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Quality of lighting and ergonomics in hospital

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Introduction:

This thesis aims to evaluate the quality of lighting and well-being perceived in a hospital through an objective and subjective research methodology. The field analysis was carried out in Cardinal Housewife Hospital of Asti, a recently built (2003) which occupies a total area of 125000 m² over 7 levels (including 3 underground) and upon which a basin of users of 106 municipalities for a total of over 200,000 inhabitants. The diagram comes from the combination of two symmetrical buildings like a "comb" that open in a large blank space topped by a transparent cover: the square, a symbol of urbanity and sociability.

Aims:

The aim of this research was to assess the degree of visual performance and visual comfort perceived inside hospitals, addressed to two classes of customers: patients and medical and nursing staff. The survey was designed to:

- assess the lighting conditions in order to understand the global perception of space (especially in relation to the patients, who are often forced to spend several days in the same department) and to the activity in medical-health safely)
- compare the results obtained from the field measurements of the objective parameters with the answers to the questionnaires
- identify situations of danger or not accomplishment of the the regulatory requirements, including an indication of some lines of action.

Method:

The analysis was articulated through an investigation with subjective questionnaires handed out to patients, carers, and medical / nursing (including OSS), and a campaign of experimental measurements in some samples of some local departments, which are characterized by different conditions at lighting:

- Department of Gastroenterology (floor-1): diagnostic clinics, and only artificial light.
- Surgeries spatial (floor-1): outpatient diagnosis and analysis, and only artificial light.

- Department of Infectious Diseases (floor 0): diagnostics and analysis, only natural light in patient rooms.
- Department of Urology (floor 3): diagnostics and analysis, only natural light in patient rooms.

In each department, the experimental evaluations were conducted in both areas hospitalization (hospital rooms, distribution spaces and common areas) and areas in which the medical staff. The experimental measurement campaigns were carried out in July 2010.

Results:

The comparison of subjective and objective data allows a number of viewpoints:

- with some exceptions, the amount of light measured are not complying with the regulatory minimum;
- the views expressed by medical staff are on average lower than those expressed by patients and carers, as rooms where doctors and nurses are engaged have not natural light, and this may be cause of errors during work practices;
- from the objective analysis these factors emerge as critical: illuminance values (Em) day and night and the factor daylight (FLDm) are not guaranteed;
- from the subjective analysis these points emerge as critical: according to the medical and nursing staff the amount of natural light is inadequate and lighting in general produces fatigue.
- night lights turns out to be one of the most critical, as is shows both in the measures and in the questionnaires.

Based on a survey of this type you can schedule a series of actions aimed at improving the quality of visual.

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