Niko Heeren

CONTACT
Niko Heeren
WWW: www.BuildENVIRONMENT.com

PROFILE
I am an internationally accomplished researcher and a recognized expert in the Swiss public and private construction sector. My work focuses on Sustainable Built Environment Systems, analyzing complex systems and reducing their environmental impacts. My work focuses on dynamic system effects in geo-spatial and prospective analysis, often bridging concepts from architecture, civil, and environmental engineering. I have extensive experience in developing innovative modeling approaches, leveraging my strong IT skills. With 15 years of teaching experience and a track record of successful research grants, my work has reached international audiences and influenced top-level political institutions. My diverse background in academia, private, and public sectors has honed my organizational skills and provided deep understanding of the construction sector's challenges.

EDUCATION
ETH Zürich, Zurich, Switzerland
Chair of Ecological System Design, Institute of Environmental Engineering
Doctor of Sciences, 2017
Thesis: Modelling environmental impacts of buildings – energy, material, and dynamics
Supervisor: Stefanie Hellweg

Technical University Munich, Munich, Germany
Chair of Building Climatology and Building Services, Faculty of Architecture
Master of Science in ClimaDesign, 2011
Thesis: Ecological Potentials of Load Management in Buildings

Ecole Polytechnique Fédéral de Lausanne, Lausanne, Switzerland
Solar Energy and Building Physics Laboratory
Université Chatolique de Louvain, Louvain-la-Neuve, Belgium
Chair of Architecture and Climate
Master of Advanced Studies & Master Européen in Architecture & Développement Durable, 2008
Thesis: Feasibility of the 2000-Watt Society on the Example of the Canton Vaud's Building Stock

Brandenburg University of Technology, Cottbus, Germany
Chair of General Ecology
Bachelor of Science in Environmental and Resource Management, 2006
Two semesters at Budapest University of Technology and Economics (Hungary)
Thesis: Ventilation Systems as a Low-energy Technology in Context of the German Energy-Saving Ordinance

Norwegian University of Science & Technology NTNU, Trondheim, Norway
Adjunct Associate Professor for Industrial Ecology **2020–2023**
- Global assessment of building stocks (material & energy)
- Co-supervision of PhD students

Yale University, New Haven, USA
Postdoctoral Associate and Project Coordinator **2018–2019**
- Center for Industrial Ecology, School of Forestry & Environmental Studies.
- Project coordinator for G7 / UNEP on Resource Efficiency & Climate Change mitigation

ETH Zürich, Zurich, Switzerland
Postdoctoral researcher and Lecturer **2017–2018**
- Chair of Ecological System Design (Prof. Hellweg) and Chair of Sustainable Construction, Institute of Construction & Infrastructure Management (Prof. Habert)
- Writing research proposals

PhD Student **2012–2016**
- Chair of Ecological System Design, Institute of Environmental Engineering (Prof. Hellweg)

Research Assistant **2008–2012**
- Chair of Sustainable Construction (Prof. Wallbaum), Institute of Construction & Infrastructure Management (Civil Engineering).
- Project management
- Research and development on building stock Zurich and Switzerland
- Writing research proposals

ETH Zürich, Zurich, Switzerland
External Lecturer **since 2018**
- Guest lecturer in "Prospective Environmental Assessment" by Prof. Hellweg
Chair of Ecological System Design **2017–2018**
- Lecturer in "Prospective Environmental Assessment" by Prof. Hellweg
- PhD student co-supervision
Chair of Sustainable Construction (Prof. Habert) **2017–2018**
- Guest lecturer in "Sustainable Construction Materials" by Prof. Habert
- Student thesis supervision
Chair of Sustainable Construction (Prof. Wallbaum) **2008–2012**
- Building simulation, student exercises in different lectures by Prof. Wallbaum
- Student thesis supervision
- Research proposal writing

Yale University, New Haven, USA
Center for Industrial Ecology **2018–2019**
- Guest lecturer in "Energy System Analysis" by Prof. Hertwich
- Co-lecturer in "Material Flow Analysis & Socio-economic Metabolism Seminar" by Fishman, Heeren, and Hertwich

E4Tech Software, Lausanne, Switzerland
Private teacher **2010–2019**
- Teaching building energy simulation, building certification, and BIM with the Lesosai software

École Nationale Supérieure d'Architecture de Strasbourg, Strasbourg, France
Guest Lecturer **2009–2010**
  - Building design, energy simulation and urban design (lectures and student workshops) in different courses by Dominique Gauzin-Müller, Eric Albisser.

<table>
<tr><td>PROFESSIONAL
EXPERIENCE</td><td></td></tr>
</table>

City of Zurich, Buildings Department, Zurich, Switzerland
Team lead environmantal construction **since 2023**
  - Leading a team of 11 experts
  - Responsible for sustainable construction reasearch budget
  - Development of the city's environmental standards

Specialist for sustainable construction **2020–2023**
  - Defining and controlling sustainability aspects in public construction projects
  - Supervising research projects and managing research budget
  - Development of city-wide decarbonisation strategy

E4Tech Software, Lausanne, Switzerland
Freelance consultant and teacher **2010–2019**
  - Teaching building simulation software
  - Customer relations in Switzerland

Sustainable System Solutions, Zurich, Switzerland
Co-Founder **2015–2017**
  - ETH Zurich spin-off company
  - Client consulting
  - Software development for Life Cycle Assessment and Life Cycle Costing tools

Estia, Lausanne, Switzerland
Internship and MAS thesis **2006–2007**
  - Sustainable construction consulting company (EPFL spin-off)
  - Consulting clients in building physics and sustainability
  - 2000-Watt strategy pathway for the canton Vaud (MAS thesis)

Passivhausinstitut, Darmstadt, Germany
Internship and B.Sc. thesis **2005**
  - Research in building physics and passive house standard
  - Project work on anti-freeze protection of air heat exchangers (B.Sc. thesis)

LANGUAGE
SKILLS

German: Native language
English: Full professional proficiency
French: Professional working proficiency

RESEARCH
PROJECTS

  - Swiss National Science Foundation Project, National Research Programme NRP 73 "Ecological footprint in the housing sector" (2017–2021)
  - Swiss National Science Foundation Project, National Research Programme NRP 66 "Resource Wood" (2012–2016)
  - EU FP7 Research project BEEM-UP (2012–2014)
  - City of Zurich, Building Stock Model Zurich (2010–2011)
  - Swiss Federal Office for Energy, Building Stock Model Switzerland (2009–2010)
  - Life Cycle Assessment of Railway Infrastructure, mandated by private company (2010)

EDITORIAL
ACTIVITY

  - Member of the Editorial Board at Nature Scientific Data (since 2021)
  - Associate editor at the Journal of Industrial Ecology (since 2019)
  - Special issue editor "Digital Innovation" in Journal of Industrial Ecology (2020–2021)

-   Special issue editor "Material Efficiency for Climate Change Mitigation" in Journal of Industrial Ecology (2019–2020)
-   Reviews for scientific journals (Industrial Ecology, Life Cycle Assessment, Building Research & Information, Building & Energy, Applied Energy, Waste Management, etc.)
-   Reviewing Research proposals for numerous Science Foundations
-   Reviews for ecoinvent (Life Cycle Inventory Database)

COMMITTEES & MEMBERSHIPS

-   Member SIA 112/1 Sustainable Construction committe
-   Member SIA Commission for Sustainability and Environmental Standards (KNU)
-   Scientific Committee SBE25 Zurich conference
-   Committee Fachtagung Nachhaltiges Bauen
-   Advisory group member in different research projects in academia and public sector
-   Reviewing Committee of the ISIE-ISSST 2017 Chicago conference
-   Scientific Committee SBE16 Zurich conference
-   Member of the Society for Industrial Ecology, IE Open Science, Open Energy Modelling Initiative, and Network for Sustainable Urban Development

PUBLICATIONS

Metrics (Nov. 2024)	h-Index	Citations
Scopus	25	2440
Web of Science	26	2140
ResearchGate	27	3100
Google Scholar	31	3990
exaly	24	2300

ONLINE

Website: www.BuildENVIRONMENT.com
OrcID
LinkedIn
GitHub: nheeren
StackExchange