

Museums: The Roles of Lighting in Design

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Abstract : The architectural science of lighting has been mainly concerned with technical aspects and has tended to ignore the psychophysical. There is a growing evidence that adopting passive design solutions may contribute to higher satisfaction. This is even more important in countries with higher solar radiation, which should take advantage of favourable daylighting conditions. However, in art museums, the same light that stimulates vision can also cause permanent damage to the exhibits. Not only the visitors want to see the objects, but also to understand their nature and the artist's intentions. This paper examines the hypothesis that the more varied and exciting the lighting (and particularly the daylight) in museums rooms, over space and time, the more likely it is that visitors will stay longer, enjoy their experience and be willing to return. This question is not often considered in museums that privilege artificial lighting neglecting the various qualities of daylight other than its capacity to illuminate spaces. The findings of this paper show that daylight plays an important role in museum design, affecting how visitors perceive the exhibition space, as well as contributing to their overall enjoyment in the museum. Rooms with high luminance means were considered more pleasant ($r=.311$, $p<.05$) and cheerful ($r=.349$, $p<.05$). Lighting conditions also have a direct effect on the phenomenon of museum fatigue with the overall room quality showing an effect on how tired visitors reported to be ($r=.421$, $p<.01$). The control and distribution of daylight in museums can therefore contribute to create pleasant conditions for learning, entertainment and amusement, so that visitors are willing to return.

Keywords : daylight, comfort, museums, luminance, visitor

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