Improvement works at cemetery in Larnaca area Description and details

Site Identification

- GPS identification: 34°55'34.2"N, 33°32'26.1"E
- Site Category: Village Cemetery
- Original Use: Cemetery
- Current Use: Not in use
- Materials: ashlar and rendered stone perimeter wall, metal gate, mosaic tombs
- Approximate Area: 2916 m²



Figure 2, Site Layout

Satellite Photo



Figure 3, Satellite Photo



Photographic documentation

Figure 4, Cemetery's Yard



Figure 5, Cemetery's Yard



Figure 6, External Wall, North West View



Figure 8, Perimeter Wall, North East View



Figure 7, Perimeter Wall, South East View

Technical Description

The cemetery is located on the eastern boundary of the village. The cemetery is fenced by rubble-stone perimeter walls, rendered on the outside, with the exception of the northern wall towards the main road, which was recently repaired (reconstructed or cladded) by ashlar sandstone. The entrance to the cemetery is located on the northern boundary, on the main road and its metal gate was also replaced recently.

Several burials are located in the cemetery yard. The graves are, in their majority, positioned parallel to the north boundary of the cemetery, but they are rather dispersed around the plot.

Work Description

- 1.0 General cleaning / pruning/ vegetation removal
- 2.0 Repairs on the Perimeter Walls
- **3.0** Painting of the existing metal members of the cemetery

Specifications for the Works

1.0 General cleaning / pruning/ vegetation removal

1.1 Documentation of current state

- a. The contractor is expected to provide a measured drawing (plan) by an architect where all burials will be marked (approximate location & size). In the drawing also vegetation should be marked (approximate location and size and type). The drawing should include also notes on the construction and condition of the perimeter wall. If needed the plan might be accompanied by photos and sketches.
- b. The current state of the cemetery before the works should be also documented photographically and submitted to UNDP.

1.2 Dealing with the burials on site

- a- All gravestones and other burial objects should remain as they are, even if displaced. No burial object should be moved or removed from site.
- b- The contractor should not enter to the site with heavy machinery, in order to prevent damage the burials.
- c- The contractor and contractor's crew must have understanding that the tombs, tombstones and historic markers are very fragile and that, works in historic cemeteries must be conducted with outmost care as not to damage in any way the cemetery's elements.

1.3 Pruning

a- Check cemetery trees for dead branches and other signs of ill health; the contractor should remove any dangerous limbs of trees from neighboring plots also. UNDP should be informed before acting on trees from neighboring plots.

- b- The contractor should provide to the engineer a method of statement for the pruning for approval, taking into account that heavy machinery should not enter the site, in order to prevent any damage to the burials.
- c- If woody plants are growing adjacent to the tombs, they can be cut back to ground level. Any cutting back should be done gradually by removing smaller growth and then larger branches.
- d- Care must be taken to ensure that branches do not fall onto structures or people. All H&S measures should be taken (according to H&S plan and H&S recommendations for the approved pruning method)

1.4 Vegetation removal

- a- The contractor can uproot small trees or shrubs only upon approval from the UNDP Engineer.
- b- Do not attempt to remove all the vegetation right away but, using secateurs and/or pruning saw, remove smaller branches so that the main stems can be revealed.
- c- Clear all debris as it accumulates; arrange for disposal to an appropriate location. Leaving debris allows new seeds to take root.

1.5 Treating weeds

- a- In dense areas a power rake or hand raking can loosen the weeds. Rototilling is not recommended because of the potential for damage to stones, graves, and archaeological remains. Great care should be given in removing the grass from the immediate vicinity of gravestones or tombs.
- b- Chemical herbicides are not recommended for broadcast or spray application. Many contain salts and are often acidic conditions which can be harmful to marble and limestone.

2.0 Repairs on the Perimeter Walls

2.1 Reconstruction of Missing Parts of the perimeter wall

- a. Carefully remove the displaced and loose stones of the masonry from the collapsed parts of the walls, if this applies and store safely for reuse.
- b. If other stone material from a wall's collapse still exists on site this should be stored safely and reused for the reconstruction of the wall.
- c. Dry cleaning of the masonry cavity of loose surface deposits on the stone surfaces, dirt, vegetation, loose mortar, and loose debris to be performed using soft flat brushes, natural fibre brooms and vacuum cleaners.
- d. Make sure all loose debris is removed from the masonry cavity and rinse with potable water (PH 7 or higher) to remove dust.

- e. Pre-wet adjacent surfaces with clean, potable water before initiating rebuilding of the masonry.
- f. The masonry should be rebuilt with the same type of stones and mortar and in similar style and workmanship with the existing wall (taking into account the style and form of any coursing patterns, masonry structure, stone shapes, etc.). Stone should be laid in an evenly filled bed of mortar, with full mortar coverage on horizontal and vertical joints. Adjust stone units to final position while mortar is soft and plastic. Repointing with ready-to-use mortar containing natural hydraulic lime base material to match existing color. The mortar must match in color, texture, tooling, and sand content the existing. The objective is to match the historic mortar, so that the new material will not conflict visually or physically with the original materials. It must also have less compressive strength than the surrounding stone material. Periodic rewetting of the newly re-pointed area should be conducted as this will also prevent premature drying. Stones are to remain clean of any pointing overspills. Excess mortar must be cleaned before dried. When mortar is thumbprint hard, use a tool to match original appearance of joints. Remove excess mortar from edge of joint by brushing. Maximum tolerances from plumb and level new work, not to exceed variation from plumb and level of adjacent existing work. Clean the new wall surface with natural brush after mortar is dry.
- g. Overall aim is to reuse the existing stone, available for the reconstruction of the masonry. If replacement units are required, they should match original sandstone in color, texture, and size, and be free from salts and other contaminants.
- h. All new materials must be checked for consistency, colour, absence of salt, ingredients, texture, etc. The contractor should submit material acceptance forms for all materials to be used for the reconstruction (template will be provided by UNDP).
- i. Method statement to be provided for the wall reconstruction.

2.2 Lime Capping on the walls

- a. Lime capping will be applied on the walls wherever missing.
- b. Dry cleaning of stone surfaces from loose deposits with soft mechanical systems in order to remove deposits from surfaces, including removal of nails, iron items, and whatever is not original to the historical building.
- c. Deep manual cleaning and consolidation of the joints with lime mortar.
- d. Laying on top of the walls a mixture of hydraulic lime mortar.
- e. Final surface must have a convex curved surface to disperse the rain water.
- f. If a different method will be used for the lime capping, a method statement to be provided for the wall capping together with the wall reconstruction.

2.3 Repointing of the perimeter wall where needed

a. In case repointing is needed this should be done in the following manner; Repointing with ready-to-use mortar containing natural hydraulic lime base material to match existing color. The mortar must match in color, texture, tooling, and sand content the existing. The objective is to match the historic mortar, so that the new material will not conflict visually or physically with the original materials. It must also have less compressive strength than the surrounding stone material. Periodic rewetting of the newly re-pointed area should be conducted as this will also prevent premature drying. Stones are to remain clean of any pointing overspills. Excess mortar must be cleaned before dried. When mortar is thumbprint hard, use a tool to match original appearance of joints. Remove excess mortar from edge of joint by brushing. Maximum tolerances from plumb and level new work, not to exceed variation from plumb and level of adjacent existing work. Clean the new wall surface with natural brush after mortar is dry.

3. Treatment and painting of the existing metal members of the cemetery

- a. All rusted metal parts and metal fence should be treated for rust. Rust should be removed and the metal surfaces should be treated with an active primer, which contains active corrosion inhibiting additives and finally painted in the same color as original. Satisfactory time should be provided to the primer to mature before proceeding with the paint coat.
- b. If corrosion has reduced the cross section of the steel elements to less than 80% of its original diameter, then they should be cut to the required extent needed and replaced by metal members of equivalent type (material type, profile and shape should be as original). The new metal members should be welded to the existing structure and treated to match the original.
- c. The contractor must ensure that the gate is in working condition.
- d. A lock should be supplied for the gate.

Note: All materials such as undercoat and paints will be approved for quality and color by the engineer, before any works proceed.