

Daylightful indoors: taking the occupant's perspective

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ABSTRACT

To provide building designers with the means to meet both qualitative and quantitative objectives, it is necessary to work at scales ranging from the occupant level to the urban environment. This approach oftentimes requires to build synergies between traditionally distinct domains.

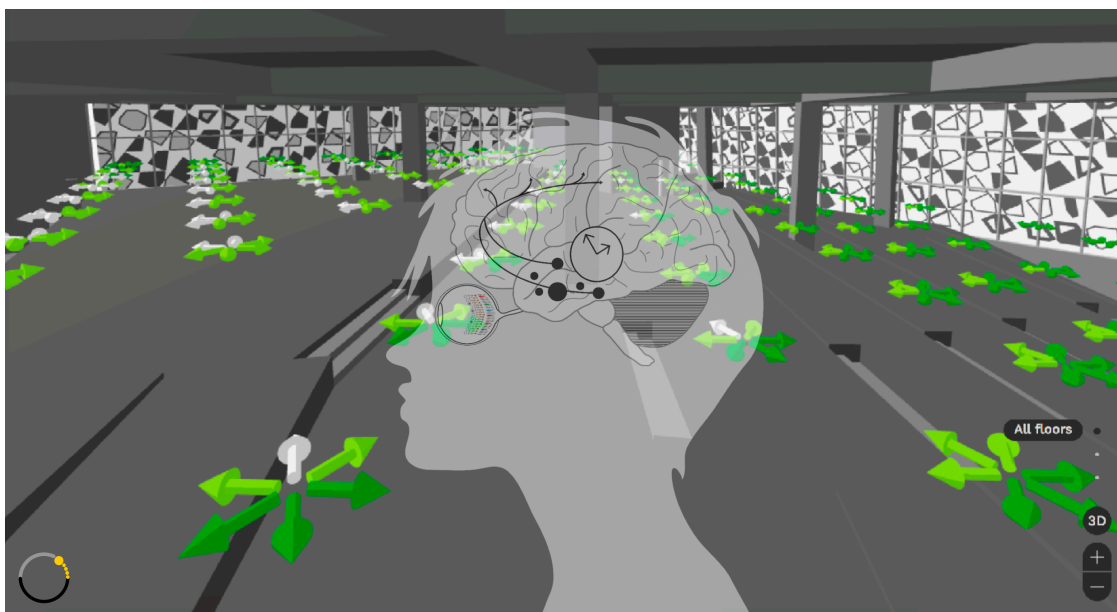
Marilyne Andersen's research field situates itself at the interface between architecture and building technology, and focuses on the integration of building performance in design, with an emphasis on daylighting and passive solar strategies. Natural light greatly impacts how a building is experienced by its occupants. It affects their well-being, notably from their health and biological clock perspectives, but also their perceived visual and thermal comfort, or their emotional response. If we want to support the design of places of delightful – and daylightful – living, we must bring these multifaceted considerations to become integral drivers of the creative process.

This lecture will explore current research efforts aiming towards a deeper integration of performance considerations in the design process, notably as they relate to daylighting and indoor comfort, by creating bridges between architectural design and other fields of science ranging from chronobiology and neuroscience, to psychophysics and computer graphics.

MA BIO

Marilyne Andersen is Full Professor at EPFL where she heads the Laboratory of Integrated Performance in Design (LIPID). Her research activities focus on the integration of building performance in design with an emphasis on daylighting around the themes of health, perception, comfort and energy. She is co-founder of the start-up OCULIGHT dynamics and Academic Director of the smart living lab. She was Dean of the School of Architecture, Civil and Environmental Engineering (ENAC) at EPFL from 2013 to 2018 and is on the Board of the LafargeHolcim Foundation for Sustainable Construction.

She holds a MSc in Physics and a PhD in Building Physics, has been a Visiting Scholar at LBNL and tenure-track Professor at MIT where she founded the MIT Daylighting Lab in 2004. Author of over 100 scientific papers with several distinctions, she was the first laureate of the Daylight Research Award in 2016 and led the winning Swiss team for the US Solar Decathlon 2017 competition.



Caption: Visualizing light-related human needs in both space and time - © LIPID/EPFL & OCULIGHT dynamics