

SEAWATER COULD SAVE VENICE FROM SINKING

By Dominic Standish

(ANSA) - Venice, 22 December - The very seawater that threatens to engulf Venice could save the sinking city, according to new research.

Researchers at the University of Padua believe that if seawater could be injected into the rock under the lagoon, the rock would swell. The resulting pressure would lift the lagoon bottom and push Venice higher.

The intriguing theory is explained fully in the latest edition of the American journal Eos.

The Padua researchers, who believe Venice could be raised by as much as 30 cm over ten years, note that the lagoon floor could also be puffed up using carbon dioxide.

"However the injection of seawater would be simpler and cheaper," they state in Eos.

Venice is built on a group of islands in a lagoon which is connected to the Adriatic Sea by three entrances. Over the last 100 years the sea level in Venice has risen by 23 cm, partly due to subsidence and partly because of other factors including climate change.

For centuries, Venetians have built their pavements and 'palazzi' at increasingly high levels in order to defend themselves against the high tides that now invade their city over 40 times a year.

But rising sea levels now mean these measures provide insufficient protection from flooding.

This year work began to build mobile barriers at the entrances to the Venetian lagoon. A total of 79 barriers will rise from the seabed to seal off the lagoon from the Adriatic Sea when high tides and flooding are predicted.

The project, known by the acronym MOSE, is expected to be completed in 2011.

Critics of the mobile barriers, such as the marine geophysicist Paolo Pirazzoli, have predicted that they could be unable to cope with high sea level rises due to global warming.

Paolo Cacciari, a Venice municipal councillor, is well aware of this danger and it is part of the reason for his commitment to the 1997 Kyoto Protocol on global warming.

"If Kyoto is not ratified, we will be submerged," declared Cacciari recently.

The Kyoto Protocol aims to decrease greenhouse gases in the atmosphere, partly by placing restrictions on energy production, transport and agriculture.

The proposal to inject fluid under Venice to lift the city is being cited by some scientists as an example of how with a little ingenuity - the world can adapt to climate change.

The researchers from Padua University hope their proposal will complement the MOSE project and also satisfy its critics. Lifting Venice would reduce the need for the barriers.

But raising Venice as suggested could also cause

problems. For one thing the gradual movement of the city's rock base might cause ancient buildings to crack, experts say.

Further research and debate about this proposal will be needed before a full evaluation can be made, they warn.

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