



OBSOLESCENCE and RENOVATION

20th Century Housing in the New Millennium

Conference: 14-15 December 2015

Abstract / Initial Proposal Form

1. Paper / Proposal Title:

Custom-made upgrade - alternative strategies to improve the thermal efficiency of concrete housing blocks of the 1970s in Central Europe

2. Format:

conference presentation & written paper

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6. Abstract (300 words):

The urgent need for quickly available, affordable housing after the 2nd World War led to the implementation of industrialised building methods in Central Europe. In contrast to the massive, man-laid brick walls of their predecessors, these new neighbourhoods were usually built with very thin concrete outer walls. The 1970s oil crisis led to an increase of energy costs but also raised the environmental awareness of the population in Central Europe, both resulting in the implementation of the first Thermal Insulation Regulations (Wärmeschutzverordnungen) by the late 1970s.

These first regulations already focused on the limitation of transmission heat loss in order to reduce the annual thermal heat use of buildings. Although almost 40 years have passed, this principle can still be found in current regulations, whereas the maximum values for transmission were subsequently reduced - nowadays the maximum transmission heat loss for outer walls is only approximately only 25% of the permissible value in 1977.

Thermal retrofitting of façades with outer isolation (mainly expanded polystyrene) is considered the most convenient way to upgrade the thermal efficiency of facades in housing. However, this procedure is not an option if the genuine appearance of the concrete façade should be maintained. Insulating from the inside implies in turn more disturbances for the residents, a reduction of the floor space and can eventually lead to bad indoor air quality and condensation problems.

The conference presentation will show two examples of custom-made, alternative strategies to improve the thermal efficiency of concrete housing blocks of the 1970s in Central Europe; one of them follows a low-tech, minimal-intervention approach while the other one takes a more high-end technological approach. The written paper will go deeper into the description of the case studies, providing a more detailed insight into the measures taken and the before-after conditions.

7. Author(s) Biography (200 words maximum for all authors):

Marisol Vidal studied architecture at the Escuela Técnica Superior de Arquitectura in Valencia (Spain). She moved to Graz (Austria) in 1998, where she has worked in several offices (e.g. xarchitekten, Riegler Riewe Architekten). Since 2003 she is teaching and researching at the Institute of Architecture Technology of the Technical University in Graz.

The common denominator of her work lays on the interrelationship between design and construction in architecture. Her research focuses on design strategies for exposed

concrete. Her PhD Thesis (2008) explores the parallelisms between concretism (as in the work and writings of Max Bill) and concrete design in contemporary architecture. She has also published articles and papers on the cultural meaning(s) of concrete, as well as on the strong ideological connotations this material has taken since the early 20th Century.