monthly basis during periods of activity.

WorkingBuildings maintains an experienced and highly professional staff that is accustomed to the responsibility entailed by commissioning programs. We conduct internal and external training to further develop and hone these skills. If problems occur, WorkingBuildings will take whatever actions are necessary to correct them including retraining, providing more supervision or removal of poorly functioning personnel.



WorkingBuildings performs an annual review of each employee in regards to services performed, adherence to company policy and contract requirements. All reviews include written documentation of performance aspects and development actions to enhance future performance.

Quality Tools

WorkingBuildings subscribes to a quality management process embedded in the commissioning program. We view commissioning as a quality management process that begins in design and ends up to one year after facility acceptance. Our program is systematic with each step building on quality, from design reviews for compliance to component level and systems level functional performance testing, to ensure the facility meets contract documentation and agreed-upon operational performance mandates.

Documenting this process, WorkingBuildings will develop a commissioning plan that will include the following sections:

- Project Overview
- Commissioned Systems
- Commissioning Team Organization
- Commissioning Team Responsibilities
- Commissioning Process
- Online Collaboration Tool CxAlloy™
- Commissioning Deliverables
- Commissioning Specifications
- Owner's Performance Requirements

Communications

Facilitating communications is a key component of the commissioning process and one of the strengths of WorkingBuildings. To enhance communications for expanded collaboration between the many stakeholders of a project WorkingBuildings will use the CxAlloy™ documentation and project management tool.

CxAlloy is a secure, access-controlled, web-based database that allows the entire project team to exchange, track and download data and documents for any number of projects. CxAlloy provides access to all equipment lists, tests, site observations with photos, reports, document storage, and O&M references and records. The software is an integrated part of the WorkingBuildings commissioning program. The database is fully customizable and can be accessed from any Internet location worldwide. The data can also be easily transferred between our CxAlloy system and your existing facility maintenance program.

The Owner will be able to designate what team members are permitted access and to what extent the team members have access. User access can be limited to "view only" or can extend as far as to upload and download documents, close issues and enter data. These checks and balances allow the team to have greater control when tracking issues and maintain accountability with the appropriate team member.

Tracking

CxAlloy allows for real-time tracking of issues, test results, reports and the latest versions of drawings or other project documents. The Project Summary feature provides the status of your project at a glance. Graphs and charts quickly advise you of key project performance indicators. Our process evaluates the number of critical issues on a project and provides a breakdown by trade to let you pinpoint the problem areas. CxAlloy also links individual pieces of equipment and their respective issues.

Site observations include such information as issue descriptions, recommended actions, associated equipment, priorities and pictures. These reports are searchable and can be sorted by any number of categories such as responsible party, discipline, equipment or priority.



Document Storage

Store and retrieve the latest versions of all project documents. As-built drawings, Owner's Performance Requirements, warranty information, and O&M manuals are just some of the documents that can be stored on CxAlloy. Documents can be maintained and updated throughout the life of the facility. Blank test procedures can be stored here to enable continuous commissioning and preventive maintenance. All documents are protected by designating who has privileges to edit or upload documents.

Equipment

All asset information is stored here during project setup and can continue for the life of the facility. The program allows us to record valuable information such as manufacturer, model number, serial number, location, spare parts list, prior service records and more. CxAlloy also allows information to be exported to a client PMS system, or it can be maintained as a lifecycle maintenance tool for the life of the facility.

CxAlloy is one of the many ways the WorkingBuildings team differentiates as a commissioning provider. At WorkingBuildings we have a completely integrated QMP that combines our vision, mission, trained and dedicated staff, and 21st century tools for the collective resource for all the project stakeholders. From early planning to functional testing, our QMP defines our actions and successes. The process is living and improved on a continuous basis from real world lessons found on each project. We continually update and document decisions, outcomes and goals that may change throughout the project. Ultimately, based on a proven quality management process, we enhance the understanding of each stakeholder's responsibility and aid in the delivery of a facility with one unified goal.



Project Cost Control

Commissioning can be used as a tool to ensure that the impact of the commissioning program including any and all of the planned tasks and deliverables will meet with the expected project outcome. This can only occur if the implementation of the process is shared and accepted by the stakeholders. WorkingBuildings will provide the general contractor a complete commissioning schedule for all activities that can be imported into the general contractor's master schedule. This can serve as a "pre-check of readiness" that all preceding activities leading up to a commissioning task have been executed. As a benefit, since all our tasks are included in the master schedule any change to the general schedule will automatically update our tasks and reduce the potential for rework or unproductive time due to poor coordination.

We will provide this process for each system and trade that commissioning impacts to facilitate a timely and efficient process that ensures shared systems do not negatively impact the project budget, schedule, testing activities, or Owner's facility team.

WorkingBuildings will also use a tool that tracks completion of milestones of the trade contractors in order for us to constantly monitor readiness of the systems to test. The secondary benefit of this is we can predict negative trends by trade(s) that can potentially affect the entire project. We then can bring this to the attention of the Owner or management team prior to job dissatisfaction to ensure the trade does not bring the entire project down or negatively impact the project budget. This feature is part of the CxAlloy Suites, a WorkingBuildings customized tool available to all stakeholders.

Lastly, in terms of meeting the project schedule with the appropriate manpower, WorkingBuildings can support this project without manpower burden. As with our approach to commissioning, we will apply a systematic process to our implementation of a defined and accurate schedule. Working along with your general contractor we will make sure our information is up to-date, accurate and will document compliance of the systems to ensure that they meet your intent and are within budget limits.

RFQ No. DEFK11023

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (West Virginia Code §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: WorkingBuildings

Authorized Signature: [Signature] Date: January 18, 2011

State of Georgia

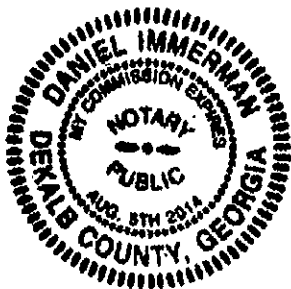
County of Cobb, to-wit:

Taken, subscribed, and sworn to before me this 18th day of JANUARY, 2011.

My Commission expires 8/5/2014, 20 .

AFFIX SEAL HERE

NOTARY PUBLIC



Purchasing Affidavit (Revised 12/15/09)