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ARCHITECTURAL EXPRESSION AND LOW ENERGY DESIGN

MANFREDI NICOLETTI, UNIVERSITY OF ROME "LA SAPIENZA"

Studio Nicoletti, Via di San Simone n. 75
00186 ROME, ITALY

ABSTRACT

The passive approach to the themes of energy savings is essentially based on the morphologic articulations of the constructions. The experience of Studio Nicoletti in low energy building is exemplified by five groups of designs based on different typologies. Cool air stored in the heart of buildings. Tall buildings: energy savings based on minimization of the structural materials and bioclimatic systems. Double skin for cooling the external envelope of the buildings. Urban climate: climatization of large urban fragments, protected either by a glass envelope or a bioclimatic pergola. Integration of various methods including extensive use of natural lighting, like in the design for the New Acropolis Museum in Athens.

KEYWORDS

Architecture; Form; Expression; Passive Tools.

FORM AS A TOOL FOR ENERGY CONTROL

There is no doubt that the passive energy approach is certainly the one that, being supported by the material shape of the buildings has a direct influence on architectural language and most greatly influences architectural expressiveness. Terms like "passive cooling" or "passive solar use" mean that the cooling of a building or the exploitation of the energy of the sun are achieved not by machines but by the building's particular morphological organization.

Form is our main tool. To give form to the material things that we produce is an ineluctable necessity. In architecture form in fact summarizes and gives concreteness to its every value: to economy, to aesthetics, to functionality, and therefore also to energy efficiency.

Our target is to enrich our expressive message with forms producing an advantage energywise.

Many concrete examples and a whole literature have recently grown up around these subjects and the wisdom of forms and expedients that belong to millennia-old traditions has been "rediscovered". Such a revisiting however is only, or most especially, conceptual, since it must be filtered through today's technology and needs, both being almost irreconcilable with those of the past.

Among the "historical" concepts two are of especial importance.

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