

Announcement for Architecture,
RNB, or Biomedical Engineering
Students*
Master Thesis or Study Project

SUPERVISION

Prof. Dipl.-Ing. Thomas Auer

M. Sc. Bilge Kobas | bilge.kobas@tum.de

M. Sc. Sebastian C. Koth | sebastian.koth@
tum.de

Lehrstuhl für Gebäudetechnologie und
klimagerechtes Bauen

Arcisstraße 21, 80333 München

[arc.ed.tum.de/en/klima/forschung/
forschungslabore/senselab](http://arc.ed.tum.de/en/klima/forschung/forschungslabore/senselab)

* Students from other disciplines are still
encouraged to apply. Please make sure that
we can officially supervise your studies.

LACK OF REPRESENTATION IN COMFORT STANDARDS

CONTEXT

Definition of “comfort” has long been a question for professionals of the built environment. Particularly the numerical definition of it, not only decides how we operate our buildings, therefore manage resources but also how the buildings impact our well-being in return. However, this reciprocal relationship still lacks clarity on certain aspects, as research shows that occupants are consistently dissatisfied with the indoor climate and that most buildings struggle with huge performance gaps between simulations and actual measurements.

As the majority of data acquired in the comfort literature comes from user feedbacks, there are concerns with bias, data resolution, or scalability. Furthermore, it is proven by the research that maybe comfort is not what we should be after, but rather health - and not always these two mean the same thing.

Therefore, research project SenseLab aims to tackle the comfort definition from a newly emerging point of view: Directly looking into the human body. By doing so, we believe that we might not only identify the link between perceived comfort and its physiological markers, but also collect long-term data to observe how the indoor environment impacts our health and well-being.

TASKS

As today's standards rely mostly on research analyzing healthy, young, male adults, our indoor environments only reflect a small and very homogeneous portion of our society's needs. While more recent literature suggests various health conditions, age, sex, etc. to play a major role in the perceived comfort and overall physiological reactions, more data is needed to better understand the individual variation.

The task of this call is to review the literature and identify any lack of representation as well as to produce own physiological data of underrepresented people or groups in correspondence to climate data in our controlled experiments.

