

Bioclimatic Design, Evaluation of Energy Behavior and Energy-Saving Interventions at the Theagenio Cancer Hospital

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Abstract : Theagenio in Thessaloniki exists and works for three centuries now as a hospital. Since 1975, it has been operating as an Integrated Special Cancer Hospital and since 1985 it has been integrated into the National Health System. Theagenio Cancer Hospital is located at the central web of Thessaloniki residential complex and consists of two buildings, the Symeonidio Research Center, which was completed in 1962 and the Nursing Ward, a project that was later completed in 1975. This paper examines the design of the Hospital Unit according to the requirements of the energy design of buildings. Initially, the energy characteristics of the Hospital are recorded, followed by a detailed presentation of the electromechanical installations. After the existing situation has been captured and with the help of the software TEE-KENAK, different scenarios for the energy upgrading of the buildings have been studied. Proposals for upgrading concern both the shell, e.g. installation of external thermal insulation, replacement of frames, addition of shading systems, etc. as well as electromechanical installations, e.g. use of ceiling fans, improvements in heating and cooling systems, interventions in lighting, etc. The simulation calculates the future energy status of the buildings and presents the economic benefits of the proposed interventions with reference to the environmental profits that arise.

Keywords : energy consumption in hospitals, energy saving interventions, energy upgrading, hospital facilities

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