

The following position is open (start as soon as possible) at HAWK University Hildesheim/Holzminden/Göttingen, Faculty of Management, Social Work, Construction (Holzminden site), with a three-year term of employment (an extension is intended):

## RESEARCH ASSOCIATE (M/F/D) IN THE AREA OF FLOW SIMULATION/TECHNICAL BUILDING EQUIPMENT PLANNING (SALARY GROUP 13 TV-L, FULL-TIME)

In the environment of the courses on Green Building and Sustainable and Energy-Efficient Construction at HAWK in Holzminden, applied research is conducted for the planning, construction and renovation of building structures. These activities focus on the combination of sustainable construction and the digitalisation of the building industry against the background of the requirements arising from the energy transition.

This position is made possible thanks to direct funding by the commercial company Stiebel Eltron. Within the framework of the position, planning fundamentals for decentralised ventilation units will be examined in the context of digital methods for flow simulation and construction processes, with the aim of developing better design possibilities for construction planning. There is a possibility of a doctorate in cooperation with a partner university and this is expressly desired.

Designing of ventilation units for large spaces is currently often done according to “rules of thumb” and based on experience and relevant standards, specifically due to the very varied situations that arise in large spaces in terms of occupancy and stress, particularly in educational buildings like kindergartens and schools, up to and including large events spaces. Simplistic design gives rise to serious uncertainties and as a consequence unintentional oversizing or failure to comply with planning objectives. The work involved in this position will be aimed at examining the design of decentralised indoor air technology systems, theoretically and practically, for different application scenarios. The aim is to develop technical rules for the design of decentralised ventilation systems for large spaces and their substantiation in dynamic stress situations. To that end the air distribution will be examined in simulation and with measurements, taking into account quantifiable values (CO<sub>2</sub>, VOC, aerosols, energy saving), subjective criteria, influences arising from the building and its circumstances.

### Your duties

- Scientific/technical research in the subject area
- Selecting and setting up appropriate representative planning scenarios and mapping decentralised ventilation systems in large spaces with different simulation environments
- Planning and overseeing metrological tests and numerical simulations for the purpose of validating the simulation environments, where necessary in an external testing laboratory
- Comparison of different numerical flow simulation tools suitable for construction planning
- Development of optimised planning process sequences for application in construction planning (conventional planning and Building Information Modelling/BIM)
- Publishing and presenting the results
- A limited amount of support teaching at HAWK in the area of ventilation technology/simulation

### Your profile

- Completed university studies (“Diplom”/master’s degree) in the area of mechanical engineering, physics or supply engineering or a comparable subject relating to ventilation technology/flow simulation
- An interest in the subjects of ventilation, flow simulation and calculation/BIM and in construction planning processes
- You should enjoy combining science and practice/developing general technical models for practical application in construction planning
- You should be responsible, be able to use your own initiative and work diligently, independently and with foresight

HAWK sees itself as a provider of opportunities. The person who takes up the position will therefore also be required to respect the principles of equality and diversity in their relations with staff and students.

The position enables part-time employment within the framework of the legal regulations.

Professor Erik Bertram (erik.bertram@hawk.de) will be happy to answer your technical questions.

Please submit your application with the usual documents, by 31.5.2022, to HAWK Hochschule für angewandte Wissenschaft und Kunst Hildesheim/Holzminden/Göttingen, Personalabteilung, Hohnsen 4, 31134 Hildesheim or to jobboerse@hawk.de.

As a university which promotes diversity we welcome applications from people from a wide range of backgrounds. Persons from underrepresented groups are particularly encouraged to apply. Our university promotes a healthy balance of family and working life, among other things through very flexible working hours models. Our equality office and the staff council will be happy to provide you with information on these issues.

People with disabilities will be preferentially considered in case of equal qualifications. Please indicate your disability in your application.

We will only send back the submitted documents if you send us a sufficiently stamped, addressed return envelope along with your application. Otherwise they will be destroyed after the completion of the application process in accordance with data protection requirements. Electronic applications will be erased accordingly.

