



KEY POINT SUMMARY

OBJECTIVES

The objective of the study was to examine the impact of different colors on interior daylighting and the sustainable design of the hospital facility to save energy, and improve the psychological and physiological well-being of patients using modern techniques to understand the relationship between, light, color, and positive energy.

Colour Sustainability in Hospitals Interior Spaces

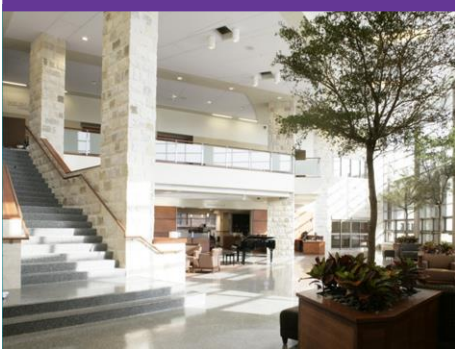
Elqahtani, L. A., Elgizawi, L., 2015 | *"The New ARCH"* V. Volume 2, Issue 1, Pages 30-36

Key Concepts/Context

The impact of the physical environment on health outcomes in hospital facilities has been studied extensively. Interior colors affect the moods and feelings of hospital users to a degree that must not be overlooked by facility designers. Wall, floor, and furniture colors do affect the reflectivity of natural light and can enhance or diminish its distribution. The study was conducted in a patient's room at a children's hospital to investigate the correlation between color and natural light and how they influence sustainable design.

Methods

The study began with a review of available literature on the following: 1- Philosophies of healing and the interior environment 2- Sustainable healthcare design 3- Color psychology. A case study was undertaken at the Children's Hospital in Minneapolis to examine color variations and their effect on daylighting in a patient's room. It was divided into two sections: a wall color study and a furniture color study. A room on the north side of the hospital was selected for the simulation and analysis of different colors. Weather data was selected based on the hospital location and was analyzed using Ecotect Analysis software to determine the average annual daylight factor. This factor was used for comparison against the results of the simulation. The existing colors of the walls, floor, and furniture were first analyzed then manipulated with the impact being measured using the same software. The wall color choices were yellow, green, red, and blue while the colors for the floor were yellow, green, and silver. The existing furniture colors were green, blue, and white which were used alongside yellow in the simulation model. The walls, floor, and furniture colors were analyzed separately to find the best daylight factor for each. Finally, the best color surface reflectivity results were combined to develop a color scheme for the room.



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Findings

After going through the four-phase process of the analysis and given their surface reflectivity, pale yellow was the best color for the walls while silver was the best color for the floor. The furniture colors were green for the sofa, white for the bed, and blue for the chair.

Limitations

No limitations were mentioned by the authors, however, the study was performed in one room at one hospital which makes the findings difficult to generalize. Being limited to surface reflectivity, other factors were not considered such as glare that might result from a silver floor or heat absorption and reflection affected by wall colors.

Design Implications

The authors stressed that color selection must be done carefully by hospital facility designers as it impacts the psychological and physiological well-being of patients. Color schemes for the rooms should be studied and simulated to ensure the best patient health outcomes.

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