

EGU24-10646, updated on 09 Nov 2024
<https://doi.org/10.5194/egusphere-egu24-10646>
EGU General Assembly 2024
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Protects and Heats

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The project "**Protects and Heats**" aims to safeguard the environment, to reduce the carbon dioxide emissions and the risk of collapse of buildings affected by earthquakes.

This is a new way to heat and cool buildings and at the same time mitigate the seismic vibrations.

The logic of the project is to create a discontinuity (Moat) in the ground in front of the structures to be protected, similar to damping methods that are implemented to dampen the vibrations produced by mechanical machines and without compromising the stability of the buildings themselves.

The project involves the construction of a double row of aligned micro piles and the insertion of HDPE and steel pipes inside the vertical drilling holes.

Closed circuit geothermal probes will be positioned, inside some vertical holes, with a low enthalpy closed circuit geothermal system.

The method of the project is achieved by combining two types of technologies:

- The first concerns the interposition, between the direction of the seismic waves and the buildings, of a damping barrier.

The vertical barrier starting from the topographic surface will be positioned outside the buildings, generally orthogonal to the direction of the seismic waves.

- The second concerns the installation of geo-exchange pipes, in the holes.