



Concrete moves...



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Concrete contribution to
a changing world

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EUROPEAN READY MIXED CONCRETE ORGANIZATION

HEATING, COOLING AND STORING ENERGY WITH CONCRETE

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Abstract

After seven years of research and accomplishment of several practical examples the Austrian Cement Industry, with the strong support of the Austrian Ministry for Transport, Innovation and Technology, has just published a planning guide for the use of concrete for heating and cooling of buildings (single and multi-family houses). The thermal activation of concrete elements provides an easy and economic possibility to store thermal energy in massive structures over long periods of time which can be retrieved at any time thus increasing the energy efficiency of buildings. The increased use of renewable energy sources combined with the possibility of energy short and long-term storage, the requirements for increasing the energy efficiency of buildings coupled with the high comfort requirements at affordable costs underpin the advantages of the thermal activation of concrete elements. Although it has only been applied in small demonstration buildings so far, it suggests important steps in the right direction in the future in order to re-organize the energy supply for the whole neighborhoods in an environmentally-friendly way. The presentation will focus on a single very promising concept: The recover of excess (electric) energy from wind farms transformed via heat pumps to warm (e.g. from electric energy to thermal energy), or the use of geothermal energy for environmental friendly passive cooling.

Link: Planning Guide Energy Storage (2017)

http://zement.at/downloads/downloads_2017/Planning_guide_Energy_storage_concrete.pdf