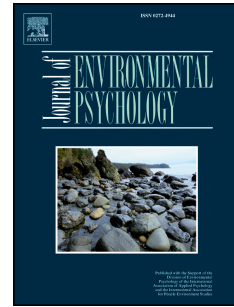


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Arsalan Heydarian, Evangelos Pantazis, Joao P. Carneiro, David Gerber, Burcin Becerik-Gerber



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## Lights, building, action: Impact of default lighting settings on occupant behaviour

Arsalan Heydarian<sup>1</sup>, Evangelos Pantazis<sup>1</sup>, Joao P. Carneiro<sup>1</sup>, David Gerber<sup>2</sup>, Burcin Becerik-Gerber<sup>3</sup>

### Abstract

Occupant behaviour and their interactions with building systems could significantly influence energy consumption in buildings. Studies suggest “default setting” techniques could be used as intervention strategies as people’s preferences are dramatically influenced by minor variations in settings. With the goal to reduce lighting-related energy consumption, we study the effects of default lighting settings on occupants’ rate of lighting adjustments in a single occupancy office space. Through the use of immersive virtual environments, we analysed 160 participants’ data in a virtual office space. Based on the results, people are significantly more likely to keep the lighting settings if the default condition had some or maximum daylighting available. Additionally, the participants reading speed and comprehension were respectively faster and more accurate in conditions where simulated daylight was available. By using default settings, we can influence occupant behaviour towards more energy efficient choices in their daily interactions with building’s lighting and shading systems.

**Keywords:** *Default Setting; Lighting; Immersive Virtual Environments; Occupant Behaviour; Occupant-Building Interactions*

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<sup>1</sup>Ph.D. Candidate, Department of Civil and Environmental Engineering, University of Southern California, Los Angeles, CA, USA, e-mail: {heydaria, epantazi, jcarneir}@usc.edu

<sup>2</sup>Assistant Professor, School of Architecture & Department of Civil and Environmental Engineering, University of Southern California, Los Angeles, CA, USA, e-mail: dgerber@usc.edu

<sup>3</sup>Associate Professor, Department of Civil and Environmental Engineering, University of Southern California, Los Angeles, CA, USA, e-mail: becerik@usc.edu

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