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PRESENTER ABSTRACTS

ACADEMY OF NEUROSCIENCE FOR ARCHITECTURE

Designing Healthy Daylight into Buildings

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1. ABSTRACT

Architects and designers rely on light as a fundamental tool in the creation of functional and inspiring spaces but light can be provided from both natural and artificial sources which can often have very different characteristics. The impact the design of the building has on our response to daylight is something that architects and researchers are just beginning to address; whether the quality and quantity of light is important to human health, more specifically maintaining the human circadian system.

This paper will present work that investigates the use of daylight by architects in order to provide internal environments that support health and well-being. In particular, it ascertains possible implications of improvements to the thermal performance of glazing on this resource and whether specific types of glazing system allow an appropriate quality and quantity of light transmission to the internal environment.

As well as considering how we evaluate the daylight available we also need to consider the transition of light to internal environments. Glass and glazing system design has developed significantly in response to requirements of improved thermal performance altering the reflectance, absorbance and transmission of light through these glazing systems. As the threshold between external natural light levels and internal lighting environment, glazing systems are the primary determinant of the quality and quantity of daylight that the building occupants receive.

These findings could have a significant impact on the design of buildings, in particular those where their occupants spend substantial time inside, such as hospitals. The apparent connections between health and natural light suggest that the design of these buildings particularly ought to take this into consideration as a major design driver.

2. AUTHOR BIO

Caroline Paradise's current role involves supporting the valuable integration of Design Research & Innovation across the IBI Group network. She is engaged in projects across the education, healthcare and science sectors, driving innovation through evidence based design. A qualified architect, Caroline previously worked for the Design Research Unit Wales (DRUw) at the Welsh School of Architecture where she was intensively involved in a range of Government funded research and construction projects, which cemented her understanding of the vital link between research and design. She is currently working towards the completion of her PhD in Daylight design and its affect on the building occupant at the Welsh School of Architecture, Cardiff.