# VOLUME 3

# TECHNICAL SPECIFICATIONS

**Name of contract tendered: „Construction works on Magurata Cave” under project *CB007.2.11.064***

**Reference №** CB007.2.11.064-WO-1

This public procurement is subject to Construction activities in Magura Cave, carried out within the project "Preservation and attractive exposure of the natural and cultural - historical heritage of the municipalities of Belogradchik and Bolevac", № CB007.2.11.064 and contract №. RD-02-29-106 / 17.05.2021

**1. History and current status**

Magypa Cave is located in northwestern Bulgaria, 17 km from rp. Belogradchik, in the limestone Rabishka mound (461 m above sea level). It consists of a main gallery oriented southwest-northeast and three side branches. The total length of the open galleries is about 3 km. The site is registered as an immovable cultural property of "National significance", classified as a group archaeological and artistic immovable cultural property.

The landscaping decisions made in the cave are from 1961. and need to improve their performance and maintenance due to their compromised condition. The lighting is poor and in poor condition, most of the lighting fixtures do not function and are not in good condition, which leads to difficult passage along the tourist route. The metal railings are rusty and need cleaning, in some places - replacement with new ones, and some sections of the route are missing and new ones must be added to ensure the safe passage of the group of people along the alley route.

The cave is electrified by a 20 kV power line from the Mezdra power supply area and a low voltage overhead line to the main panel in the cash register building. In 1987 a mast substation was built near the entrance of the cave. Along the cable route, power is supplied to the main electrical panel in an outbuilding.

**2. Purpose of the project**

The aim of the project is to increase the tourist attractiveness of Magura Cave and to diversify the tourist product of the region. In order to achieve this goal, it is necessary to carry out current repairs of the lighting system and replacement of the lighting fixtures of the Magura cave. For this purpose, technical documentation has been prepared for the part "Architecture" and the part "Electro". The planned activities do not require a construction permit, in accordance with Article 151, paragraph 1, point 1 of the Spatial Planning Act, as they constitute "current repairs" within the meaning of § 5, point 43 of the Additional provisions of the Spatial Planning Act. An Opinion issued by the Chief Architect of Belogradchik Municipality and an Opinion of the Ministry of Culture have been issued for the planned repairs.

**Part Architecture - planned activities:**

1. Replacement of lighting fixtures by installing modern energy efficient light sources and lighting fixtures. Lighting fixtures need to be "cold" sources (LEDs).

2. Cleaning and anti-corrosion treatment of the existing railings, and in places where necessary new ones will be added;

3. Anti-corrosion treatment and repair of the steps in the Gallery with the drawings. Filling the formed "pockets" with earth mass obtained from the excavation works made during the archeological excavations;

4. Replacement of the metal door type lattice, located at the entrance to the Gallery with drawings. The holes need to be horizontal (every 20 cm);

5. Replacement of the metal fixed ladder, located in the gallery with the "Oriental City" at a height of 4.40 m;

6. Restoration of the damaged stone pavement in the places where it is compromised (during previous installation of metal railings).

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| Dismantling of metal railings |
| Treatment of existing metal railings with corrosion inhibitor, primer and decorative coating 3 in 1 |
| Delivery and Installation of aluminum railings |
| Anticorrosive treatment of reinforcement on stairs (Gallery with drawings) |
| Restoration of compromised steps and alleys with earth mass (Gallery with drawings) |
| Delivery and Mounting of an aluminum railing over existing massive (after the entrance of the cave - to the Triumphal Hall), h = 30 cm |
| Dismantling the metal grille - the door (to the Gallery with the drawings)  \* the exact dimensions to be taken from the place |
| Delivery and Installation of a grille metal door (to the Painting Gallery) with a horizontal screen over 20 cm (with a height of about 2.50 m)  \* the exact dimensions to be taken from the place |
| Disassembly of an existing metal ladder |
| Delivery and installation of a metal fixed ladder with a height of 4.40 m and a distance between the steps of 30 cm, width between 40-60 cm \ |

**Part Electrical - planned activities:**

1. Replacement of the existing halogen floodlights and fluorescent lighting fixtures with new ones with LED light sources.

2. Replacement of the boxes of the electrical electrical panels with new ones with degree of protection - IP54.

3. Replacement of protective circuit breakers by installing new ones with “D” cut-out curves.

4. Replacement of all starting electrical panels, contactors, switching relays.

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| **LIGHTING INSTALLATION** |
| Delivery and installation of LED spotlight type LED10W / 840, IP65 for replacement of existing ones with design power 60W standard lamp, emission angle to FLOOD |
| Delivery and installation of LED lighting fixture type Projector LED20W / 840, IP65 for replacement of existing ones with a design power of 100W standard lamp, beam angle up to 40º |
| Delivery and installation of LED lighting fixture type Projector LED50W / 840, IP65 for replacement of existing ones with a design power of 200W standard lamp, beam angle up to 40º |
| Delivery and installation of LED lighting fixture type Projector LED100W / 840, IP65 for replacement of existing ones with a design power of 500W halogen lamp, beam angle up to 100º |
| Delivery and installation of LED lighting fixture type Projector LED200W / 840, IP65 for replacement of existing ones with a design power of 1000W halogen lamp, beam angle up to 100º |
| LED luminaire type Projector LED2x150W / 840, IP65 to replace existing ones with a design power of 1500W halogen lamp, beam angle up to 100º |
| Supply and installation of LED Lighting Projector LED200W / 840, IP65 for replacement of existing ones with projected power 250W sodium lamp, radiation angle up to 100º |
| Technical control and adjustment of lighting fixtures |
| Delivery and installation of LED lighting fixture for direct mounting to wall type Applique set with LED module 3-5W at 220V / 840, IP65, with anti-glare grille |
| Delivery and installation of ROPE LIGHT illuminated LED line with length 20m, possibility of loading up to 60m, safe supply voltage 36V, length of one segment 33cm, 10pcs LED in segment, 1.5W / m |
| Delivery and installation of aluminum profile for installation of illuminated LED line with a length of 2 meters and PVC transparent diffuser |
| Delivery and installation of power supply 220AC / 36DC 35W, IP65 |
| Delivery and installation of additional connectors and accessories for route lighting installation |
| Delivery and installation of IP65 Junction Boxes for Outdoor Installation, Kit with Glands |
| **MACHINES, EQUIPMENT AND CABLES** |
| Supply and installation of an AOE-T-1electrical panel according to Annex 3, IP54, supplied with:  - a power disconnector with an exterior façade handle 50A, 3p:  - auto-interrupter 40A, 3p, curve "D" - 1nm  - automatic switch 16A, 1p, curve "D" - 3 pcs  - DTS 40A, 4p, 30mA - 1pc  - metal cabinet with nozzles, IP54  - grounding and zero bus, terminals |
| Delivery and installation of an AOE-T-2 electrical panel (up to 9) according to the application scheme 3, IP54, complete with:  - automatic circuit breaker 32A, 3p, curve "D" - 1nm  - automatic switch 16A, 1p, curve "D" - 5 pcs  - metal cabinet with nozzles, IP54  - grounding and zero bus, terminals |
| Delivery and installation of an T-1 electrical panel (up to 9) according to the application scheme 3, IP54, complete with:  -a power disconnector with an outside handle on the façade 100А, 3р  - automatic circuit breaker 100A, 3p, curve "D" - 1pcs;  - automatic circuit breaker 63A, 3p, curve "D" - 3pcs;  - automatic circuit breaker 40A, 3p, curve "D" - 1pcs;  - automatic circuit breaker 16A, 1p, curve "D" - 5 pcs;  - ДТЗ 40А, 4р, 30mA - 1pcs;  - pulse relay 32A, 1p - 5pcs;  - control buttons with indication, IP54 - 3pcs  - metal cabinet with nozzles, IP54  - grounding and zero bus, terminals, |
| Delivery and installation of an T-2 electrical panel (up to 9) according to the application scheme 3, IP54, complete with:  - automatic circuit breaker 63A, 3p, curve "D" - 3pcs;  - automatic circuit breaker 40A, 3p, curve "D" - 1pcs;  - automatic circuit breaker 16A, 1p, curve "D" – 5 pcs;  - ДТЗ 40А, 4р, 30mA - 1pcs;  - pulse relay 32A, 1p - 5pcs;  - control buttons with indication, IP54 - 3pcs  - metal cabinet with nozzles, IP54  - grounding and zero bus, terminals, |
| Supply, montage and adjustment of diesel-generator unit 15kVA, kit with own board АВР |
| Delivery and laying of cable type CBT 3x1,5mm2 |
| Delivery and laying of cable type CBT 3x2,5mm2 |
| Delivery and installation of a panel with 2 waterproof contacts for outdoor installation IP65, 220V |
| **PUZZO-TRAINING WORKS** |
| Measurement of transient resistance of ground loop |
| Cable line fitting |
| Checking loop L-N-PE |
| Checking ID-protection |
| **DISMANTLING WORKS** |
| Dismantling of existing electrical panels |
| Dismantling existing projectors and lighting fixtures |

The technical documentation is an integral part of the technical specification and should be fully considered. Wherever the technical specification and technical documentation include brands and types the tenderers should consider that they can offer any equivalent material/item.