



General Services Administration GSA Advantage! Catalog and Price List

Facilities Maintenance and Management (03FAC)
Solicitation Number: 6FEC-E6-030292-B
Refresh Number: 20



Contract Number: **GS21F149AA**
Contract Period: **July 1, 2013 through June 30, 2018**

SIN: 871-206 (Building Commissioning Services)
SIN: 871-207 (Energy Audit Services)
SIN: 811:005 (Refrigeration, HVAC, Test & Balance)



C & W – TESCO, Inc.
430 Southlake Boulevard
Suite B12
North Chesterfield, VA 23236

DUNS Number: **191429885**



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Veteran Owned Small Business

On-line access to contract ordering information, terms and conditions, up-to-date pricing, and the option to create an electronic delivery order are available through GSA Advantage!, a menu-driven database system. The Internet address of GSA Advantage! is: <http://www.GSAAdvantage.gov>.



1a. Awarded Special Item Numbers (SINs):

871-206 – Building Commissioning Services

- Fundamental and Enhanced Commissioning
- Retro-Commissioning
- Re-Commissioning
- MEP Commissioning
- Monitoring Based Commissioning
- Commissioning for LEED

871-207 – Energy Audit Services

- Data Collection & Analysis
- Benchmarking
- Develop Facility Improvement Measures (FIMs)
- Develop Energy Conservation Measures (ECMs)
- Energy Star
- LEED Consulting

811-005 – Refrigeration, HVAC, Test & Balance

- Testing, Adjusting and Balancing (TAB)
- Duct Air Leakage Testing (DALT)
- Sound Testing
- Fume Hood Testing and Certification

1b. Lowest priced model number and price for each SIN: Refer to attached awarded GSA Schedule Contract pricelist.

1c. Job titles and hourly wages: Refer to attached awarded GSA Schedule Contract pricelist.

2. Maximum Order: \$1,000,000.00

3. Minimum Order: \$200.00

4. Geographical Coverage: Domestic Delivery, V – 48 States, DC

5. Points of Production: Services to be performed on project site.

6. Basic Discount from Commercial Prices: 10%

7. Quantity Discounts: 1% for task orders over \$50,000

8. Prompt Payment Terms: 00.00% Net 30 Days

9a. Notification that Government purchase cards are accepted at or below the micro-purchase threshold: C & W-TESCO, Inc. will accept Government purchase cards for orders below the micro-purchase level.

9b. Notification whether Government purchase cards are accepted or not accepted above the micro-purchase threshold: C & W-TESCO, Inc. will accept Government purchase cards for orders above the micro-purchase level.

10. Foreign items: Not Applicable

11. Time of delivery after receipt of order (ARO):

- Normal: Per task order
- Emergency: Per task order
- Expedited: Per task order



12. F.O.B. point(s): Destination

13a. Ordering Address:

C & W – TESCO, Inc.
430 Southlake Blvd, Suite B12
North Chesterfield, VA 23236

13b. Ordering Procedures: For supplies and service, the ordering procedures, information on Blanket Purchase Agreements (BPA's) are found in Federal Acquisition Regulation (FAR) 8.405-3.

14. Payment Address:

C & W – TESCO, Inc.
430 Southlake Blvd, Suite B12
North Chesterfield, VA 23236

15. Warranty provision: Not Applicable

16. Export packing charges: Not Applicable

17. Terms and conditions of Government purchase card acceptance: Government purchase cards are accepted.

18. Terms and conditions of rental, maintenance, and repair: Not Applicable

19. Terms and conditions of installation: Not Applicable

20. Terms and conditions of repair parts indicating date of parts price lists and any discounts from list prices: Not Applicable

20a. Terms and conditions for any other services: C & W – TESCO, Inc. complies with all previously stated and agreed upon terms and conditions.

21. Service and distribution points: Same as Points of Production (Item 5)

22. Participating dealers: Not Applicable

23. Preventative maintenance: Not Applicable

24a. Special attributes such as environmental attributes: Not Applicable

24b. Section 508 compliance: 552.238-74 – Industrial Funding Fee and Sales Reporting (JUL 2003)

25. Data Universal Number System (DUNS) Number: 191429885

26. Notification regarding registration in Central Contractor Registration (CCR) database:

C & W – TESCO, Inc. is registered with the Central Contractor Registration Database Cage Code: 60XL8





GSA Approved Schedule Contract Hourly pricelist:

SIN(s) Proposed	Service Proposed (e.g. Labor Category or Job Title / Task)	Price Offered to GSA (Including IFF)
871-206	Certified CxA - I	\$ 90.68
871-206 871-207	Certified CxA - II	\$ 90.68
871-206	Certified CxA - III	\$ 90.68
871-206 871-207	Certified CxA - IV	\$ 90.68
871-206	Certified CxA - V	\$ 90.68
871-206	Certified CxT - VI	\$ 90.68
871-206 871-207	CxA Technician	\$ 77.08
811-005	Air Balancing Engineer I	\$ 77.08
811-006	Air Balancing Engineer II	\$ 77.08
811-005	Air Balancing Engineer III	\$ 77.08
811-005	Air Balancing Agent I	\$ 77.08
811-005	Air Balancing Agent II	\$ 77.08
811-005	Air Balancing Technician	\$ 68.01

LABOR CATEGORY DESCRIPTION

- Certified CxA -I** Principal: Principal / Partner of firm has overall responsibility for management and operation of commissioning division. Has achieved this position by virtue of experience, ability and investment. Provides high level technical guidance and review of senior staff. Partners formulate, implement and oversee the strategic plan that guides the direction of the business.
- Education Level: ACG Certified Commissioning Authority, AABC Certified Test and Balance Engineer, Bachelor of Architecture Degree
Years of Experience: Over 25 years experience in HVAC
- Certified CxA -II** Project Manager: Certified Commissioning Authority specializing in retro-commissioning. Makes decisions independently regarding commissioning and retro-commissioning issues and has responsibility for project planning, organization and successful completion. Board of Directors member
- Education Level: ACG Certified Commissioning Authority, ECM Certification, AABC Certified Test and Balance Engineer, NEBB Certified Test and Balance Technician, Bachelor of Science Degree
Years of Experience: Over 20 years experience in HVAC
- Certified CxA -III** Project Manager: Certified Commissioning Authority specializing in Retro-Commissioning. Makes decisions independently regarding commissioning and retro-commissioning issues and has responsibility for project planning, organization and successful completion. Minimum of 8 years experience required.
- Education Level: NEBB Certified Commissioning Authority for Green Buildings and Retro-Commissioning, NEBB Certified Professional for Air and Hydronics and Fume Hood Testing
Years of Experience: Over 25 years experience in HVAC
- Certified CxA -IV** Certified Commissioning Authority: Expertise in providing technical field commissioning of building systems for both commissioning and retro-commissioning projects. Provides building systems inspection, commissioning tests and system adjustments as required to verify or produce system performance. Minimum of 8 years experience required.
- Education Level: ACG Certified Commissioning Authority, AABC Certified Test and Balance Engineer, Licensed Journeyman Mechanical and Plumbing
Years of Experience: Over 40 years experience in HVAC

LABOR CATEGORY DESCRIPTION

Certified CxA -V

Certified Commissioning Authority: Expertise in providing technical field commissioning of building systems for both commissioning and retro-commissioning projects. Provides building systems inspection, commissioning tests and system adjustments as required to verify or produce system performance. Minimum of 8 years experience required.

Education Level: ACG Certified Commissioning Authority, AABC Certified Test and Balance Technician
Years of Experience: Over 20 years experience in HVAC

Certified CxT -VI

Commissioning Specialist: Performs initial and follow-up onsite inspections for new buildings, major modernization projects, and existing energy consuming facilities to ensure the building systems are designed and built to operate as efficiently as possible. Also provides commissioning and retro-commissioning services. Minimum of 10 years experience required.

Education Level: ACG Certified Commissioning Technician, AABC Certified Test and Balance Technician, Master Mechanical Card

Years of Experience: Over 30 years experience in HVAC

CxA Technician

Commissioning Technician: Expertise in providing technical field Testing, Adjusting and Balancing (TAB) of building systems. Provides field assistance to CxA as required to verify or produce system performance. Minimum of 4 years TAB experience required.

Education Level: AABC Certified Test and Balance Technician, High School Diploma

LABOR CATEGORY DESCRIPTION

Air Balancing Engineer I

Principal: Principal / Partner of firm has overall responsibility for management and operation of Testing and Balancing division. Has achieved this position by virtue of experience, ability and investment. Provides high level technical guidance and review of senior staff. Partners formulate, implement and oversee the strategic plan that guides the direction of the business.

Education Level: NEBB Certified Professional -Air & Hydronic Systems, Bachelor of Science Degree
Years of Experience: Over 25 years experience in HVAC

Air Balancing Engineer II

Project Manager: NEBB Certified Professional specializing in air and water balancing. Makes decisions independently regarding testing and balancing issues and has responsibility for project planning, organization and successful completion. Minimum of 8 years experience required.

Education Level: NEBB Certified Professional -Air & Hydronic Systems, Bachelor of Science Degree
Years of Experience: Over 25 years experience in HVAC

Air Balancing Engineer III

Project Manager: AABC Certified Test and Balance Engineer (TBE) specializing in air and water balancing. Makes decisions independently regarding testing and balancing issues and has responsibility for project planning, organization and successful completion. Minimum of 8 years experience required.

Education Level: AABC Certified Test and Balance Engineer, High School Diploma

Years of Experience: Over 25 years experience in HVAC

Air Balancing Agent I

Certified Technician: AABC Certified Test and Balance Technician. Expertise in providing technical field Testing, Adjusting and Balancing (TAB) of building systems. Provides field assistance to TBE as required to verify or produce system performance. Minimum of 4 years TAB experience required.

Education Level: AABC Certified Test and Balance Technician, High School Diploma

Years of Experience: Over 4 years experience in HVAC

LABOR CATEGORY DESCRIPTION

Air Balancing Agent II

Certified Technician: NEBB Certified Technician. Expertise in providing technical field Testing, Adjusting and Balancing (TAB) of building systems. Provides field assistance to project managers as required to verify or produce system performance. Minimum of 4 years TAB experience required.

Education Level: NEBB Certified Test and Balance Technician, High School Diploma

Years of Experience: Over 4 years experience in HVAC

Air Balancing Technician

Technician Trainee: Apprentice provides technical assistance to air balancing agents. Apprentice works directly with project managers and certified technicians to learn the art of air and water balancing. Minimum of 1 years experience required.

Education Level: A High School Diploma

Years of Experience: Over 1 year experience in HVAC



C & W - TESCO is a firm specializing in independent building commissioning (Cx) for new construction, retro-commissioning (commissioning of existing buildings - EBCx), investigation and evaluation of existing building equipment/systems, operational problems and TAB. When it comes to independent, third party commissioning as required by LEED, we are the firm of choice.

C & W - TESCO is comprised of experienced Commissioning and TAB professionals who hold certifications from NEBB, AABC/ACG and BCA for commissioning, retro-commissioning and TAB. We are an GSA and eVa-approved services provider and a veteran-owned firm.

C & W - TESCO has a positive reputation in building commissioning, equipment/systems troubleshooting, energy efficient operation surveys and IAQ issues. Our approach to commissioning is a technical, hands-on verification in the field to ensure your building project is completed and operating correctly.

What is Building Commissioning?

Commissioning is a planned and integrated systematic process to ensure through documented verification that all building equipment/systems operate according to design intent. The commissioning process requires a collaborative team effort and can begin in the pre-design phase and continue through all phases of construction, initial occupancy, training of O&M staff, preventive maintenance program review and warranty period.

Benefits from commissioning can be achieved no matter when the process starts. The earlier the commissioning process begins the greater the potential benefits.

Commissioning provides the building owner/operator assurance of a correctly operating, sustainable and maintainable building at completion of construction. The owner/operator can be confident in continued correct operation because of proper equipment and system installation, documentation and staff training.



The cost savings of a commissioned project:

- Minimize design problems
- Reduced project delays
- Reduced change orders
- Correct start-up requirements
- Shorten building turnover period
- Reduced post occupancy corrective work
- Improved quality of indoor working environment
- Increased building system/equipment reliability and maintainability
- Reduced energy and operating cost for more efficient energy use
- Increased value as a result of better quality construction



The deficiencies most often discovered by commissioning new and existing buildings:

- Incorrect installation in new construction
- Improper replacement equipment
- Improper maintenance of existing systems
- Incorrect heating and cooling sequence of operation
- Lack of building control strategies for optimum comfort and efficient operation
- Premature failures due to improper operation and sequencing of HVAC equipment
- Specified and paid for equipment not installed
- O&M manuals not specific to installed equipment
- Problems resulting from lack of training for staff maintenance personnel
- Lack of documentation for equipment/systems problems during warranty period

What is Retro-Commissioning?

Commercial buildings across the United States have a common problem: They seldom perform at design level. Optimum level provides the most comfortable and safe indoor environment for the occupants while balancing operation and maintenance costs for the owners. Retro-Commissioning (commissioning existing buildings - RCx) is a systematic process that helps solve this problem by allowing a building's HVAC system and integrated building controls to operate at peak performance. Retro-Commissioning building systems can provide significant benefits such as improving occupant comfort, reducing energy cost, improving Indoor Air Quality (IAQ), enhancing building operations, and extending equipment life.

Retro-Commissioning is a holistic approach to discovering the deficiencies that exist in a facility's HVAC and control system. This approach also is extended out to the building envelope, which often is a significant contributor to comfort problems and energy waste. Envelope problems such as leaking windows, inadequate insulation in roof and wall connections, and unsealed penetrations in walls and slabs are typical and have a direct impact on the performance of HVAC systems.

These problems are common. In a study of 60 new buildings by Lawrence Berkeley National Laboratory, it was determined that:

- 50% suffer control problems;
- 40% suffer HVAC problems;
- 15% have missing equipment;
- 25% have facility management systems / economizers / drives that don't function;
- 60% of insurance claims are related to HVAC problems;
- The #1 source of complaints is related to HVAC problems.

In addition to the older, existing building market, some of the best candidates for RCx are new buildings that were not commissioned and have had problems with the HVAC system after being turned over and occupied. RCx is a management tool that building owners and managers can implement to help solve the challenges of assuring a safe and comfortable indoor environment for the building occupants, with the least cost of operating and maintaining the facility.



What is Energy Auditing?

Clients pursue energy management projects for many different reasons. The EMP must pay careful attention to understanding the unique motivations for each project, because these will serve as the basis for affirmation of quantitative goals, development of project scope, and evaluation of progress. The motivations will have substantial impact on the first few phases of the AABC Energy Management Process. These objectives will influence the scope of energy management activities. During the project, the EMP may identify both energy conservation and facility improvement measures.

- **Energy conservation measures (ECMs)** are recommended improvements that are intended to reduce building energy consumption and provide energy payback. The cost associated with an ECM is irrelevant in terms of its classification as an ECM. Some ECMs require little or no expense and have shorter payback, while others are capital-intensive and have longer payback. All ECMs have some energy benefit to the extent that they produce energy savings.
- **Facility improvement measures (FIMs)** are recommended improvements that are often, but not always, related to operational performance. They provide benefits that cannot be measured in the form of energy payback. An improvement that provides primarily non-energy benefits, as well as some relatively small energy benefit that does not produce a quantifiable energy payback, should typically be classified as a FIM. As with ECMs, the cost of FIMs can vary widely. In applying the FIM label, improvement of the facility without energy payback is the deciding factor, even if the nature of the improvement does not impact operations. For example, installation of a fire suppression system, while certainly improving the facility and bearing some cost, has no energy or operational impact, but would still be classified as a FIM.

In addition to ECMs/FIMs, the development of a plan for **existing building commissioning (EBCx)** will also be informed by the project goals. The EBCx process ensures that systems that are expected to remain in the building following project completion are operating as efficiently as possible and in accordance with the building's needs. EBCx is a critical, non-optional part of the AABC Energy Management Process.

Alternative terms for commissioning services for existing buildings include recommissioning, retro-commissioning, continuous commissioning, monitoring-based commissioning, and similar terms. EBCx can lead to the implementation of improvements that solve complex or persistent problems. The EMP combines ECMs/FIMs and EBCx to improve building performance more comprehensively than either one could alone.





For all projects, regardless of which kinds of planning documents are developed, the EMP must be aware of the typical reasons for pursuing energy management. Nevertheless, the EMP may encounter client motives that he or she has not heard previously. The EMP should be prepared for a client to offer new, different, or unexpected rationale for a particular project.

Common catalysts for pursuing energy management include:

- **Signs of Inefficiency and Poor Performance**

The client may communicate that utility bills seem too high, occupants complain about poor indoor air quality, or the building incurs high equipment repair costs. Energy management in this case is pursued as a means to resolve problems and improve the building.

- **Legal Requirements**

Whole building concerns or regulations regarding a specific system or piece of equipment may warrant a review of mechanical and electrical components. Code violations, for example, are a key driver of retrofits.

- **Long-term Facility Planning**

The development of plans for the replacement of existing building systems or other large-scale building renovations may require the services of an EMP.

- **Organizational Planning**

The client may wish to integrate the project building's energy management process into an energy plan or sustainability plan that is being administered by the larger organization.

- **Third-Party Analysis Needs**

A client that is not the building owner may require the independent services of the EMP or additional expertise for a certain type of building or building system. This is a frequent occurrence when utilities or energy service companies are clients.

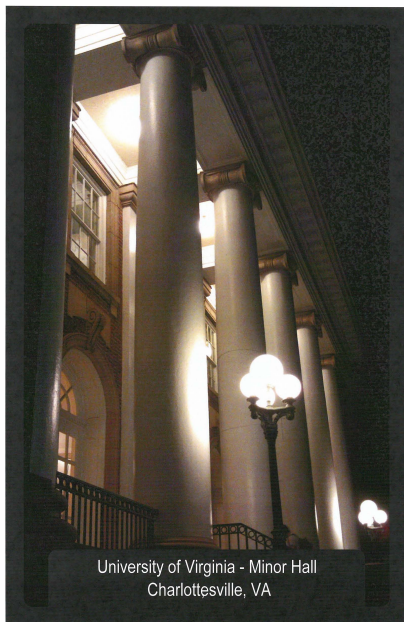


Wytestone Building 801 East Main Street
Richmond, Virginia



What is Testing, Adjusting and Balancing?

TAB is the commonly used acronym for the process known as Testing, Adjusting and Balancing. The objective of TAB is to test, adjust and balance complete air and hydronic distribution systems. C&W-TESCO performs certified total system balancing which is the process of testing and balancing the HVAC systems to perform as the engineer has designed and operate at optimum levels. C&W-TESCO provides a comprehensive service that consists a of review of the design documents to determine “balance ability” of the engineer’s design, observation of the construction process, and a detailed procedure to test and balance all HVAC systems to achieve optimal performance with repeatable results.



During the design phase, the Testing and Balancing Engineer (TBE) works with the design team contributing an analysis and suggestions through practical experience with various types of HVAC systems. C&W-TESCO also ensures the following during the design process: that the contractor is informed what it is they must accomplish before the project is handed over for TAB, identifying any special testing that will be required, and identifying necessary training of personnel operating the HVAC systems.

During the construction phase, C&W-TESCO develops a TAB Plan. The TAB Plan consists of submitting certified procedures for the engineer’s approval, creating forms based on submitted equipment specific to the project, and providing a “system readiness checklist” for the mechanical and controls contractors to review, ensuring all HVAC systems are ready for testing, adjusting and balancing. Also during the construction phase, C&W TESCO will visit the project to make observations of the ductwork, piping, building envelope, and HVAC equipment and determine if everything observed is being installed correctly.

During the TAB process, C&W-TESCO performs testing, adjusting, and balancing on all HVAC equipment and calibrates controls while producing a concise report for the entire HVAC system reflecting design intent of the system and recorded performance data. Any system that is found to be deficient or performing outside of the designed tolerances is noted in the TAB report. After the report is completed and certified, it is offered to the engineer for verification and acceptance.

- ***Duct Air Leakage Testing (DALT)***

All duct systems are subject to leakage. The ideal air duct system is air tight. Due to variations in design, material installation methods and quality of craftsmanship some leakage can be expected in all systems. Duct leakage affects the efficiency of the HVAC system or building because the amount of conditioned air delivered to the conditioned space is reduced. This requires the HVAC equipment to move more air or produce more conditioned air in order to maintain required space conditions. This causes excess use of energy and more wear on equipment. C&W-TESCO performs DALT in accordance to SMACNA standards.



- **Fume Hood Testing (FHT)**

The NEBB Fume Hood Testing (FHT) Certification is modeled after the ASHRAE-110 standard. The ASHRAE-110 is a three part test that includes measurements of face velocity, air-flow visualization, and tracer gas containment. This exhaustive test protocol goes beyond face velocity measurement to test the ability of a fume hood to contain and exhaust fumes. C&W-TESCO can perform the NEBB-FHT and provide certification documentation for each fume hood tested.



C & W - TESCO would welcome the opportunity to assist you in correcting current equipment/systems problems and/or discuss with you the benefits of commissioning your next construction project.



We can develop the scope of work you desire for your project and tailor commissioning requirements to your specific construction or renovation project. Our efforts do not take away from or reduce the responsibilities of the project development team or the construction contractors.

C & W - TESCO merely helps ensure you receive a finished and correctly operating building once construction is complete.

REFERENCES:

- AABC Commissioning Group (ACG)
- National Environmental Balancing Bureau (NEBB)
- California Commissioning Guide: New Buildings
- Commissioning For *LEED*®
- Building Commissioning Association (BCA)