

UNCLASSIFIED
CHILLED WATER PIPE AND DUCT RE-INSULATION
UNITED STATES EMBASSY DAR ES SALAAM, TANZANIA

1.0 GENERAL INFORMATION

- 1.1.1 This statement of work (SOW) is for the replacement of chilled water pipes and ducting insulation for the United States Embassy chillers and AHU in the Chancery mechanical rooms and Warehouse building at the Embassy compound located in Dar es salaam, Tanzania. The existing chilled water piping system consists of various sizes and types of pipes and ducts conveying chilled water and Air from the central chillers through the primary and secondary chilled water pumps to the air-handling units and back to the chillers. The pipes sizes range from 1 inch diameter to 3 Inches in diameter and have different types of valves and other fittings connected to them for various applications. The piping insulation is a combination of elastomeric and rock wool types.
- 1.1.2 This project requires the services of an experienced contractor to remove all existing insulation on the chilled water piping and replace with new ones following the requirements stated in this SOW.

2.0 GENERAL REQUIRMENTS

- 2.1 The cost proposal submitted for this statement of work (SOW) shall include the cost for all engineering and supervision, labor material, tools, equipment, and mobilization, include a description of the work to be completed, and a proposed schedule indicating the duration of the project in order to furnish, install and complete the work in accordance with the SOW.
- 2.2 The Contractor shall be responsible for all required materials, equipment and personnel to manage, administer, and supervise the re-insulation of the pipes. The embassy will be furnishing the needed utilities for this contract performance, which will include and be

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restricted to water and electricity as necessary. All workmanship shall be performed in accordance with the standards and regulations as determined by the COR.

- 2.3 The contractor is responsible for verifying all dimensions, material quantities and existing conditions prior to submitting a quote and during the project. All conditions encountered that would require potential change to the contract must be reported to COR for evaluation, consideration and approval for contract modification. Contractor shall not perform any work other than stated in the scope of work unless written approval is provided by the COR. The Contractor shall carry out the work as per the site condition encountered during the pre-walkthrough inspections and measurements taken during site visits.
- 2.4 The work is to comply with needed local or U.S codes whichever is more stringent for insulation installation works, American Society for Testing and Materials (ASTM), American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE) and relevant codes and standards.
- 2.5 The contractor shall submit an advance access request at least 48 hours in advance for its personnel, materials, equipment and vehicle for USG approval. All contractors' personnel are required to have photo IDs to access the USG compound.
- 2.6 The Contractor shall schedule all work under this project after normal Embassy hours so as to minimize the impact of the equipment

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shutdown on the Embassy operation. The Chiller shutdown schedules will be strictly planned and coordinated through the COR with relevant stake holders in the Embassy.

2.7 The contractor must abide by all applicable safety requirements of the USG such as the Occupational Safety and Health Administration (OSHA) codes and regulations and/or local safety guidelines and comply with whichever is more stringent. Fibrous materials handling guidelines shall be considered an essential safety requirement for this project. All personal safety equipment required for the job such as safety helmet, gloves, shoes, jackets, belt etc. and any other safety related items as required shall be provided by the Contractor to its sub-contractors/employees/workers. Power extension cords if needed must be free of splices with grounded plugs attached. The USG is not liable for injuries or provision of required safety equipment. USG reserves the right to stop work in the event that relevant safety standard is observed being violated.

2.8 The contractor shall coordinate the work schedule and access to the work areas with the COR. Work areas shall be cleaned up and debris disposed of properly on a daily basis. Upon completion of work, the area is to be returned to clean condition with no dust or paint stains in evidence. All damaged, stained and disturbed surfaces are to be restored back to as met conditions.

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- 2.9 Contractor shall furnish bins or employ other disposal means for the disposal of wastes generated from this project. USG waste bins are not to be used. No equipment or material shall be stored on the work site without specific permission from the COR.
- 2.10 The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all construction and other services furnished under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiencies in its construction and other services.
- 2.11 The Contractor shall identify a Project Site Manager who shall be responsible for the overall management of the project and shall represent the Contractor on the site during the re-insulation. The Project Site Manager shall be approved by the COR
- 2.12 The Contractor shall examine all the documents and visit the site to fully inform themselves of all the conditions and limitations applied to the work and submit a firm fixed price cost proposal for all the work. No subsequent cost allowance will be made to the Contractor for neglect of the existing conditions and no progress payment will be entertained under this contract.
- 2.13 No work shall begin until approvals of the Submittals are accepted by the COR. Requests for approval should be sent to the COR in the appropriate form as a Shop Drawing/Material Approval Request

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- 2.14 The approval of the drawings and/or materials by the COR shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is satisfactory. Approval of such drawings and/or materials will not relieve the Contractor of the responsibility for any error which may exist as the Contractor shall be the responsible for the dimensions, design, quality, adequate connections, details and satisfactory construction of all work.
- 2.15 All materials and equipment incorporated into the project shall be new. The Contractor shall transport and safeguard all materials and equipment required for construction.
- 2.16 The Contractor will be provided with a storage and staging area as determined by the COR. The Contractor shall be responsible for repair of any damage incurred to buildings or pavement as a result of storage activities. The Contractor is responsible for obtaining any additional off compound storage areas as required.
- 2.17 The Contractor shall be responsible for connection of temporary utilities to existing utilities including water and power lines. All temporary connections to local water and power lines shall be strictly coordinated with the COR
- 2.18 The Contractor shall have limited access to any structure outside the areas designated for the project except with permission by the Embassy.

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- 2.19 The Embassy does not make representations or warranties of any nature, either expressed or implied, as to the quality, level of completion, accuracy, extent of compliance with the standards, codes and requirements described or referred to in this SOW, or the extent of coordination between or among the documents provided to the Contractor.
- 2.20 If any of the Contractor's services do not conform to the contract requirements, the COR may require the Contractor to perform the services again in conformity with the requirements as identified in this SOW. If work is not deemed satisfactory, the Embassy shall by contract or otherwise, perform the services and charge the contractor any cost incurred that is directly related to the performance of such service or terminate the contract for default. The Embassy has the right to terminate this contract of convenience at any time in whole, or from time to time, if the Contracting Officer determines it is in the interest of the Embassy
- 2.21 The Contractor must ensure that all materials to be used are in conformance with the approved product/materials samples. Submittals of samples, Material Safety Data Sheet (MSDS) and Product Data (PD) for all materials input to the project execution must be preapproved by the COR unless otherwise noted.

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- 2.22 The Contractor shall submit a copy of a Contractor's Installation Guarantee covering the work, labor and equipment for a period of one [1] year at no cost to the Embassy signed by the Contractor.
- 2.23 The Contractor shall prepare and submit a Quality Control Schedule [QCS] and Project Safety Plan [PSP] to address the project. The QCS and PSP shall document the entire project from beginning to end.

3.0 SCOPE OF WORK

- 3.1 Contractor shall confirm the requirements of the SOW are understood, and that the Contractor is fully aware of the location and requirements contained therein. If the Contractor believes additional information is needed, the Contractor shall schedule additional site visits, at the Contractor's expense, with the **COR or FM** to ensure the project work requirements are established prior to submitting pricing for the project.
- 3.2 Provide laborers, equipment, and materials necessary to re-insulate **Chilled Water Piping, Ductwork and Other system** serving the **Embassy warehouse and warehouses offices** located at the **US Embassy Dar es Salaam office compound**.

3.2.1 Modification / Demolition requirements:

- 3.2.1.1 Accessing Existing Systems: The Contractor shall anticipate removing ceiling **and wall** systems as necessary to access existing **piping and ductwork**. The Contractor shall be responsible to preserve architectural system components (i.e. ceiling systems) when possible to reuse. Where reuse is not possible, the Contractor shall fully document the existing architectural systems in anticipation of replacement.

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- 3.2.1.2 Remove Existing Insulation: The Contractor shall remove **pipng and ductwork** insulation in sections not exceeding the portion that can be re-insulated within **24 hours** where **pipng/duct** system is active. Fully remove all existing insulation before re-insulating each section of **Chilled Water Piping, Ductwork and Other system** in all areas indicated in Exhibit B below. Remove all visible residue (i.e. adhesive, dust, rust) from the outer surfaces of the **pipng and ductwork** that might inhibit proper adhesion of new insulation.
- 3.2.1.3 Excessive Condensate: **The Contractor will exercise caution throughout the project duration: When removing insulation from active cold piping and ductwork, condensation can form on the exterior surface and drip onto surfaces below, causing potential installation problems and unsafe working conditions. To prevent condensate from forming on the cold piping ductwork, the Contractor will coordinate work with the FM to work during off peak times when system temperatures can be elevated, or systems can be temporarily shut down.**
- 3.2.1.4 Materials Disposal: The Contractor shall be responsible for removing all demolished materials from the Post in compliance with *Debris and Trash Disposal* paragraph above.

3.2.2 New Installation Requirements:

- 3.2.2.1 Fully prepare and prime surfaces to receive new adhesive and insulation. Remove all residue not fully removed in the demolition process such that surface is clear of dust, rust,

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moisture, old adhesive or any other material that would inhibit proper installation of new insulation. Where rust is present and damage is evident, repair damaged portions of ductwork and treat with a corrosion inhibitor.

- 3.2.2.2 Provide new insulation for **Chilled Water and Ductwork** to match existing insulation in all areas indicated in Exhibit B below.
 - 3.2.2.3 Piping located in exposed areas shall be put in approved cladding to prevent damage from birds and exposure to weathering.
 - 3.2.2.4 Provide **pipe and duct** identification to clearly define the contents of the **pipe and duct** system and direction of flow as defined in the project specifications. New **pipe and duct** labels shall match existing labels. At a minimum, these labels shall indicate service type and direction of flow on all newly reinsulated sections over 3m (10 feet) in straight length.
- 3.3 The Contractor shall provide for inspection of finished work by the **COR and FM**. **COR and FM** will determine if all insulation work has been completed and may indicate areas where the quality of work is unsatisfactory or additional repair is required, prior to closeout of the project. Repair work is subject to inspection and approval by the project **COR and FM**.

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4.0 SCHEDULE OF DELIVERABLES

Number	Description	Number of Copies	Due	Format
1	Required Reports/Photographs	1	NTP+ 5 days	Electronic
2	Project Schedule	1	NTP+5 days	Electronic
3	Proposed Sketches, Modification Requests	1	As Needed	Electronic & Hard copy
4	Contractor personnel information to RSO for vetting	1	NTP+5 days	Electronic
5	Safety & Health Protocol	1	Prior to Project Work	Electronic
6	Materials/chemicals submittals	1	Prior to Project Work	Electronic
7	Communications/Meetings Documentation	1	7 Days after project hand over	Electronic

5.0 MILESTONES

Contractor Pre-Proposal Site Visit	To be informed
Award of Contract & Notice to Proceed (NTP)	To be informed
Material approval	NTP+5days
Construction Begins	As per agreement
Construction	20 days or has may be agreed
Hand over documents/ Drawings	5 days after project completion

6.0 PRELIMINARY AND FINAL ACCEPTANCE

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- 6.1 The Contractor shall commence work under this contract promptly, execute the work diligently, and achieve final completion and acceptance including final cleanup of the premises within the period specified. Contract performance in this regard shall be closely monitored with the COR due to criticality of the schedule involved hence proper pre inspection of materials and methods **MUST** be done and approved before project commencement.
- 6.2 The Contractor shall make good all defects, deficiencies and omissions as are being observed in the presence of the COR and acceptance issued as soon as possible.
- 6.3 Final acceptance shall be communicated in writing through the contract COR to the Contractor. Work discovered to be deficient resulting in detachment, deformation, disconnection, workmanship, or settlement will be documented and contractor will correct as a warranty issue upon notification by the COR during the warranty period
- 6.4 The contractor shall furnish **one (1)** copy of Contractor's one-year workmanship guarantee.

7.0 ATTACHMENTS

EXHIBIT A: EXISTING CONDITIONS OF PIPING AND DUCT INSULATION

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EXHIBIT A: CHILLED WATER ESTIMATED PIPES & DUCT DIMENSIONS

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S No	Pipe size (inch)	Pipe Length (Feet)	Usage & location
1	3	800	Chilled water supply/ return- Warehouse
2	2	300	Chilled water supply/ return- Warehouse
3	3	2800	Chilled water supply/ return- Chancery
4	1 ½	600	Chilled water supply/ return- Chancery
5	2	500	Chilled water supply/ return- Chancery
6	1	400	Chilled water supply/ return- Chancery

S No	Duct size (Meters)	Length (Feet)	Location
1	1 ½ X 1	250	North
2	1 X ½	300	North
3	1 X ½	180	North
4	1 ½ X 1	190	South
5	1 X ½	100	South