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# MECHANICAL REPORT

**EMERGENCY CONSOLIDATION OF THE NORTHERN WALL PORTION OF THE  
CASTLE OF LEZHA /**  
STABILIZIMI EMERGJENT I NJË PJESE TË MURIT VERIOR NË KALANË E LEZHËS

**DRAINAGE SYSTEM**  
SISTEMI I DRENAZHIMIT



**ATELIER 4**  
ARCHITECTURE • ENGINEERING • CONSULTING

## 1. DRAINAGE SYSTEM

The purpose of the drainage system is to rehabilitate and improve the existing drainage system of the castle in order to collect, direct, and remove the surface rainwater that falls in the interior territory and infiltrates the underground of the part of the wall that is being restored in the castle of Lezhe with the aim of removing him outside its perimeter.

In the interested part of the castle, its drainage system (it is assumed) was built in a similar way to all the drainage systems of other parts of the castle, which are relatively functional even today. These systems operate based on the principle of regulating surface water and water that infiltrates through the ground, through simple systems of their discharge channels outside the walls of the castle, in the holes that are seen in its existing undamaged walls.

Even in cases of other buildings of the same years/periods, the construction techniques have been the same and appear to be the only possible solutions, but applied quite successfully.

In the part we are studying, the perimeter walls are broken (for many reasons, including interventions from the outside...) and for this reason we see "traces" of these holes in the remaining parts of the walls. According to the above technical analysis and the findings in our case, the rehabilitation of the drainage system of this part of the castle consists in the construction of a functionally similar system, but using more suitable new materials for an improvement of the drainage effect. of underground waters. In this case, the system will certainly be built from the ground, covered with layers of soil following the profile of the surface terrain of this part of the castle, in accordance with the configuration/architectural solution.

The drainage system consists of the following elements:

- The drainage network, which will be a drainage pipe with 360° holes and flexible PE-HD material that is characterized by technical properties suitable for the conditions of underground water drainage, such as high resistance to corrosion, scratches, elastic structure, weight and easy etc.
- Geotextile layer for wrapping the drainage pipe, which has a protective, stabilizing, draining and filtering function of the soil.
- Placement according to the configuration in the project in the gravel layer, surrounded on the sides and covered on top with a layer of gravel for its stabilization, also wrapped with geotextile for the purpose of filtering the drained waters and protecting the drainage pipe from filling with soil decantations, etc.

The drainage system was built in accordance with the architectural project and as shown in the respective drawings, this system does not affect the visual appearance of the architectural project.