

# Ventilation system for drying out walls after a flood: influence of the composition of the walls

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## ABSTRACT

The conservation of historical buildings assumes, nowadays, a considerable importance and it has had a great development in these past few years. We can say that among all the different kinds of pathologies, dampness in historical buildings is an important one. The most emblematic buildings, for historical reasons, were built along the floodplains presenting, therefore, an increased exposure to the probability of a flood.

After the occurrence of a flood building elements will see its moisture content suddenly increase, with all losses resulting therefrom. It is very important that, after the occurrence of a flood, the reduction in moisture level of the walls is achieved as quickly as possible.

In this past years, research was carried out in order to develop a method to minimize the effects of rising damp. This method consists of installing ventilated system at the wall base. This system has been validated experimentally and numerically and has achieved satisfactory results in what concerns to the reduction of the level achieved by the water front in the wall.

Now we are performing numerically investigation to validate the efficiency of a base wall ventilation system as a technique to improve the drying of walls of older buildings after a flood.

Since experimental investigations are rather expensive and time-consuming, there is an increasing interest in use calculative methods in order to assess moisture behaviour of building components.

Computational programs allow a two-dimensional analysis of the simultaneous heat and moisture transport in building components, which is the best approximation to drying of moisture.

Our main goal is modelling the drying process of a wall after being affected by a flood, analysing the efficiency of the ventilation system and analysing the influence of different parameters on all the process.

What is intended to present in this paper is the first results obtained and that are part of a wide investigation that is being carried out.

## REFERENCES

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