

عنوان مقاله:

Analysis of Natural and Artificial Light in Two Architectural Studios with the Measurement of Light Intensity

محل انتشار:

سومین کنفرانس بین المللی پژوهش ها و دستاوردهای نو در علوم، مهندسی و فناوری های نوین (سال: 1402)

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خلاصه مقاله:

The present study quantified the luminous intensity of two studios oriented towards the north and south, respectively, under sunny weather conditions. The findings indicated that the studio oriented towards the north had inadequate light intensity. The tables situated adjacent to the window within this studio were insufficiently illuminated, necessitating the utilization of artificial lighting. In general, the studio oriented towards the north did not exhibit the intended level of luminosity, even when supplemented with artificial lighting. The tables situated adjacent to the window in the studio facing the south direction were exposed to ample natural light. The tables situated opposite the studio achieved the intended luminosity upon activation of the artificial lighting, resulting in an average light intensity within the studio that closely approximated the established standard level. The findings of this study indicate that the spatial placement of studios can exert a notable influence on the level of light intensity they experience. Studios oriented towards the north are generally characterized by diminished brightness due to their reduced exposure to sunlight. The utilization of artificial lighting may be necessary in order to ensure enough illumination within these studio spaces. There are several approaches that can be employed to enhance the illumination in north-facing studios, including the utilization of skylights, the renovation of windows, or the implementation of glass walls. The light intensity of two studios, one facing north and the other facing south, was tested on a sunny day using a STANDARD ST-۸۶ light meter. Data was collected within the time frame of ۹ to ۱۴ hours. Additionally, the Nikon D۲۰ camera was employed to capture HDR (High Dynamic Range) photographs, which effectively showcased the illumination levels inside the given environment. The investigation was conducted solely on a single day characterized by sunny weather. The intensity of light has the potential to fluctuate during periods of cloudiness or rainfall. Furthermore, it is important to note that this particular study was limited in scope as it solely focused on two specific studios, one facing north and the other facing south. Consequently, caution should be exercised when attempting to apply the findings of this study to a broader range of studios.

کلمات کلیدی:

Light intensity, Natural Daylight, Lighting

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