

# International Lecture Series

## Spring 2022

March 23 @ 13:00 room 3.529

### WOUTER van MARKEN LICHTENBELT

Professor of Ecological Energetics and Health  
Maastricht University, Netherlands



**A biological approach to healthy and  
sustainable indoor spaces**

How *temperature* as a novel lifestyle factor affects health  
and sustainable building design

Hosted by Professor Runa T. Hellwig, from the Section of Architecture and Urban Design, Department of Architecture, Design and Media Technology

In organization of HFO International Lecture Series Committee (Andrea Jelić, Michael Martin, Tenna Doktor Olsen Tvedebrink)

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**WOUTER van MARKEN LICHTENBELT**

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Runa T. Hellwig  
send email to  
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## A biological approach to healthy and sustainable indoor spaces

The indoor climate of most buildings is usually tightly controlled. This is due to the application of thermal comfort models from the 1970s that suggest an average human comfort and that regard humans more or less as a physical object. Recent physiological and behavioral research shows that comfort and health do not necessarily go together and that mild variations in ambient temperature can be healthy and may create more human resilience in times of temperature extremes. In addition, there are large individual differences in thermal comfort. During the lecture these differences will be explained from thermo-physiological, behavioral and acclimatization perspective. This knowledge leads to completely different insights for organizing and controlling our indoor climate. The concept of a more varied, dynamic, temperature control may lead to a healthier, more productive indoor climate and moreover, may save energy in the built environment.

**Wouter van Marken Lichtenbelt** is head of the research group Thermophysiology & Metabolism Maastricht University (TherMU). The fundamental aspect of the research is the effect of environmental temperatures on physiology and behavior. This ranges from indoor environment in western populations to extreme conditions in Siberia. The study results show significant beneficial effects of excursions outside the thermoneutral zone on metabolic and cardiovascular health and resilience to extremes. The applied part of the research puts emphasis on how daily indoor environmental conditions relate to thermal comfort, behavior, health and prevention of the metabolic syndrome. His group searches for an optimal mix of different lifestyles and environmental factors to create a healthy sustainable indoor environment.

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