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Heat pumps for exploitation of geothermal sources in Milano City

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The employ of geothermal heat pumps to supply large heating systems is a technology which has been developed in the last decade in Italy, in particular using shallow geothermal sources thanks to following technical, environmental and economical advantages in comparison with deep resources:

- shallow resources are easier to be found
- no mining risk or at least reduced mining risk
- strong reduction of drilling costs
- simpler authorization procedures
- lower problems for the chemical composition of the geothermal fluid
- need in any case for the use of a heat pump system
- possible compensation of the reduced temperature drop with a higher available flow.

For this reasons, the lecture will describe the following application cases of ground water heat pumps in Milano city:

- the geothermal heat stations feeding the A2A Company district heating systems of Milano Canavese and Milano Famagosta, each with a 15,5 MW ground water heat pump
- the complex named "Palazzo Lombardia" in Milano, the new headquarters of Region Lombardia: the largest building in the world fully heated by means only of geothermal sources.

A. MASELLA



Figure 1: A. MASELLA

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