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SCHEDULE 03FAC
FACILITIES MAINTENANCE AND MANAGEMENT
Building Commissioning Services

Contract Number: GS-21F-105AA
Contract Period: 04/01/13 – 03/31/18

For more information on ordering from Federal Supply Schedules click on the FSS Schedules button at fss.gsa.gov.

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TMCx Solutions, LLC is a small business.

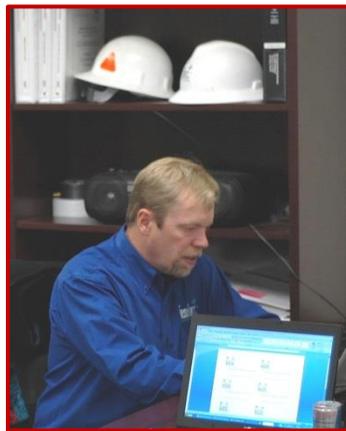


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“Very professional, responsible, and my #1 choice for Cx!”

From a Customer Satisfaction Survey response for the HHS Phoenix Field Office project

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Cristi Leafstedt, MA
CEO

As the CEO and majority owner, I pledge you'll receive dedicated, knowledgeable staff who are passionate about improving your energy efficiency, ensuring optimally functioning building systems, and enhancing indoor air quality for the health and productivity of building occupants. And, to make everything more convenient for you, we offer a blended rate, simplifying the invoicing process and presenting a clear picture of your remaining project hours.

In 1998, we were a part of the first wave of commissioning companies and one of the few who could boast that our income was made 100% from providing building commissioning. We still can. Commissioning is not a sideline for us; it's who we are and what we do. In fact, we've commissioned over 1,375 projects – now that's a lot of experience under our belts!

Today, commissioning is more common and more competitive—two factors that often create compromise in our industry and can actually dilute the outcomes and value of the commissioning process for customers. Concessions that impact the integrity of the commissioning process are not an option for us.



Mark Leafstedt, PE
President

Mr. Leafstedt,

I wish to thank you and the members of your team for the conscientious professionalism Testmarc has portrayed in the commissioning efforts for the renovation of TBUP Starship Bldg 6050 here at Fort Sill. I not only appreciated their professionalism in the field but, even more so, appreciate the end result, a complete and thorough package that the end user and owner can put his hands on and be proud of. I have reviewed close to three dozen Commissioning Reports and Systems Manuals on the various Commissioning Teams I have served on here at Fort Sill and, by far, your team has outshined them all.

Will Corley, Contract Mech. Eng. Tech., Fort Sill Area Office, US Army Corps of Engineers

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"I can only say positive remarks about the TMCx Team on my Fort Sill project. They did an excellent job for Sundt and I would highly recommend this team to anyone and would want them on my future projects. Mr. Martinez went above and beyond any expectations ..."

Mike Mahoney, Project Manager, Sundt Construction



"Loren and TestMarcx have always exceeded our expectations, and provided exceptional service! It is always a pleasure to work with Loren."

Brooke B., Owner, Ecological Environments



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OUR MISSION, PHILOSOPHY, AND VALUES

Our longevity and breadth of project experience distinguish us from other providers. From the beginning, our philosophy and approach have underscored our commitment to total building performance verification and energy efficiency solutions for your projects. It is rare to find one partner who:

The TMCx Difference

- ◆ Independent of design and products
- ◆ Collaborative – shoulder to shoulder, not over your shoulder
- ◆ Communicative - project updates weekly
- ◆ Responsible and Trustworthy

- ◆ Is *independent* of design and equipment product lines
- ◆ Offers *field expertise* spanning a variety of areas, such as engineering, controls, life safety, T&B, electrical, building envelope testing, and staff training
- ◆ Takes *energy efficiency*, preserving external environmental resources, and promoting internal environmental health for people *seriously*

underscored our commitment to total building performance verification and energy efficiency solutions for your projects. It is rare to find one partner who:

- ◆ Truly *collaborates* with your team, working with you shoulder to shoulder, NOT over your shoulder, meeting your timelines and milestones, with few change orders
- ◆ *Takes responsibility* for the process and for our actions, by confronting issues straightforwardly, counteracting adversity, and instigating creative solutions
- ◆ Is *accountable* to stakeholder comments and acts on them to improve team performance throughout the project (serious about commissioning our commissioning!)

Our Mission: Provide a suite of integrated Building Performance Verification Solutions that validate and document system functionality in collaboration with building stakeholders, resulting in sustainable buildings, enhanced work productivity, decreased energy consumption, and educated O&M staff!

| Our Core Values | |
|------------------------|---------------------|
| ◆ Responsiveness | ◆ Accuracy |
| ◆ Accountability | ◆ Critical Thinking |
| ◆ Respectful Behavior | ◆ Integrity |

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Our Office Locations

| | | |
|--|----------------------|---------------------|
| ➤ California – San Diego, Los Angeles, and San Francisco | | |
| ➤ Arizona – Tempe, Tucson | ➤ Nevada – Las Vegas | |
| ➤ New Mexico - Albuquerque | ➤ Texas – El Paso | ➤ Colorado – Denver |

Our Project History through 2012

| | |
|-------------------------------------|---|
| ➤ 126 Military | ➤ 207 Government - city, county, state, federal |
| ➤ 413 LEED projects | ➤ 101 Critical Buildings/Data Center Systems |
| ➤ 314 K-12 Schools | ➤ 149 Hospitality – Casinos/Hotels/Recreation |
| ➤ 105 Academic - University/College | ➤ 192 Central Plants |
| ➤ 114 Hospitals/Medical | ➤ 244 Retro Commissioning/Energy |

TMCx has completed 1,375 Projects

Our Enriched Service Level includes:

- ◆ 'Ball-park' calculations on your energy savings after commissioning



“TestMarcx (TMCx) was a great partner and easy to work with. All employees were very willing to help and meet project schedule demands.”

Matthew Silver, Project Manager
Hensel Phelps military BCT, COF, and TEMF projects

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WHAT ARE YOU SERIOUS ABOUT?

Most owners and building industry professionals know that *TMCx Solutions* is synonymous with commissioning of new construction and existing buildings. After all, it's been our core business since 1998 and the one on which we built our reputation.

What you may not know is we've been advocating for energy efficiency the whole time. In fact, that's one of the reasons we commission—we know the inherent energy savings realized when buildings perform optimally.

Our established **Suite of Solutions** is designed to enhance buildings in a variety of energy conservation and performance areas. Whether you are seeking to raise the bar on your next project or grappling with chronic issues in an existing facility, TMCx Solutions has the right selection of services that get results.

SERVICE SOLUTIONS FOR OPTIMAL ENERGY EFFICIENCY AND BUILDING PERFORMANCE

Our objective is to lead the building commissioning industry in providing an effectively-managed suite of integrated performance verification and energy efficiency solutions for your buildings.

- ♦ Commissioning –New Construction (MEP Cx), Existing Buildings (Retro Cx) and On-Going/Re-Cx
- ♦ Energy Audits, Analysis, and Models
- ♦ Building Envelope (Air Barrier) Testing
- ♦ LEED Commissioning (Fundamental, Enhanced, & EB-OM)
- ♦ Measurement and Verification (M&V) Plans
- ♦ Life Safety Commissioning and Smoke Control Recertification
- ♦ O&M staff training on problem-solving your unique building issues



“Jeff was exceptionally helpful and responsive to the needs of the City of Albuquerque. He was always looking out for our best interests, was friendly, and knowledgeable. I would highly recommend TMCx for future projects.”

Keith Reed, Construction Services Division, City of Albuquerque

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COMMISSIONING SERVICES



Darek Bombala, CxA
VP of Operations

Our commissioning process for new and existing building commissioning has changed over the years. And I should know — I've been with TMCx Solutions since 2000 and now head up Operations. We've been working smarter for a long time now and have created some unique in-house processes that ensure projects meet your timeline and budget parameters. Mainly, we've implemented Weekly Written Reports. The commissioning process demands communication, and you'll receive updates of your projects' progress consistently.

EXISTING BUILDING COMMISSIONING (RETRO COMMISSIONING)

TMCx breaks this service into **three distinct options** to meet your unique existing building and budget needs.

OPTION 1 FORENSIC EXISTING BUILDING COMMISSIONING

solves a specific problem that's preventing your building from performing adequately

Are you getting on-going tenant complaints about inadequate comfort, odors or noises that disrupt job performance and your building just isn't that old? The goal of forensic existing building commissioning is problem based. Our goal is to determine what the 'real' problem is in your system that's causing the complaints. We do this by investigating current building performance; analyzing data, equipment, and systems to meet the owner's project requirements; presenting no cost/low cost recommendations; and testing equipment functionality after implementation.

John C. Lincoln Deer Valley Hospital, Phoenix, Arizona - Forensic Retro Commissioning



Project Size: 450,000 square feet, 5 floors

Results: TMCx identified over \$150,000 of energy savings per year with an overall simple payback of 2.5 years. In addition to the energy savings opportunities, TMCx also identified multiple Facilities Improvement Measures, resulting in improved operations and maintenance efficiency.

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**Poston Butte High School Campus, Administrative and Library Areas, Florence, Arizona
Retro Commissioning Project requiring Forensic Mechanical Expertise**



Project Description: Consistent complaints by occupants of being too hot, as well as concern for the capacity of the Central Plant to adequately service the campus, prompted the Florence Unified School District to hire TMCx Solutions to investigate and analyze the environmental conditions in these areas. **Project Size:** 275,000 square feet

Scope of Work: We reviewed, investigated and analyzed the design documents and the installed systems serving the areas of concern, including the Central Plant, Ventilation Ductwork/Piping, and Air Handling Units.

Results: Our investigation and thermal scan of the library exterior walls found they were not insulated, which lead to a heat load higher than anticipated. In addition, the AHUs serving the library were found to be under sized in terms of cooling capacity and air flow. In the admin areas, the return air path was blocked by structural walls going to the roof deck. As a result of the process, the walls were properly insulated, modifications were made to the AHUs to provide the adequate cooling capacity required by the library, and the structural walls were modified to accommodate the proper return air flow.

Freeport-McMoRan Tech Center, Tucson, Arizona - Forensic Retro Commissioning



Project Size: 85,000 square feet

Scope: This customer needed to determine where their newly acquired building systems were functioning optimally, and if so, could the existing equipment function to meet their lab application. TMCx accessed, investigated, and analyzed the Air Handling Units and Chiller Plants.

Results: TMCx identified 12 issues that would directly impact the ability of the equipment to function to the Owner’s stated requirements. An additional 10 Facility Improvement Measures were identified that were fixed at no or low cost. After presenting the Energy Conservation Measure suggestions, the Owner was able to successfully implement the changes without costly equipment repair.

Our Enriched Service Level includes:

- ♦ On-going Internal Technical Training



OPTION 2 ENERGY-BASED RETRO COMMISSIONING

identifies inefficient use of electricity, natural gas, and water

Are high utility bills eating away at your budget? We have assembled a team of energy experts with more than 20 years of experience, who calculate potential energy savings for all operational and capital recommendations, letting you know how much you'll save and how long it will take to recoup your investment. We provide:

- Analysis and modeling of a facility's energy use
- Measurement and verification of mechanical and electrical systems
- Cost-effective, low or no-cost operations & maintenance recommendations for improving energy efficiency
- Development of accurate implementation cost estimates for recommended improvements
- Determination of life-cycle economic benefit
- Baseline and alternative energy models using eQuest (DOE 2.2) or other approved energy modeling software
- An understanding of ASHRAE energy standards and local utility rebate programs
- Title 24 analysis and documentation (CA)
- Management of the implementation of energy-efficient retrofits

Chatsworth Courthouse, Los Angeles - Energy-Based Retro Commissioning & Implementation



EEM Result Examples: The most significant efficiency measures resulted in rescheduling the operation of the main HVAC equipment by 9 hours, and upgrading the BAS controls for demand ventilation, variable primary chilled water flow, lighting reductions, day-lighting, and parking lot lighting controls.

Results: As a result of the RCx process, TMCx identified over \$162,000 of energy savings per year with an overall simple payback of 2.4 years.

Implementation Phase: TMCx is also conducting the implementation phase (a half million dollar contract), which includes managing the contractors responsible for adding, replacing, and/or fixing the equipment and systems.

Banner Del E. Webb Medical Center, Phoenix, Arizona - Energy-Based Retro Commissioning



Project Size and Building Focus: 540,000 square feet. A sampling of systems was made from the HVAC, Central Plant, and Building Automation System as it relates to the HVAC systems. These systems were then evaluated in the Central Plant building, the Main Hospital Tower, and the A/B/C Towers

Results: As a result of the RCx process, TMCx identified over \$357,012 of energy savings per year with an overall simple payback of less than one year (.77 year).

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Banner Good Samaritan Medical Center, Phoenix, Arizona - Energy-Based Retro Commissioning



Project Size and Building Focus: 1,375,000 square feet. The same sampling process was evaluated in relation to the Chiller Plant Building, the Ancillary Building, Patient Tower, West Tower, and the Rehabilitation Building.

Results: As a result of the RCx process, TMCx identified over \$220,470 of energy savings per year with an overall simple payback of less than one year.

Davis-Monthan Air Force Base, Tucson, Arizona (8 projects) Energy-Based Retro Commissioning



Project Size and Building Focus: These projects ranged between 44,000 and 54,000 square feet. We calculated energy savings and ROI, with simple paybacks for each building. Additionally, each building was given a list of no to low cost Facility Improvement Measures to implement for immediate savings. For example, in a smaller building, we saved the Air Force was a total savings of \$14,500 with a 1.1year payback. \$18,500 savings with a .81 payback. We also

did supply air temperature reset and night setback.

Our Enriched Service Level includes:

- ♦ We 'commission' our commissioning three times during the process



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OPTION 3 ONGOING COMMISSIONING

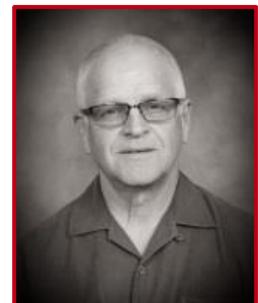
ensures early resolution of performance issues

How do you protect your investment? We all need periodic health tune-ups and so do our buildings. The objective of existing building commissioning is to determine if the performance criteria of the building systems and equipment are being satisfactorily met. Everyone knows preventive measures are far more cost-effective than attending to issues after the fact. We recommend commissioning your building every other year. This process will test your equipment and systems to ensure they meet your operational requirements, extend the systems and building life cycle, and optimize your O&M resources. Need more reasons?

- ❖ *The median lifetime of a centrifugal chiller should be 25 years, a water-cooled air conditioner 24 years, and a water-to-air heat pump 24 years.*
- ❖ *In the United States, 48.7% of energy is consumed by buildings.*
- ❖ *In a typical commercial building, 42% of energy is lost through the envelope.*
- ❖ *Americans spend about 90 percent — or more — of their time indoors. The EPA estimates indoor levels of pollutants may be two to five times higher than outdoor levels, and at times may be more than 100 times higher.*

“David Dykes was professional and a pleasure to work with. What a great team player!”

John Monteverdi, AIC General Contractor, Inc.



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COMMISSIONING OF NEW CONSTRUCTION

ensures your project will meet your design intent

How do I make sure my new state-of-the-art building will perform optimally once it's built? Since 1998, we've given owners assurance that their building is performing optimally by providing independent, third-party commissioning of mechanical, electrical, climate control, security, fire, and life safety systems. Our areas of expertise include LEED Fundamental, Enhanced, and EBOM, as well as CalGreen and CHPS; design reviews; OPR & BOD reviews; MEP and controls; and life safety.

The following profiles of recent projects demonstrate our breadth of experience in the commissioning of new construction.

Veterans Administration Medical Center-Main Hospital, North Las Vegas, Nevada



Project Description: This 150-acre hospital, known as the *Crown Jewel of the VA*, includes a 790,000-square-foot medical center tower, a 120-bed nursing home care unit, a 20-bed mental health facility, and a 47,000-square-foot energy center to house all major infrastructure equipment and system utilities. Each structure varies in height from one to seven stories.

Scope of Work and Challenges: Brought in late, TMCx was the boots-on-the-ground CxA for the main hospital project, commissioning all systems within it. By April of 2013, we were on site for the warranty phase and "on call" for 6 months, which included a 3-hour visit on site every 3 weeks to review building performance and provide problem solving assistance.

Commissioning Results: *TMCx identified 61 systems issues.*

Los Alamos National Laboratory-Radiological Laboratory/Utility/Office Building (RLUOB), Los Alamos, New Mexico



Scope of Work: TMCx provided commissioning for mechanical, electrical, and plumbing systems associated with office areas, laboratory ventilation systems, central plant, and laboratory process systems. This is a five-story, 100,000-square-foot (20,000sf per floor) nuclear support structure.

Challenges & Successes: TMCx's project manager worked with a constantly changing construction schedule to complete commissioning, while maintaining a rigid NQA-1 quality assurance standard for nuclear facilities. The last month on the project required extreme preplanning and coordination to ensure sufficient security personnel were available while conducting our testing to accommodate working with tightened security.

Commissioning Results: *TMCx identified 268 mechanical issues and 96 electrical issues.*

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FBI Headquarters, Phoenix, Arizona



Scope of Work: TMCx performed LEED Fundamental and Enhanced commissioning on the MEP, as well as the emergency power distribution systems. We also performed an integrated test (IT) which disconnects the utility power and verifies both electrical and mechanical systems operate as intended. This is a 210,200-square-foot facility with 5 floors.

Challenges: Included a constantly changing environment around the OPR, which made for an interesting project. For a critical facility, it is imperative that the MEP systems are coordinated to encounter failure modes and respond according to design. In addition, several areas within the building have small tolerance for fluctuation in temperature, humidity, and air flow. This required us to continuously monitor the environment and make small modifications to maintain the space integrity.

Fort Bliss GSAB CAB Hangars, Helicopter Maintenance Facility, El Paso, Texas



Scope of Work: As Lead Commissioning Agent, TMCx was responsible for Fundamental and Enhanced commissioning of HVAC, mechanical, electrical, and plumbing systems. This project consisted of eight separate buildings totaling 691,000 square feet.

Results: During an early walk-through, our Texas Solutions Team noticed the chiller had been piped incorrectly. Uncovering this issue early saved the project extensive expenses, as well as time.

Our Enriched Service Level includes:

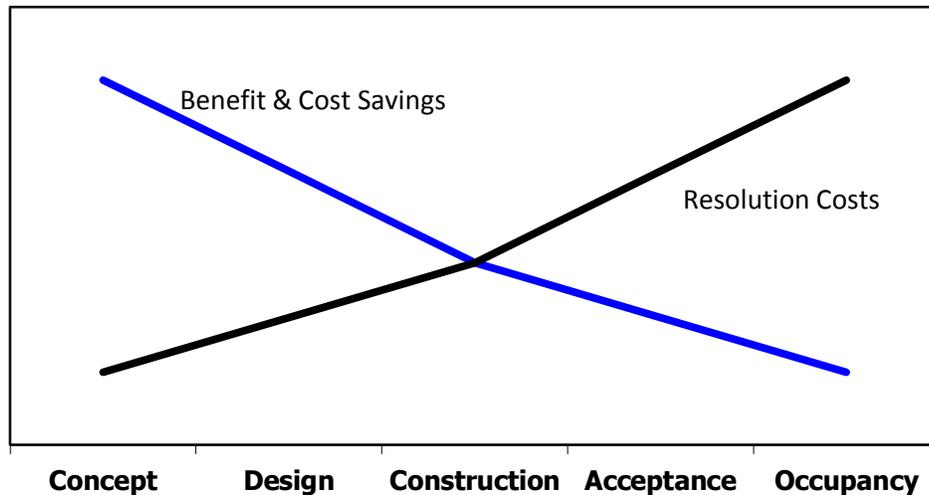
- ♦ 'Ball-park' calculations on your energy savings after commissioning



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Can You Afford to Bypass a Design Review?

One of the myths of commissioning is that the design review phase is too costly. In reality, the design phase accounts for roughly 20% of the overall commissioning budget. However, the impact of the design review is the greatest factor on the construction side in avoiding high change orders and schedule slippage. As depicted below, the earlier the issues are identified, the lower the cost to resolve.



Typical CxA design review scrutinizes issues such as:

- Adequate access to equipment above the ceiling for maintenance.
- Are there clear criteria for central plant staging - is it defined and/or optimized?
- Required air changes per hour / outside air ventilation rates are adequately met.
- Are there incorrect or inadequate pressure relationships between adjacent spaces?

TMCx "Gets" LEED Projects

- ♦ 'LEED-like' through Platinum Certification
- ♦ Effective OPR's and BOD's
- ♦ Comprehensive Documentation Submissions
- ♦ Constructive Design Reviews

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PARTIAL CLIENT LIST

| Government | Private |
|---------------------------------|--------------------------------|
| Federal Bureau of Investigation | Boeing |
| N.A.S.A. | Amgen |
| Indian Health Services | General Mills |
| Bureau of Indian Affairs | MGM Mirage Corporation |
| Los Alamos National Laboratory | Pfizer |
| Sandia National Laboratories | McCarran International Airport |
| Federal Courts | Cedars-Sinai Medical Center |
| Environmental Protection Agency | Scripps Medical Centers |
| Veterans Administration | Blue Cross Blue Shield |
| United States National Guard | Sempra |
| United States Navy | Northrop Grumman |
| United States Air Force | Colliers |
| U.S. Army Corps of Engineers | Cobalt Data Center |
| ✓ Fort Bliss | Las Vegas Sands Corporation |
| ✓ Fort Sill | Banner Health System |
| ✓ Border Stations | Stanford University |
| ✓ Camp Pendleton | Caesars Entertainment |
| ✓ Fort Carson | |
| ✓ Creech AFB | |
| ✓ Davis-Monthan AFB | |
| ✓ Fort Huachuca | |



“On the FBI project in Phoenix, TestMarc did an outstanding job on the Commissioning of the multitude of systems in the building. They worked hand in glove with all of our subcontractors who had systems to commission, as well as working closely with the FBI staff, vendors and consultants from around the country in this extremely secure environment.”

Joe Schmid, LEED AP & Senior Project Manager
Ryan Companies US, Inc.

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Having been on the operations side and the business development side of commissioning for over a decade now, I'm seeing some trends lately that disturb me because they weaken the benefits of the commissioning process.

Being independent from design and products is critical for the commissioning process. With the economic downturn, large engineering firms have started 'commissioning divisions' to supplement their design work, and controls contractors now offer retro commissioning. Plus, many commissioning providers are in a feeding frenzy to get the job by bidding low, creating service dilution so extreme that the process is no longer valued because it's been thinned so much. Ultimately, to maintain value, change orders become the vehicle used to get to the real cost of the service.



Loren Morris, PE
VP of Business Development

At TMCx, we never forget that commissioning is a quality assurance service and our customers deserve honest communication. Our reputation is built on this philosophy and approach.



"TMCx was excellent at addressing issues found in the field. They were also very instrumental in communicating with the contractors and engineers to find a solution. Very knowledgeable in systems and were a great resource to the General Contractor. Having TMCx as part of the project team contributed greatly to the overall success of the project."

Gary Perrin, Project Manager, Fort Bliss Combat Aviation Brigade helicopter hangar projects

"It was a great experience in working with this team and will look forward to working on future projects."

Nathan Wero, D. Sloan Architects, about the NTUA Crownpoint Sub-office project



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CUSTOMER INFORMATION

1a. Awarded special item number

SIN 871 206 Building Commissioning Services

| SIN | LABOR CATEGORY | Unit of Issue | GSA Rate (including IFF) |
|----------------|--|---------------|--------------------------|
| 871-206 | Blended Rate* | hour | \$140.05 |
| 871-206 | Principal/VP/Director | hour | \$182.67 |
| 871-206 | Senior Operations Manager | hour | \$153.05 |
| 871-206 | Operations Manager | hour | \$143.17 |
| 871-206 | Senior Engineer (Mech/Elec/Fire/Controls) | hour | \$143.17 |
| 871-206 | Senior Energy Analyst | hour | \$143.17 |
| 871-206 | Project Manager | hour | \$138.24 |
| 871-206 | Engineer (Mech/Elec/Fire/Controls) | hour | \$136.02 |
| 871-206 | Energy Analyst | hour | \$138.24 |
| 871-206 | Certified Commissioning Authority (CxA) | hour | \$130.98 |
| 871-206 | Senior Technical Specialist/Engineering Specialist | hour | \$133.30 |
| 871-206 | Technical Specialist (CxT) | hour | \$115.87 |
| 871-206 | Senior CAD Operator | hour | \$120.46 |

*The Blended Rate is a simplified billing rate and our invoicing standard. We track project hours and invoice at the Blended Rate, regardless of the personnel used and their rate categories. The Blended Rate reflects a deeper discount than the individual labor category rates.

1b. Lowest priced model number: N/A

Our Enriched Service Level includes:

- ♦ Weekly Reports on issues resolution



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1c. Commercial Job Title Descriptions

Principal/VP/Director

| | |
|------------|--|
| Role | Plans, directs, and coordinates activities in regional offices to meet overall company objectives. Directs sales, marketing, and operations for the regional offices. Acts as a liaison with project owners and managers. Consults with staff on commissioning projects. |
| Education | BS degree in Business, Engineering or related fields |
| Experience | Minimum 15 years of experience in management and business development for commissioning, design, or installation of MEP systems within commercial and industrial buildings |

Senior Operations Manager

| | |
|------------|--|
| Role | Plans, directs, exercises functional authority, and coordinates activities on commissioning projects, plus provides a core project commissioning standardized procedure. Ensures that project goals are accomplished within the prescribed time frame and funding parameters, and that all reports are accurate. |
| Education | BS degree in engineering or engineering technologies |
| Experience | Minimum 10 years of experience in the management of the commissioning, design, review, or installation of MEP systems within commercial and industrial buildings, with an emphasis on commissioning |

Operations Manager

| | |
|------------|--|
| Role | Ensures that project goals are accomplished within the prescribed time frame and funding parameters, and that all reports are accurate. In addition, reviews project plans and design for compliance with engineering principles, company standards, customer contract requirements, and related specifications. |
| Education | BS degree in engineering or engineering technologies |
| Experience | Minimum 5 years of experience in the management of the commissioning, design, review, or installation of MEP systems within commercial and industrial buildings, with an emphasis on commissioning |

Senior Engineer

| | |
|------------|--|
| Role | Responsible for the application of the commissioning process used by TMCx for new commissioning projects, retro commissioning projects, continuous commissioning projects, and forensic engineering projects |
| Education | BS degree in mechanical engineering, electrical engineering, fire protection engineering, or engineering technologies |
| Experience | Minimum 10 years of experience in the design, review, or installation of mechanical, electrical, or fire protection systems within commercial and industrial buildings, with an emphasis on commissioning |

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Senior Energy Analyst

| | |
|------------|--|
| Role | Develops and manages company-wide energy engineering standards, assists with internal training/mentoring, and coordinates resources on energy projects. Acts as a technical resource, and promotes energy analysis, modeling, and reporting standardization. |
| Education | BS degree in mechanical, electrical, or fire protection engineering or engineering technologies |
| Experience | Minimum 3 years of experience in energy engineering and construction of HVAC systems, and CEM credentials. LEED or Green building certification required within the second year of employment. |

Project Manager

| | |
|------------|---|
| Role | Determines the commissioning time frame, funding limitations, procedures, staffing requirements, and allotment of available resources to various phases of the project. Coordinates activities concerned with technical developments, scheduling, and resolving engineering design and test problems. |
| Education | BS degree in engineering or engineering technologies |
| Experience | Minimum 3 years of experience in the management of a commissioning process for MEP systems within commercial and industrial buildings |

Engineer

| | |
|------------|--|
| Role | Responsible for the application of the commissioning process used by TMCx for new commissioning projects, retro commissioning projects, continuous commissioning projects, and forensic engineering projects. Emphasizes and implements strong functional commissioning processes and procedures for mechanical, electrical, plumbing, fire alarm, life safety, energy, and building automation systems. |
| Education | BS degree in mechanical engineering, electrical engineering, fire protection engineering, or engineering technologies |
| Experience | Minimum 5 years of experience in the design, review, or installation of mechanical, electrical, or fire protection systems within commercial and industrial buildings, with an emphasis on commissioning. |

Energy Analyst

| | |
|------------|---|
| Role | Responsible for energy auditing, energy usage exploration, ECM savings/ costing calculations, and energy modeling for TMCx projects |
| Education | BS degree in mechanical, electrical, or fire protection engineering or engineering technologies |
| Experience | Minimum 3 years of experience in energy engineering and construction of HVAC systems. LEED or Green building certification required within the second year of employment. |

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INDEPENDENT ♦ INVESTIGATION ♦ INTEGRITY ♦ INVOLVED ♦ INVALUABLE

Certified Commissioning Authority (CxA)

| | |
|------------|---|
| Role | Manages the development and implementation of the commissioning process, a documented quality assurance procedure that verifies new construction and/or existing buildings function according to the Owner’s requirements |
| Education | Bachelor’s or Associate’s degree in a related field |
| Experience | Certification in the Commissioning discipline (CxA by ACG); strong knowledge of building mechanical, plumbing, electrical, and life safety systems; construction and project management experience; technical knowledge of MEP system design and operation. |

Senior Technical Specialist/Engineering Specialist

| | |
|------------|--|
| Role | Assists all levels of TMCx personnel in implementing strong functional commissioning processes and procedures, especially for mechanical, electrical, plumbing, and building automation systems. In a team setting, assists with problem solving, documentation, testing, and reporting. |
| Education | Trade school Associate’s degree in a construction trade, such as test & balance, mechanical service, or construction management. |
| Experience | Certification in the Commissioning discipline (CxA by ACG); plus a minimum of 5 years of field experience in construction of HVAC systems, BAS Controls, Test & Balance, and/or mechanical/electrical service. |

Technical Specialist (CxT)

| | |
|------------|--|
| Role | Assists all levels of TMCx personnel in implementing strong functional commissioning processes and procedures, especially for mechanical, electrical, plumbing, and building automation systems. In a team setting, assists with problem solving, documentation, testing, and reporting. |
| Education | Trade school Associate’s degree in a construction trade, such as test & balance, mechanical service, or construction management. |
| Experience | Certification in the Commissioning discipline (CxA by ACG); plus a minimum of 2 years of field experience in construction of HVAC systems, BAS Controls, Test & Balance, and/or mechanical/electrical service. |

Senior CAD Operator

| | |
|------------|---|
| Role | Produces and maintains design drawings in support of project managers, project engineers, and the Central Engineering Group |
| Education | Trade school Associate’s degree in computer aided drafting |
| Experience | Minimum 3 years of field experience in computer aided drafting of architectural or engineering systems |

2. Maximum order: \$1,000,000

3. Minimum order: \$100

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4. **Geographic Coverage (delivery area):** 48 United States and DC
5. **Points of production:** Arizona, California, Colorado, Nevada, New Mexico, Texas
6. **Discount from list prices:** All prices reflect already-discounted net prices for services.
7. **Quantity discounts:** None
8. **Prompt payment terms:** None
- 9a. **Notification that Government purchase cards are accepted at or below the micro-purchase threshold:** Yes
- 9b. **Notification whether Government purchase cards are accepted above the micro-purchase threshold:** Yes
10. **Foreign items:** N/A
- 11a. **Time of delivery:** Determined at the task order level
- 11b. **Expedited Delivery:** N/A
- 11c. **Overnight and 2-day delivery:** N/A
- 11d. **Urgent Requirements:** N/A
12. **F.O.B. points:** N/A
- 13a. **Ordering address:**
TMCx Solutions, LLC
Attn: Loren Morris
4415 South Wendler Drive, Suite 101
Tempe, Arizona 85282
- 13b. **Ordering procedures:** Contact Loren Morris, VP of Business Development, by mail at the Ordering Address, by email to lmorris@tmcxsolutions.com, or by telephone at 480.446.7777 or 602.722.9076
14. **Payment address:**
TMCx Solutions, LLC
Attn: Accounts Receivable
5575 South Durango Drive, Suite 102
Las Vegas, Nevada 89113



- 15. **Warranty provision:** N/A
- 16. **Export packing charges:** N/A
- 17. **Terms and conditions of Government purchase card acceptance (any thresholds above the micro-purchase level):** Contact Contractor
- 18. **Terms and conditions of rental, maintenance, and repair:** N/A
- 19. **Terms and conditions of installation:** N/A
- 20. **Terms and conditions of repair parts:** N/A
- 20a. **Terms and conditions for any other services:** N/A
- 21. **List of service and distribution points:** N/A
- 22. **List of participating dealers:** N/A
- 23. **Preventive maintenance:** N/A
- 24a. **Special attributes:** N/A
- 24b. **Section 508 compliance:** N/A
- 25. **Data Universal Numbering System (DUNS) Number:** 963401463
- 26. **Notification regarding registration in Central Contractor Registration (CCR) database:**
TMCx Solutions, LLC is registered.

Our Enriched Service Level includes:

- ♦ We 'commission' our commissioning three times during the process

