STATEMENT of WORK

NEW DELHI, INDIA

Roof Replacement of Office Spaces Roofs

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FACILITY MANAGEMENT OFFICE

EMBASSY OF THE UNITED STATES OF AMERICA, NEW DELHI

U.S. GOVERNMENT OWNED OFFICE SPACES ROOF REPLACEMENT WORK STATEMENT OF WORK

PART ONE - GENERAL

1.0 BACKGROUND AND PURPOSE

1.1 The U.S. Embassy in New Delhi has a requirement to replace waterproofing on the roof of office spaces block at Enclave Compound. This project requires a qualified contractor to install a two-ply modified bitumen protected membrane system under thermal insulation and concrete pavers according to US standard roof industry practices.

1.2 The roof area is approximately 750.00 square meters (8070 square feet). Contractors are advised to verify the area during contractor walkthrough. Any claim later will not be entertained for increase in the area. Any ambiguity found later will be at the discretion of the Contracting Officer for any modification.

1.3 All materials required to complete the project shall be provided and installed by the Contractor. Any damage to the structure shall be repaired matching to existing by the contractor at no additional cost to USG.

- Secondary Roof Ply [750 sq mtr]:
  - 3mm thick smooth APP modified bitumen; “STP“ by Shalimar Tar Products
- Base & Top Ply [1200 sq mtr]:
  - 4mm thick smooth APP modified bitumen; “STP “by Shalimar Tar Products
- Flashing Top Ply [330 sq mtr]:
  - 4mm thick granule APP modified bitumen; “STP“ by Shalimar Tar Products

Note: Below are the technical specifications for STP membranes. Any membranes matching or exceeding these specifications will be considered as equivalent. Vendor must mention which product they are choosing / considering for the bid and why?

Key Technical Specifications

Property	Specification (3mm & 4mm)
Roll Size	1m x 10m
Tensile Strength	Longitudinal: >650 N / 5cm; Transverse: >450 N / 5cm
Elongation at Break	Longitudinal: 40% ± 10; Transverse: 50% ± 10
Softening Point	≥ 150°C
Cold Flexibility	Up to -2°C (Standard) or -5°C (On demand)
Heat Resistance	No flow at 120°C for 2 hours
Puncture Resistance	Static: 280 ± 20 N; Dynamic: I-3
Water Absorption	0.2% to 1.0% Max

GENERAL REQUIREMENTS

1.4 Contractors shall provide personnel, material, equipment, and supervision to complete the technical requirements in this Statement of Work. Contractor shall follow security and safety directions as explained by the COR.

1.5 Contractors shall have limited access to or be admitted into the Residence building outside areas designated for the project except with permission by the COR.

1.6 There is a possibility that work may get disrupted at times, initially during the demolition phase due to noisy work.

1.7 Any damage that occurs to the building, equipment, furnishings or landscaping due to the failure of Contractor to properly protect and secure the work site while the roof project is in progress shall be Contractor's responsibility to repair or replace the damage that have taken place matching to existing at Contractor's expense.

PART TWO – PRODUCTS

2.0 SCOPE OF WORK

2.1 The Contractor shall be required to prepare reports, bill of materials, quality control schedules and construction costs. These documents shall provide the necessary interfaces, coordination, and communication between the Embassy, Overseas Buildings Operations [OBO], and Contractor for the delivery of a complete roof replacement project.

2.2 Pre-Construction Submittals: Contractor shall submit all cut sheets, brochures and material samples as specified for approval before use on the project:

• Sample Warranties	STP (or equivalent) & Contractor
• Bituminous Primer	STP or equivalent
• Concrete foam blocks	Local
• Slip Sheet	Local
• Drainage Board	Texsa or equivalent
• Extruded Polystyrene Insulation	DOW or equivalent
• Filter Fabric	Texsa or equivalent
• Concrete Paver	local
• Stainless Steel Flashing	local • Aluminum Termination Bar local
• Fasteners (screws & nails)	local
• Sealants	Sika or equivalent
• Elastomeric Coating	local

2.3 Storage Area:

- The Embassy will provide a storage area for the Contractors use on the Compound.
- All materials shall be delivered in sealed conditions on site and shall be opened in front of the COR.
- Contractor shall barricade the designated storage area and the area around the construction lift and details as follows:
    - Use galvanized 24-gauge metal corrugated sheets with proper metal support for barricading purposes. Height of the barricade should be 2.5 meters (8 feet) from the existing floor level.
    - All the material, for the purpose of the barricade, should be in good condition. Rusted and damaged material will not be allowed for use.
    - Provide and install necessary self-supporting metal supports for the barricade. o Do not drill holes in the existing driveway paving or to use any of the existing structures as a support for the barricade.

2.4 Demolition:

- This roof should be divided into quadrants by constructing brick wall per location approved by COR to facilitate termination of the membranes.
- The Contractor shall demolish and remove the existing waterproofing layers; existing concrete support structures as shown at the time of the pre-proposal walk through.
- Once the quadrant is done in all respects, next quadrant will be provided to the vendor.
- Vendor shall construct the brick wall from the mother slab and up at least 6" from the top of the final layer of pavers. Contractor shall plaster this wall with cement sand mortar (1:4).
- Contractor shall be responsible for correcting any potential damage that can occur to the existing roof slab during demolition and the duration of the project.
- The entire roof shall be cleaned of demolished material, dust, and any other kind of foreign material before proceeding with the installation of the new waterproofing system.
- Contractor shall be responsible for the security of all the existing wires & existing services (to be retained) on the roof during demolition phase. Any damages shall be repaired or replaced matching to existing at the Contractor's expense.

2.5 Debris Removal:

- The Contractor shall dispose the demolished material in such a manner so that recyclable material can be recycled. Once the project begins the Embassy will designate a place for the Contractor's crew to separate materials such as wood, metals, masonry rubble, glass and cardboard. The Contractor shall identify local companies that recycle the materials generated to the greatest extent possible.
- The Contractor shall take all necessary precautions / protection and obtain approval from local authorities for disposal of debris.
- Contractor shall dispose off all the debris from the Residential Compound and keep the site clean and in workable condition throughout the project duration.
- **Erection of Scaffolding**:
    - Under this contract, contractor must provide and install metal scaffolding (cup loc scaffolding) to reach a pitched roof approximately 30 above the ground level on one side of the building and create anchoring points on the other side (length wise) to anchor the safety ropes to support attachment of safety belts. Contractors can verify the height and width during walk through. Any ambiguity later will not be considered. Below are the works which the contractor must furnish:
    - Contractor must get the scaffolding designed for its sturdiness and resistance against overturning moments from a certified third party. A certified copy of the scaffolding design will be required. ○ Contractor shall share safety plan for entire work. Contractor shall get the scaffolding installation designed and inspected by a competent authority and obtained approval from COR.

- Upon approval of scaffolding design, contractor shall make barricading for the designated storage space on the compound.
  - Upon approval of the barricading, the contractor shall bring the scaffolding material on compound. All the material will be checked for its functionality and safe work performance. ○ Once all scaffolding material is checked and the approved contractor can start erection of scaffolding per requirement. The contractor must get the installed scaffolding inspected by a third-party inspector to certify its compliance with the design and safe for people to work on this scaffolding with inclined ladders inside the scaffolding.

Note: Scaffolding shall be covered from all three sides with a green construction fabric to make it opaque and restrict any entry into the scaffolding area. A door with locking facility shall be installed to restrict the entry of unauthorized personnels into the construction space.

- The Contractor must provide a qualified English-speaking supervisor for the entire duration of work.
- It will be the Contractor Supervisor's responsibility to check on the sturdiness of scaffolding each day before start of work and ensure that it is safe to work on it. It is the responsibility of the Contractor to ensure that all scaffolding material is in sound condition, regularly inspected and kept on record. ○ The Contractor shall supply his own transport of adequate size to move own labor, materials, tools, and equipment to provide an effective and efficient. service. No claims will be accepted for costs for additional equipment requirements, consumables and standing time. ○ Inclined stair flights (45º) are mandatory as a means of access to and egress from work platforms, unless it is not practical to install inclined stairs flights such as where there is no space for the inclined stairs flights. An additional Risk Assessment should be carried out and recorded in these instances. ○ For ease of installation, stair flights shall be of light construction but capable of withstanding imposed loads.
- The maximum load rating of scaffolding systems should be clearly indicated in the submission. ○ Contractor shall tie a jute / PVC rope approximately 2" in diameter from one end to another end of the building (along the length of the building) for workers to tie in their safety harnesses while working. This is an adviser to the contractor, but contractor will be ultimately responsible for the safety and security of his workers. Contractor is liable to find a suitable and mutually acceptable way to tie the safety harnesses of workers during work timings.

2.6 Roof System Warranties:

- Roofing Material Manufacturer's Warranty: New roofing material shall be installed in such a manner that the roof system manufacturer shall furnish a written warranty agreeing to replace or repair defective materials including the tapered lightweight concrete, leakage of water, abnormal aging or deterioration of materials and other failure of the materials to perform within warranty period. Warranty period is **10 years** after date of written final acceptance.
- Contractor's Workmanship Warranty: Furnish a written warranty agreeing to repair or replace defective installation and workmanship causing leakage of water, deterioration of materials and other failures of the installed system, sealants, painting, coatings, and related work on this project, to perform within the warranty period. Warranty period is 10 years after date of the written final acceptance.

PART THREE – EXECUTION

3.1 Secondary Waterproofing System – Secondary Smooth Surface Base Ply:

- Upon completion of removal of existing roof system to the structural deck, Contractor shall apply a coat of **Penetron** Chemical on entire bare concrete surface of the roof as per manufacture recommendations. Contractor shall perform flood test once the coating is fully completed.
- Over and above tested Penetron coating, contractor shall apply a coat of primer. The primer shall be spread at a nominal rate of 3.8 liters (1 gallon) per 9.29 square meters (100sf.).
- Bituminous Primer:
- Consistency Brushable or Sprayable
- Setting time 24 Hours at normal application
- Flash point Above 40 degree
- Specific Gravity 0.9
- Manufacturer STP or equal
- Contractor shall install the secondary base ply in one layer of 3.0 mm smooth modified bitumen membrane roofing to the Main RCC Slab. Follow the Membrane Installation for Smooth Surface Base Ply procedures for torched applied membrane as specified below.
- Temporarily seal all roof drains in preparation of light weight concrete topping.

3.2 Lightweight Concrete Sloped Topping:

- Over the base waterproof ply Contractor shall apply a layer of light weight concrete. The slope of this layer shall be 21mm in one meter (1/4-inch per foot) or 2% slope towards the existing roof drains. • Cement: Pozolona Portland
- Aggregate: Exfoliated Vermiculite Granules.
- Density (Dry – 220 Kg / Cum) Plus / minus 5%
  (Wet – 450 Kg/Cum) Plus / minus 5%
- Thermal conductivity (applied) – 0.058 K cal / hr m deg C (tested as per IS 3345)

- PH value 7.0
- Mix aggregate and cement in a 6:1 mix ratio, six parts vermiculite and one part cement or as recommended by manufacturer, with potable water to achieve a wet density ranging from 608 to 768 kg/m3 (38 to 48 pcf)) resulting in a minimum dry density of 480 to 608 kg/m3 (30 to 38 pcf) and minimum compressive strength of 1.38Mpa (200psi).
- Contractor shall install a cementitious cant at the junction of parapet wall and roof slab to have additional protection for the wall and roof junction joint. The thickness of the lightweight concrete will not be less than 25mm (1-inch) at any point.
- Light Weight Concrete Dry-out Acceptance Test: Contractor shall allow light weight concrete to a minimum of 7 to a maximum of 28 days to cure.
- **Dry Out Acceptance Test**: Securely place, by taping down, a 300mm x 300mm x 6 mil clear polyethylene sheet to the lightweight concrete and observe for condensation on underside of polyethylene in 4-hour cycles. Roof asphalt primer shall be applied once no condensate is observed.

3.3 Roof Drainage:

- Contractor shall install new roof drain covers. The existing roof drain shall be provided with a 600mm x 600mm sump area, then begin the minimum 25mm thickness of lightweight concrete.
- Contractor shall modify existing roof drains for the new waterproofing system. Prime all metal components in direct contact with the roof membrane prior to installation. The Contractor shall follow the manufacturer's recommendations for membrane ply insertion under the retaining ring of the drain hub.

3.4 Membrane Installation - Smooth Surface Base Ply:

- Once the lightweight concrete is completely dry and has passed Dry Out Acceptance test, provide a coat of the primer on the entire roof area including vertical sides of parapet wall and top and to the bottom of reglet (wherever required per site conditions). Prime the top and bottom of the metal flanges and concrete and masonry surfaces with a uniform coating of bituminous primer, at a nominal rate of 3.8 liters (1 gallon) per 9.29 square meters (100 sf.).
- Unroll base ply prior to installation and cut into 5-meter (15 feet) lengths. Allow membrane to relax prior to application.
- Align side lap of base ply over mid-point or center of roof drain.
- Prior to application, re-roll "relaxed" membrane approximately 2.5 meters (7-feet 6-inches). Lay all layers of roofing free of wrinkles, creases, or fishmouths. Exert sufficient pressure on the roll during the application to ensure the prevention of air pockets.
- Apply heat evenly across the face and full width of the roll while unrolling roll uniformly with an even downward pressure. Apply torch flame to the roll until the bitumen back coating reaches the design application temperature, resulting in melting of the burn-off film, a glossy appearance of the back coating, and an approximate 6mm (1/4-inch) to 13mm (1/2-inch) bitumen flow from the edge of

the sheet. Repeat this process with the other end of this 5-meter (15feet) roll.

- Overlap the side laps a minimum of 100mm (4-inches) and end laps a minimum of 200mm (8-inches). Stagger end laps of adjacent sheets of membrane base ply a minimum of 1 meter (3-feet). Extend field sheet of membrane base to top edge of cant.
- Check lap seams and seal unbonded or discontinuous seams using a heated steel trowel.
- Complete membrane base ply application over respective roof area prior to membrane top ply. Apply additional plies, as needed, in low areas or areas that may be subjected to ponding water.

3.5 Base Flashing Application – Smooth Surface Base Ply:

- Install and complete application of the base ply of flashing each day the base ply of roof membrane is installed.
- Install first ply of base flashing extending horizontally a minimum of 150mm (6inches) on to modified bitumen sheet roofing and vertically a minimum of 150mm (6-inches) above the top of the cant.
- Length of base flashings will be a maximum 2 meters (6-feet). Lap ends of base flashings 100mm (4-inches) minimum. Seal top edge of base flashing daily with a continuous troweling of elastomeric roof cement.
- Check lap seams and seal unbonded or discontinuous seams using a heated steel trowel.

3.6 Top Cap Membrane Installation - Smooth Surface Top Ply:

- Unroll top ply prior to installation and cut into 5-meter (15-feet) lengths. Allow membrane to relax prior to application.
- Align top ply centered over roof drain openings.
- Prior to application, re-roll “relaxed” membrane approximately 2.5 meters (7-feet 6-inches). Lay all layers of roofing free of wrinkles, creases, or fishmouths. Exert sufficient pressure on the roll during the application to ensure the prevention of air pockets.
- Beginning at the low point of the roof (roof drain) fully adhere membrane top ply to membrane base ply. Extend membrane top ply to top edge of cant. Stagger side laps of top ply a minimum of 300mm (12-inches) from side laps of base ply.
- Apply heat evenly across the face and full width of the roll while unrolling roll uniformly with an even downward pressure. Apply torch flame to the roll until the bitumen back coating reaches the design application temperature, resulting in melting of the burn-off film, a glossy appearance of the back coating, and an approximate 6mm (1/4-inch) to 13mm (1/2-inch) bitumen flow from the edge of the sheet. Repeat this process with the other end of this 5-meter (15-feet) roll.
- Roof Drain: Install top ply centered over roof drain opening extending under the clamping ring. Install clamping ring and secure.
- While installing membrane top ply, provide proper protection or method during application to prevent burning or charring on the surface of previously installed

sheet.

- During end lap application, trim the inside corner along the selvage edge of the underlying sheet at the end of the roll. The trimmed area shall be the width of the selvage edge and extend downward from the end of the roll to the outer side of the roll on a linear direction approximately 138mm (5 ½-inches) from the end of the roll. Trim outside corner of membrane top ply at end laps to provide a rounded finished corner.
- Overlap the side laps a minimum of 100mm (4-inches) and end laps a minimum of 200mm (8-inches). Stagger end laps of adjacent sheets of membrane tope ply a minimum of 1 meter (3-feet). Extend field sheet of membrane top ply to top edge of cant.
- Check lap seams and seal unbonded or discontinuous seams using a heated steel trowel.

3.7 Base Flashing Application – Granular Surfaced Top Ply:

- Apply top ply of flashings only after membrane is in place.
- Cut the flashing from the rolls using selvage edge as lap seam for adjacent sheets resulting in sheet lengths of nominal 1 meter (3-feet). Stagger laps from laps of underlying plies.
- Cut the granulated flashing membrane to extend to the saw cut reglet in the concrete walls at 450mm (18-inches) high from the existing top level of the roof slab.
- Extend the flashing membrane horizontally a minimum of 200mm (8-inches) onto the field of the roof surface beyond the bottom edge of the cant strip.
- Fully adhere and conform top ply of flashing to substrate. Extend bleed-out of applied base flashing a minimum of 13mm (1/2-inch) beyond the side or end lap. Embed granules, color to match to ply, in bleed-out of granulated sheets.
- Walls: Mechanically attach the top edge of the modified bitumen membrane flashing with appropriate fasteners and termination bar. Fastener spacing shall be 150mm (6-inches) on-center. Apply three-coursing consisting of an initial continuous troweling of elastomeric plastic roof cement, embedded reinforcing fabric, and a secondary application of elastomeric plastic roof cement along and concealing the top edge of base flashing and termination bar.
- Apply membrane top ply and terminate at the rise in the metal component. Apply a continuous bead of edge sealant or molten modified compound along edge terminations of modified bitumen sheet (i.e. flashing flanges, exhaust vents, metal edge, etc.). Bead of edge sealant shall match height of granule surfacing and shall be “canted” to shed water. Embed loose granules, color to match to ply, into newly installed edge sealant.
- Curbs: Mechanically attach the top edge of flashing with appropriate fasteners and termination bar and secure 150mm (6-inches) on-center. If flashing sheet is wrapped over top of curb, secure to top or inside of curb with appropriate fasteners. For curbs with non-removable hoods/covers/units, extend flashing to full height of curb and apply three-coursing of plastic roof cement and reinforcing

fabric. For curbs with removable hoods/covers/units, wrap flashing sheet over top of curb and secure to top or inside of curb with angle termination bar and appropriate fasteners spaced at 150mm (6-inches) on-center.

- Install flashing sheets on adjoining perpendicular sides (outside corners) of curbs or walls so that outside corners of flashing membrane sheet align and are rounded.
- Apply a boot or oval section modified bitumen sheet over outside corners of curb flashings to conceal cuts in flashing material at corner laps.
- Apply a three-coursing of elastomeric plastic roof cement and reinforcing fabric at vertical lap seams. Extend three-coursing under termination bar. Utilize masking or duct tape to create vertical straight edge of three-coursing. After application of three courses, remove tape. Embed granules into plastic roof cement, immediately after application, to achieve uniform base flashing color.

3.8 Metal Flashing:

Terminating on a vertical surface:

- Contractor shall provide a saw cut reglet in the concrete walls at 450mm (18inches) high from the existing top level of the roof slab to accommodate the new protective stainless-steel flashing to be installed over the bituminous felt (as required per site conditions).
- Contractor shall make sure that the reglet for the flashing is straight cut and evenly distanced from every point of the original roof slab.
- Contractor shall provide and install the flashing metal edge using 22-gauge stainless steel sheets for the fabrication of the metal edge.
- Contractor shall use self-tapping stainless-steel screws 6mm (1/4-inch) dia. x 38mm (1 ½-inches) long with stainless steel washer and integral rubber seal 25mm (1-inch) wide.
- Contractor shall provide and install continuous 25mm x 3mm aluminum termination bar to secure base flashings. Termination bar shall be secured 200mm on center with self-tapping, stainless steel screws 6mm (1/4-inch) dia. x 38mm (1 ½-inches).
- The counter flashing shall be made with 22-gauge stainless steel sheet. Counter flashing will be secured to the wall with self-tapping, stainless steel screws 6mm (1/4-inch) dia. x 38mm (1 ½-inches) long with stainless steel washer at 150mm (6-inches) on-center. The gap remaining between the counter flashing and the reglet will be filled with bituminous mastic.

Terminating above low height parapet wall:

- Over and above the lower parapet walls (Phase I) contractor shall install the flashing / metal edge as per attached drawing A-05a for installation. Contractor will use 22-gauge GI sheets for the fabrication of the metal edge. Contractor will use self-

threaded screws 6mm dia. 38 mm long with stainless steel washer and integral rubber seal (28 mm long). Contractor will arrange the entire necessary scaffolding; construction lift etc. for the satisfactory completion of the project.

3.9 Slip Sheet and Drain Board:

- Contractor shall cover the newly laid modified bitumen membrane with 300micron polyethylene sheet.
- Contractor shall provide and install PVC drain board above the polyethylene sheet.
  - ○ Manufacturer: Drentex Protect 50 by Texsa ○ High Density Polyethylene (HDPE)
  - ○ UV resistant ○ 0.5 mm thick sheet ○ Fire resistant (B2 DIN 4102)
  - ○ Thermal Stability (-40 to 80^0 C)

3.10 Extruded Polystyrene Insulation:

- Contractor shall provide and install inter lockable Extruded Polystyrene Insulation. The insulation will be applied in parallel rows and all sides/end joints will be installed closely but not forced. ○ Manufacturer: DOW "SL–Shiplap" ○ Closed cell and homogeneous structure ○ Low Thermal Conductivity – R10 ○ Density :32 – 354 Kg/cum
  - ○ Thickness; 50mm

3.11 Filter Fabric:

- The Contractor shall provide and lay filter fabric over the extruded polystyrene insulation.
  - ○ Manufacturer; TERRAM 500
  - ○ Nonwoven Polypropylene and Polyethylene based heat welded geotextile.
  - ○ Tensile Strength: 3 KN/m ○ Elongation: 35% ○ CBR puncturing strength: 525N
  - ○ Permeability: 150 Ltr/sq.m/sec

3.12 Concrete Pavers:

- Contractor shall provide and install concrete pavers as ballast over the roof assembly in one continuous process from slip sheet to paver.
- The paver shall be made with 1:1-1/2:3 ratio concrete with welded mesh in center of concrete for reinforcement. Each paver shall be 300mm x 300mm x 38mm (12-inches x 12-inches x 1 ½-inches).
- Aggregate for pavers shall use 3/8" stone (Jeera Rodi). The pavers shall be properly cured before lying. For curing, each paver shall be dipped in water for a minimum of seven days.

3.13 Penetron Coating and above that Elastomeric Coating on Exposed Surfaces (overhangs):

- The Contractor scraps clean all the overhangs to get rid of any existing coating or loose plaster.
- Contractor shall carry out repairs with cement slurry or cement fine sand mortar plaster depending on depth of the repair. Ratio for repairs shall be 1:4 cement fine sand mortars.
- Contractor shall do surface preparation before doing elastomeric coating (three layers – one primer and two coats) with synroof coating on all the overhangs
- The Contractor shall paint entire exterior walls of the plant room with one coat of cement primer and two coats of elastomeric white paint.
- After completion of the project the Contractor shall touch up the painted areas.
- The Contractor shall protect the entire newly laid waterproofing system against splatter of paint while touching up the walls.

3.14 Miscellaneous Painting:

- Repair and renovate existing non-ferrous rooftop and metal system sheet metal fabrications as required for permanent watertight installation.
- Paint all exposed ferrous metal and sheet metal with metal primer at end of project.
- Rust Inhibitive Primer: 100 percent acrylic resin primer. Color; Aluminum

3.15 Rooftop Equipment:

- USG will disconnect and move solar water heaters on the roof as required to install roofing materials completely in accordance with specifications.
- When units or equipment are to be moved, disconnect, and move to protected area to prevent damage to parts or components. Reset and reconnect at Contractor's expense.
- Disconnection and reconnection shall be performed by USG team.

4.0 RESPONSIBILITY OF THE CONTRACTOR

4.1 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.

4.2 The Contractor shall identify and appoint a Project Manager who should be qualified and have experience in the field of similar projects for the management of this Contract. Project Manager shall always be present on the site. He/She shall be able to speak and write the English language.

4.3 The Contractor shall comply with all local labor laws, regulations, customs and practices pertaining to labor, safety and similar matters. The Contractor shall promptly report all accidents resulting in lost time, disabling, or fatal injuries.

4.4 All expenses towards mobilization at site and demobilization include bringing in equipment, workforce and materials, profit and overheads, dismantling the equipment, clearing the site etc. should be included in the rates quoted by the Contractor. No separate payment on such expenses shall be entertained.

4.5 The Contractor shall provide and use LPG gas for heating of Bitumen. Under no circumstance will wood be allowed for heating the bitumen.

4.6 Contractors shall provide the necessary scaffolding, overhead protection barriers, construction lift, debris chute and associated equipment for the satisfactory completion of the project.

4.7 The Contractor should arrange for the site visit of the professional in his field from the manufacturer of materials used in this project that will be providing warranties to supervise the project during work in progress.

5.0 SECURITY CLEARANCE

5.1 After Contract Award: Contractor shall collect security forms within 2 days from the Embassy. Contractors shall complete two types of forms for their cleared workers and daily workers. The cleared workers will escort the daily workers. Forms should be filled with proof of residence, date of birth, place of birth and photograph. Duly filled forms shall be submitted to the Embassy within 10 days. It takes approximately 15 days to provide security clearance. A Notice to Proceed cannot be issued unless security clearance is obtained.

5.2 The Contractor shall inform and provide in writing transportation details (vehicle registration number, drivers name and date of delivery) to the Embassy at least 24 hours in advance for all material and equipment deliveries.

6.0 SAFETY

6.1 Contractor is responsible and shall continue management and implementation of a safety and health program throughout construction.

6.2 The Contracting Officer and the Post Occupational Safety and Health Officer [POSHO] reserve the right to suspend work when and where Contractor's safety and health program is operating in an inadequate or non-complying manner.

6.3 Fire extinguishers shall be always kept on site during torch applied installations.

6.4 Contractor shall provide all Personal Protective Equipment for the workers as per the requirement of the site. Work will be stopped in case the proper protection equipment is not found with the workers and the lapse of time shall be at the Contractor's expense.

PART FOUR - SCHEDULE

7.0 PERIOD OF PERFORMANCE

7.1 **PERIOD OF PERFORMANCE:**

A. Solicitation & Award of Contract:
   1. Pre-Proposal Site Visit — 10 days prior to Award
   2. Award — Zero Day

B. Pre-Construction Submittals:
   1. Insurance & Bonding: — 14 days after Award
   2. Crew Information: — 10 days
   3. Embassy Review: — 21 days
   4. Schedule: — 15 days
   5. OBO & Embassy Approval: — 30 days
   6. Product physical samples — 10 days

D. Mobilization & Construction:
   1. CMR Roof Replacement On-site — 15 days
   2. Final Cleanup Begins: — 5 days prior to completion

E. TOTAL PERIOD OF PERFORMANCE: 45 days (on site)

7.2 **PROPOSAL SCHEDULE:**

A. Proposals shall be evaluated based on total fixed cost and shall include labor, project start-up expenses and worker incidentals, overhead, profit, taxes, and DBA Insurance (if required in host country) as a complete project.
   1. Labor
   2. Mobilization Expenses
   3. Overhead & Profit
   4. Taxes
   5. DBA Insurance (if applicable)

B. **TOTAL ROOF REPLACEMENT PROPOSAL: $_____**

7.3 Contractor shall submit crew security forms, construction bar chart of complete project schedule and material product data after Contract Award.

7.4 Working hours shall be 8:00 AM to 5:00 PM Monday through Saturday. No work shall be done on Sundays and holidays unless otherwise approved.

7.5 Milestones:

Pre-proposal Site Visit:	……
Pre-Construction Submittals	Within 10 Days of Award
Notice to Proceed:	Within 10 days of Submittal Approval
Construction	120 days (on site)

Final Clean-up and Acceptance Within 10 days before Completion

PART FIVE

Attached Drawings.

END OF STATEMENT OF WORK