

EXHIBITE - Scope of Work

BAS Consultant Services

The University of Texas MD Anderson Cancer Center (Owner) is pursuing a consultant for building automation system ("BAS") services (Consultant) to provide total building automation technical and procedural leadership during all project phases. Services will be rendered on an as-needed basis.

Objectives of the RFQ are to identify and select a qualified Consultant that demonstrates the following capabilities.

1. An in-depth understanding of campus-wide building automation solutions and the future direction of these platforms, including cloud-based platforms
2. Direct project experience with Tridium Niagara, Desigo CC and Siemens Apogee Insight software platforms
3. Vast knowledge of all major BAS manufacturers and BAS hardware products
4. Experience with the modernization and migration of legacy BAS control systems
5. Ability to support interoperable, integrated systems and applications from multiple but qualified BAS vendors.
6. Experience with BACnet, Modbus, OPC, and other Field Bus communication protocols in an open, interoperable system
7. Experience using industry-standard project management practices
8. Knowledge of the requirements, regulations, and codes for healthcare, academic and laboratory facilities
9. Experience with Information technology network requirements for healthcare facilities
10. Knowledge of USP 797 and USP 800 standards and guidelines
11. Substantial experience reviewing and developing construction documents, updating specifications, and commissioning to current industry standards
12. Thorough knowledge of Current Good Manufacturing Practices (CGMP) and Food and Drug Administration (FDA) formal regulations regarding the design, monitoring control, and maintenance of manufacturing processes and facilities
13. Able to provide at least five examples of large projects related to the scope items listed below (at least two project examples must be in healthcare or laboratory related)

Scope of Services Requested

The specific scope of work for each project shall be determined in advance and in writing between the Owner and the Consultant. The Consultant will serve as an extension of Owner's staff and provide certain services related to the implementation of BAS modernization and new projects. Generally, such services are to include project definition, scope development management, construction documents, overseeing completion of the BAS, commissioning, and project close-out. The Consultant shall have authority only as delegated by the Owner. Although the Owner will retain a BAS Contractor to be responsible for implementing the work, including all close-out requirements, the Consultant shall represent Owner for oversight, compliance, and proper documentation as requested.

Owner, Consultant, Engineer of Record (EoR), General Contractor, and BAS Contractor shall facilitate Project definition, construction, commissioning, and close-out documents through the Owner's project management information system (PMIS), which is commonly referred to as Project Workspace.

For these projects, the BAS Consultant will be responsible for providing engineering services including but not limited to the items set out below.

1. Lead Owner's transition to an open enterprise BAS platform(s) where multiple qualified vendors can participate based on Owner specifications.
 - a. Provide recommendations for seamless integration of hardware, software, and user experience on renovation and greenfield projects.
 - b. Preserve existing BAS hardware investments and integrate them to an open, interoperable BAS platform that best serves the Owner.
 - c. Support vetting of controls related vendors for services, personnel, past performance on local projects, customer support, BAS control design, and engineering practices.
 - d. Provide recommendations to vet and limit the number of building automation hardware manufactures and software platforms in conjunction with preventing vendor lock to any particular vendor.
2. Provide input to Owner's or EoR's sequences of operation, including:
 - a. Suggestions of best practices and revisions for optimized performance.
 - b. Translation of HVAC sequences of operation from BAS code and/or scheduling for EoR's project documents.
 - c. Extraction of existing BAS database information into a detailed and complete BAS point summary for EoR's construction documents for a different manufacturer's building controller.
 - d. Participation in commissioning and support for all user acceptance tests as well as assistance in troubleshooting to ensure compliance to all customer requirements.
3. Review HVAC control sequences of operation to ensure deliverables are complete and consistent in approach as well as meet or exceed current ASRHAE Standard 90.1 energy code.
4. Review Project commissioning plans, Owner's Site HVAC Utilities Performance Requirements, functional performance testing procedures, and trend data to ensure appropriate commissioning of Project.
5. Review Owner Design Guidelines and Specifications (ODGs). Provide deliverables as needed to update the ODGs to better support evolving industry standards such as point naming and metadata, Owner's preferred graphics, master construction documents, and trending requirements.
6. Take lead role as subject matter expert and advisor to Owner for inbound and outbound data transfer and data storage for systems including:
 - a. IoT device integration
 - b. In-house and cloud-based energy and operational analytics integration
 - c. Computerized maintenance management System (CMMS) integration
7. Generate recommendations on projects to reduce energy costs, increase tenant satisfaction, and improve operational awareness as well as generate return on investment calculations if needed to support these improvements.
8. Take lead role and provide turnkey construction and commissioning documents for above items as requested by the Owner.