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**SUSTAINABLE LIGHTING DESIGN
BY HYBRID SOLUTIONS IN INDUSTRIAL PLACES**

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In non-residential buildings, artificial light is one of the major responsible for the energetic consumption. An optimization of the use of the available natural light becomes a decisive factor in terms of energy savings and visual comfort.

This research is focused on the evaluation of several combinations of daylighting and artificial lighting systems among which: new glazings, enabled to make the most of the natural light potential, internal/external shading devices, in order to avoid glare phenomena, natural light "capture" systems, artificial lighting systems employed to integrate daylight (Permanent Supplementary Artificial Light for Interiors, PSALI) and different systems of control for artificial light (concerning luminous flux, colour, mixing among several and different types of sources MTLs, Multi type lamps systems). The application of LEDs illumination system for different zones of the building has been studied.

The work deals with an existing industrial building (up till now in renovation phase). Computer simulations have been developed for different periods, hours and sky conditions. Thanks to this first phase of analysis, problems have been identified and the best solutions have been found. The work proposes a design methodology for the use of innovative light systems. This methodology has been carried out on the basis of a qualitative criterion for the development of a pre-design phase and on the basis of a quantitative criterion for the design phase. The environment will be monitored to verify the improvements introduced with the new methodology and systems.

The results are applicable to new buildings as well as to the major restored industrial buildings.

Keywords: energy savings, artificial light, daylight, hybrid solutions, industrial buildings.