euronews

Play/Pause Video

Terra Viva: a future for the past

31/08 15:19 CET

terra-viva

Weathering the effects of salt erosion

Historical buildings are constantly exposed to a fast changing environment. Where once the main threat came from smoke stacks and car exhausts, climate change has brought a more subtle risk: salt weathering. This problem has always existed, but is fast getting worse, especially around the Mediterranean. Spain's University of Granada is studying cutting edge methods to limit it.

"This area is more and more arid: there's more and more salt accumulation. There's the problem of over-exploitation of aquifers and more salt is getting into the structures of historical buildings. If we add to all this unsuitable restoration materials, that attract even more salts, we have a kind of a time bomb against our architectural heritage".

"We think this phenomenon has got worse because of climate change. It's a kind of desertification on a small scale".

At the San Jerónimo monastery, the University of Granada is studying the effects of salt decay and new experimental ways of preserving historical buildings. Bioconservation is one example: by enhancing the development of local bacteria, a kind of bio-cement makes the stone more resistant.

"Here we have a clear example of salt weathering. In the lower part, salt has crystallized in a way that little by little has eroded the limestone. The stone surface that should be here doesn't exist any more."

It's in this laboratory not far from the monastery where Professor Navarro and his team simulate and accelerate the effects of salt weathering on different materials. As part of the European program "Saltcontrol," they work on salt inhibitors with astonishing results:

"As we cannot eliminate this problem, we have to live with it, we try to minimize it. Here we put a compound, a polyacrylate, that inhibits the growth of salt crystals and blocks the damaging effect of salts. The salts are still there but they cannot generate pressure within the pores, so they cannot damage stones."

Inside the Church of San Jerónimo, several mural paintings and decorations are now lost forever because of the salt.

Researchers have found a very simple way of stopping the attack.

Applying a polyacrylate, usually used as a cement smoother, makes salts form as a harmless effervescence and the erosion stops.

Scientists expect the effects of salt weathering to spread to central and northern Europe. In Australia, salt decay has become an economic and social challenge.

"Salt weathering is a major problem. Private home owners have major problems, the mechanical pressure of salts as they cristallize have caused houses to fall down within 15 to 20 years. Every year our problem is getting bigger and I guess these problems are going to extend here into Europe. It's like we're maybe 30-40 years ahead of you."

The goal in Granada is to develop new ways of protecting Europe's architectural jewels, and also our homes, from subtle threats linked to climate change.

tags: Climate, Culture, Research

Related Articles

Crisis in Kenya tag: Climate





- Europeana, Europe's digital library tag: Culture
 - New technique gives insight into ancient arachnids tag: Research

Top Stories & Breaking News

Politics



UN calls for separate Gaza inquiries

Ads by Google Enjoy the Alpujarras Las Chimeneas offers great rooms Lovely walks and new restaurant

alpujarra-tours.com

Globe Bank

Learn as you play! Become conscious of our environment

http://www.euronews.net/2009/08/31/terra-viva-a-future-for-the-past/

