

NOAO - Kitt Peak Visitor Center Project –
Windows on the Universe Center for Astronomy Outreach

Scope of Work – Architectural/Engineering Services

General Project Description

The Kitt Peak Visitor Center (VC) has obtained funding from the National Science Foundation (NSF) to renovate the existing McMath-Pierce Solar telescope and create a new public outreach center to be known as the “Windows on the Universe Center for Astronomy Outreach” (WUCOA). To facilitate this work, AURA/KPNO is seeking Architectural and Engineering (A/E) services to review the existing structure, evaluate/identify necessary building modifications, provide estimated budget costs for the work and prepare the building renovation documents. All design work will have to be done in conformance with the various International Building Codes. The initial phase 1 work needs to be submitted to AURA/KPNO on or before March 31, 2019.

The A/E vendor’s work will involve the following phases. See Task Listing for each of the phases for more detail.

Phase 1 – Review of existing facility and related documentation.

Phase 2 – Work with VC personnel to finalize basic building layout and estimated costs.

Phase 3 – Prepare building renovation documents.

Phase 4 – Assist in Contractor selection and provide oversight to the renovation efforts.

A) General Information

- 1) The facility is owned by the NSF and located within the boundaries of the Tohono O’odham Reservation (TO). It is operated by AURA through a cooperative agreement with the NSF.
- 2) All work will need to be done in conformance with the current (as of 2018) National Codes (IBC, ADA, NEC, UMC, UPC, etc.), other applicable regulations and requirements, Kitt Peak guidelines and any applicable Tohono O’odham regulations.
- 3) As a federally owned facility located on tribal land, the Kitt Peak National Observatory (KPNO) is operated by AURA. Both Federal Laws and Tribal Laws are applicable.
- 4) Vendor and any sub-contractors shall comply with applicable TERO regulations and provide evidence of compliance to AURA contracts office prior to starting work.
- 5) NSF/AURA/KPNO/VC shall identify a technical contact(s) as necessary for project coordination, scheduling, inspection and/or review.
- 6) The main McMath-Pierce (MMP) facility is currently shutdown but other sections (EM offices, IHF) remain in operation.

- 7) The National Observatory approximately 6800+ feet above sea level and is located at the terminus of Arizona State Route 386 approximately 40 miles west of Tucson, Arizona.
 - 8) The internal roads are the Observatory responsibility and are utilized by both vehicles and public pedestrians visiting the site. Safety on the roadways is a primary concern and a maximum speed limit of 10 mph is required.
 - 9) The Kitt Peak site contains internationally renowned observatories and is operated by the Association of Universities for Research in Astronomy, Inc. (AURA) under a cooperative agreement with the NSF.
 - 10) Regular working hours on Kitt Peak are from 8:00 AM to 4:00 PM. Other arrangements for work in daylight hours may be mutually established in advance with the Owner's Technical Representative. There are also occupants located on Kitt Peak that are considered day sleepers. To reduce the disruption to these occupants, noisy activities and/or vehicular traffic in the dorm areas must be controlled and is generally limited to the hours of noon to 4 PM.
 - 11) Toilet facilities are available in the work area for vendor use.
 - 12) Wireless internet and cellular phone usage are prohibited on KPNO due to the interference with the radio telescopes.
 - 13) Vendor(s) shall be aware of and comply with all OSHA requirements and regulations. Vendor(s) shall take all measures necessary to protect their employees and KPNO personnel and visitors in adjacent areas from injury related to their work.
- II) Background Information
- The main MMP facility was constructed in 1962 and was expanded in several phases over several years. The primary utility systems are located within a detached structure with connectivity through an underground utility tunnel. Septic systems (size to be provided) are used for waste disposal with water obtained from the mountain distribution system. The facility has both historical and scientific importance which limits external modifications. Several areas will remain in operation and are not a part of this project. Original construction plans are available for the facility and they will be provided for the review and assessment phase.
- III) Hazards information
- The NSF has had independent reviews conducted regarding hazards that may be present as well as a review of the general operating systems. These reviews will be made available to help identify appropriate design and/or engineering needs that may be needed for incorporation into the renovation documents.

IV) Task Requirements

The proposal for consulting services shall incorporate the phases noted with a proposed fee and estimated calendar day timeline for completion of their tasks in each phase.

The tasks for the phases shall include the following noted items:

A) Phase 1 – Facility Review

- 1) Review documentation provided regarding facility.
- 2) On-site review(s) of facility as necessary.
- 3) Evaluate building support systems (Mechanical, plumbing, heating, electrical, structural, roofing, codes, etc.) to determine repair/upgrade/replacement requirements.
- 4) Evaluate building structural support systems and changes necessary to prepare and develop proposed open spaces.
- 5) Electrical supply system should be reviewed for safety and adequacy to support proposed use and improvements.
- 6) Identify any hazards mitigation that may be necessary for proposed use.
- 7) Identify ADA accessibility improvements needed or potential alternatives.
- 8) Review exterior building access options and identify necessary changes.
- 9) Water supply is limited at times so conservation must be a part of the project design parameters.
- 10) Provide a report outlining findings, recommendations and options for consideration in final planning and meet with staff to answer any questions.

B) Phase 2 – Finalize facility layout plans and estimate renovation costs

- 1) Based upon information identified in Phase 1, work with staff to revise proposed building layout.
- 2) Prepare new architectural layout for final review.
- 3) Prepare proposed renovation costs based on new layout and Phase 1 review information. Identify any potential cost saving options. (Can be done in this phase or Phase 3)

C) Phase 3 – Prepare renovation documents for bid

- 1) Design necessary structural modifications.
- 2) Prepare various load and/or operational calculations for building support systems as necessary (HVAC, Electrical, Plumbing).
- 3) Prepare contractor bid documents for identified facility renovation.

D) Phase 4 – Bid support and construction oversight

- 1) Provide support for project bidding, provide clarification for contractor questions.
- 2) Assist owner in brief evaluation of bids and contractor capabilities.
- 3) Provide email or telephone response for clarification of contractor questions or RFIs during construction. Provide sketches as necessary.
- 4) Review shop drawings for conformance to design and plans.
- 5) Perform on-site construction observations a minimum of four (4) times to ensure quality of contractor's work and progress in conformance with plans.

(Visits shall include electrical, mechanical and/or structural review personnel as necessary.)

- 6) Conduct final review of work upon completion and prepare final set of updated documents utilizing contractors marked up prints, drawings and/or other information obtained. Final set of documents shall be in both hard copy and electronic media.

Proposed Project Time Line

Issue AE bid documents – February 1, 2019

AE Bids due – February 22, 2019

Bid Award date – March 11, 2019 (provided the U.S. Government is still open).

Phase 1 Completion – April 10, 2019

Phase 2 Completion – April 30, 2019

Phase 3 Completion – July 31, 2019

Phase 4 Work – Final completion/acceptance of facility January 31, 2020