



Drainage trench around the walls to prevent rising damp.

IS IT:

Product

Technology

Equipment

APPLICABLE FOR:

Restoration

Rehabilitation

New Construction

APPLICABLE ON:

1. *Foundations and underground structures*

2. *Vertical structures*

3. *Horizontal structures and vertical connections*

4. *Roof and terraces*

5. *Façade and building envelope*

6. *Finishes and completion elements*

7. *Integrated services*

8. *General strategies for building recovery*

Related companies: *No companies; university research; structural study.*

DESCRIPTION

Construction of a suitable drainage ditch / trench (for receiving and removing water).

WHY TO USE

This technique is needed for the protection of an existing masonry wall from water ingress and penetrating damp. When there is a problem of penetrating damp in the case of historic buildings, this technique is a compatible solution that respects the architectural value of the building.

HOW TO USE AND APPLY

Construction of a trench on either side or on one side of a masonry wall in order to ensure ventilation of the foundation and protection from penetrating moisture. Lining the foundation and the lower part of the wall with a waterproof membrane may also help protect the wall from future dampness.

TECHNICAL CHARACTERISTICS

A typical method to deal with rising humidity is to create a perimeter ditch inside and outside the building with a drainage system - if this is possible -, to remove groundwater away from the building, as well as to eliminate the surface effect of moisture around the building resulting from pipe discharge.

There are cases where the implementation of such a system outside the building is impossible due to its built context and in that case a trench can be also created inside the building.

This perimeter ditch coupled to a drainage system may be constructed following the steps below.

- An excavation should be made about 30 cm wide and 65cm deep around the perimeter of the masonry wall at the level of the foundations; next the existing mortar should be removed from the masonry joints, and these then filled with new mortar.

- Suitable drainage pipes should then be installed at the lowest possible level, which will regulate the degree of water in the ground.

- The excavation area should then be filled with gravel and covered with gravel.

RECOMMENDATIONS AND OTHER INFORMATION

By the same token, it is possible not to fill the perimeter excavation, and to place a coating which will attract the soluble salts. The drainage system can be realized by forming the appropriate slopes of the exterior pavement and creating a trench where the drainage pipe will be placed and then filled with gravel. This way rainwater is removed and stagnant water around the base of the wall is removed.

EXAMPLES

The case of an urban vernacular dwelling in the historic centre of Nicosia; A case study of an urban listed building in Limassol used for the purposes for Cyprus University of Technology.

REFERENCES / SOURCES AND LITERATURE

<http://owsurveyors.co.uk/french-drains/>

Franzoni E. (2014) Rising damp removal from historical masonries: A still open challenge, *Construction and Building Materials* 54:123-136

www.ihbc.org.uk/guidance_notes/docs/tech_papers/French%20Drains.htm

WEBSITE OF THE COMPANY

N/A



IMAGES AND CAPTIONS



Fig.1-2: Small trench around the walls for protection from raising damp.



Fig.3: Small trench inside a historic building in Limassol filled with gravel.

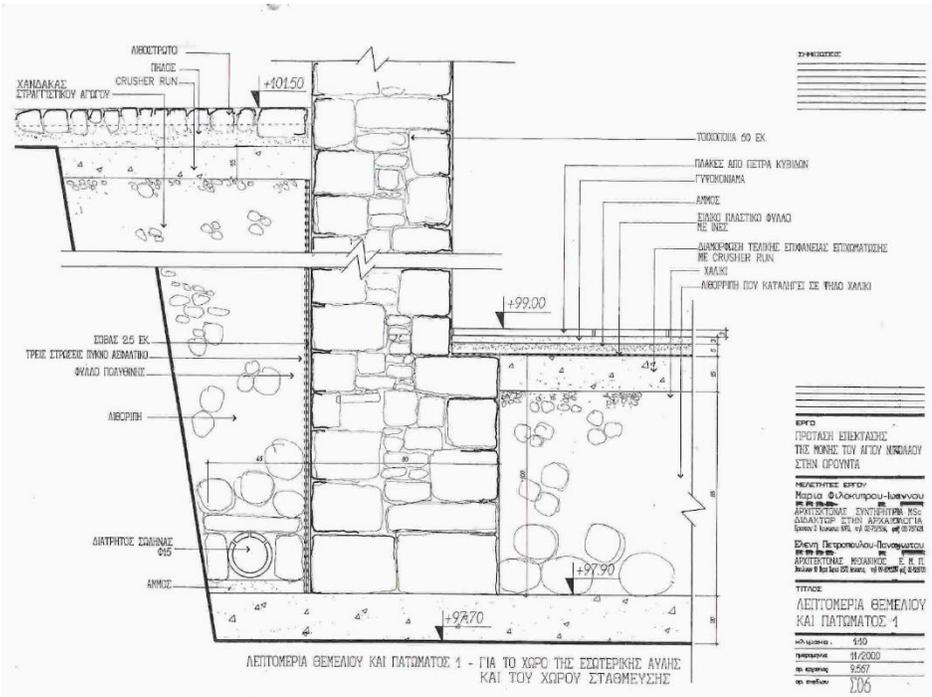


Fig.4: Sketch showing a trench outside a vernacular structure. ©Eleni Petropoulou



Fig.5: Sketch showing a trench outside a vernacular structure. ©Chrysanthos Pissarides