

Teaching Portfolio

Professor Dr.-Ing. Runa T. Hellwig

(Professor, Privatdozent PD, Dr.-Ing., Dipl.-Ing.)

Department of Architecture, Design and media Technology

Section of Architecture and Urban Design

Integrated Architecture group

Human Building Interaction

Content

- Spectrum of teaching
- Study programme administration and management
- Pedagogical development,
- Pedagogical training and qualifications
- Other qualifications

Teaching documentation

- PhD courses, PhD supervision, PhD exams or evaluations
- Degree projects since 1996
- Courses at different Universities since 2000
- Examples of Master thesis architectural designs and studio projects
- Professional training courses since 2001

Appendix: Certificates of teaching training and qualification



Left: My students of the Master's programme Green and Energy Efficient Buildings at University of Kuala Lumpur practicing outdoor measurements investigating the effect of long wave radiation (2014); Right: My students visit with me the facility manager and the ventilation system and building management system control office at Augsburg University of Applied Sciences 2010. Photos: Hellwig;

Overview on my teaching

Spectrum of teaching	I have been teaching on undergraduate (Bachelor's) and graduate (Master's and Phd) level. I have been teaching students with diverse cultural background on international level (Denmark, Germany, Singapore, Malaysia) with several discipline background (Architecture, Civil engineering, Architectural engineering, Green building experts).
Student's background	Furthermore, I have been teaching professional training courses (Germany, Singapore). The languages I have been using in my teaching are English and German, and in addition Danish in single supervision.
Languages	
Teaching method	I have been teaching lectures, classes, exercises, and supervising studio projects in integrated architectural design, building physics, energy demand analysis, energy concept, indoor climate and related building service systems, integration of building technologies. In the lectures and classes, the group size is up to 100 students and up to 15 in exercises and supervision of studio projects. I also supervise students on their studio, final year projects and on thesis writing in face-to-face contact and also online . I have been on several architectural excursions with my students. I have been including measurement exercises into my teaching. Currently, I am supervising a research internship on Master's level.
Thematic topics	

Study programme administration and management, development of new programmes, courses, accreditation

Since 2022	Member of Study Board of Architecture and Design education at Aalborg University, Denmark
2013-2014	Academic senate: elected Member and elected Chair of the Academic Senate of the University, Augsburg University of Applied Sciences, Germany, Academic Senate approves new study programmes, changes of curricula and appointment of new professors
2012-2014	Member of University Steering Committee Internationalisation , Augsburg University of Applied Sciences, Germany, involved in quality assurance and accreditation of internationalisation activities
2010-2014	International coordinator of the study program Energy Efficiency Design (E2D, Master's, Bachelor's), Augsburg University of Applied Sciences, Germany, approving Erasmus student's learning agreement, consulting students in going abroad
2010-2014	Member of the Faculty Board Architecture and Building, Augsburg University of Applied Sciences, Germany, Faculty Board approves changes in the curriculum
2009-2014, 2016-2018	Member of exam committee , study program Energy Efficiency Design (E2D, Master's, Bachelor's), Augsburg University of Applied Sciences, Germany
Since 2009	Course coordinator for numerous courses, see "Teaching documentation", the task is to plan the teaching, organise lecturers for the course and schedule the course

- 2011-2013 The study programme Energy Efficiency Design (E2D, Master's, Bachelor's), Augsburg University of Applied Sciences, Germany received accreditation in 2013. I made important **contributions to the accreditation documents** for both programs in the area of Building Physics, Energy Efficiency, Indoor Climate teaching.
- 2014 In 2014, was serving as **member of the accreditation committee of ACQUIN** for accrediting the following study programmes at Hochschule Coburg: „Architektur“ (B.A.), „Innenarchitektur (B.A.), „Integriertes Produktdesign“ (B.A.), „Bauingenieurwesen – Allgemeines Bauingenieurwesen“ (B.Eng.), „Bauingenieurwesen – Energieeffizientes Gebäudedesign“ (B.Eng.), „Design“ (M.A.).
- 2009-2014 At Augsburg University of Applied Sciences, the bachelor's program “Energy Efficient Planning and Design” started in 2007 and the Master's program “Energy Efficiency Design” in 2008. I was the third professor in the team, which later grew to 8. That is why I was heavily involved in the **development of the curriculum** for energy efficiency, building climatology and building technology and its integration into design studio projects from the 1st to 7th semester in the Bachelor programme and from the 1st to 3rd semester in the Master's programme. Responsibility and tasks were gradually handed over to new colleagues joining the programme.
- 2019 **Curriculum revision:** At Aalborg University, we have revised the Bachelor's and the Master's programme in Architecture to which I contributed also.
- 2022, ongoing In the Integrated Architecture group at Aalborg University we have recently set up **work groups** establishing **read threads through the curriculum** and **determine necessary adjustments** of the curriculum. I am leading the group on “architectural engineering/ energy efficient architecture/ indoor environment” and I am contributing to “mathematics” and “materials”.

Other qualifications

Articles on teaching

Teli, D., Hellwig, R. T., Schweiker, M., Choi, J-H., Lee, J. M. C., Mora, R., Rawal, R., Wang, Z., & Al-Atrash, F. (2020). Teaching the concept of adaptive thermal comfort in building design education. In: Proceedings 16th Indoor Air 2020 [ABS-0556] <https://vbn.aau.dk/da/publications/teaching-the-concept-of-adaptive-thermal-comfort-in-building-desi>

Hellwig, R. T. (Ed.) (2020). Natural Materials - Materiality and construction of sustainable buildings - A one-to-one experience. CREATE, Arkitektur, Aalborg University. <https://vbn.aau.dk/en/publications/natural-materials-materiality-and-construction-of-sustainable-bui>

Peer supervision

Academic supervisor for pedagogical training for assistant professor Luis Filipe dos Santos, PhD at Aalborg University 2021-2022

Mentoring

Fraunhofer Gesellschaft Mentoring programme: professional mentor for Dr. Victor Norrefeldt 2011-2012

Pedagogical training and qualifications

2015 **Habilitation in Building Climatology (Bauklimatik),**

Univ.-Prof. Andreas Wagner, Faculty of Architecture, Karlsruhe Institute of Technology

2013 **Certificate “Hochschullehre Bayern“ (University Teaching Bavaria)**

Completed 06.05.2013, please refer to the certificate,
overall 159 units á 45 min

Units in the area of Teaching and Learning Concepts: 28,5 units

Presentation and Communication: 82 units

Evaluation: 16 units

Examens: 16 units

Consulting students: 16,5 units

- 30.04.2010 Rechtsgrundlagen für die Lehre an Hochschulen (Legal foundations for teaching at universities), 8 units
- 04.-07.10.2010 Basisseminar Hochschuldidaktik (Basic course on didactics), 36,5 units
- 29.08.-23.09.2011 Language development course at Bell international College Cambridge, 25 units approved for the Certificate “Hochschullehre Bayern”
- 21.-22.11.2011 Schreiben lehren an der Hochschule (Teaching of scientific writing at university), 16,5 units
- 06.12.2011 Präsenz zeigen – Ihr starker Auftritt (Showing presence), 8 units
- 17.-18.01.2012 Evaluation der eigenen Lehre (Evaluation of your own courses), 12 units
- 25.-26.01.2012 Wirken durch Stimme – Das Wirkpotenzial der Stimme entfalten (Voice training course), 16,5 units
- 04.-05.05.2012 Intercultural academic teaching in English: How do I become a good intercultural teacher?, 12 units
- 15.-16.5.2012 Umgang mit Lernwiderständen und Konflikten (Conflicts and didactic prevention), 16,5 units
- 06.05.2013 Anwendungsorientiert prüfen – Kompetenz steigern (Developing competence and application oriented examens), 8 units

All certificates in Appendix

Teaching documentation

PhD courses, PhD/Master by research supervision, PhD exams or assessment

PhD course
planned autumn
2022, presence

Occupant-centric design and operation of ICT/smart solutions for buildings – multidisciplinary perspectives and perceptions

The course brings together students from different study fields and offers them opportunity to broaden their insight in interaction between humans and the built environment. The lectures are based on latest research and have multi-disciplinary background and address this interdisciplinarity in the lectures on: ICT/big data/automation solutions in buildings: functions, objectives; occupant behaviour in real buildings – outcome from field studies; Experience with ICT solutions from field studies; framework/models for human building interaction; personal control perception in buildings and future approaches for occupant-centric design.

The course has a workload of 3 ECTS.

PhD course
Autumn 2020,
online

Human Perception, Well-being and Behaviour in Indoor Built Environments

In recent years research has gained more and more insight in how architecture, i.e. the indoor built environment, the interplay of usage, occupancy, indoor space design and technologies influences how humans feel, perform and behave in these environments. Aiming at more sustainable ways of living our knowledge on how indoor built environment practice drives human behaviour is paramount.

The course has a workload of 3 ECTS.

PhD course
Autumn 2019,
Aalborg
University

Towards a sustainable building culture – Prospective Strategies and Methodologies in Designing our Built Environment

The overall goal of the PhD course is to unfold various prospective strategies, methodologies and perspectives in designing buildings as well as in research and oppose them to currently prevailing methodologies and approaches applied by designers, building industry and researchers. Among others, these prospective strategies are integrated design process thinking as we have been utilising it successfully at Aalborg University's Architecture and Urban Design section, participatory action in sustainable architecture or human centred approaches to indoor climate. Examples from research and design practice underpin the discussion of the different perspectives.

The course has a workload of 3 ECTS.

Helene Teufl

PhD-exam 2021, "User-centric radiant cooling" Technische Universität Wien, Austria, **Assessment Committee member**: Prof. Dr.-Ing. R.T. Hellwig

Donya Sheikh
Khan

PhD-exam 2021, "Increased occupant satisfaction and comfort using IoT-based data acquisition for high-performing building operation and design" Danish Technical University, Denmark, **Assessment Committee member**: Prof. Dr.-Ing. R.T. Hellwig

- Niels Lassen **PhD-exam 2021** “Subjective data-streams for indoor climate assessment in buildings – Theoretical and experimental analysis of concepts and systems for continuous subjective feedback (CSOF) from building occupants” Norwegian University of Science and Technology, Norway **Assessment Committee member:** Prof. Dr.-Ing. R.T. Hellwig
- Mikkel Poulsen Rydborg **PhD submission**, 2020 “Adapting sustainable residential architecture – climate change adaptation of low energy, low rise housing in oceanic climate”, Aalborg University, Denmark **Assessment Committee Chair:** Prof. Dr.-Ing. R.T. Hellwig
- Al-Atrash, Farah **Doctoral Degree** project 2015-2018 at Karlsruhe Institute for Technology, Supervisor: Prof. A. Wagner, **co-supervisor:** Prof. Dr.-Ing. R.T. Hellwig
- Kabanshi, Alan **Member of the Examination Board PhD Thesis:** Experimental study of an intermittent ventilation system in high occupancy spaces. 18.5. 2017, University of Gävle, Sweden, Department of Building, Energy and Environmental Engineering
- Zhang, Fang **Examiner of PhD Thesis**, June 2016: Thermal Comfort and Task Performance Under Peak Demand Air-conditioning Management Strategies, The University of Sydney, Faculty Architecture, Design and Planning, Supervisor: Prof. Richard de Dear
- Poon, Ivan **Supervising the development of his PhD proposal** and successfully supported his acceptance at National University of Singapore, School of Design and Environment, *because of my returning to Germany in 2016 the school did not allow for continuing supervising the student*
- Luerßen, Christoph **Supervising the development of his PhD proposal** and establishing the student at SERIS, successfully **acquired the renowned NUS president’s scholarship** and his acceptance as PhD student at National University of Singapore, School of Design and Environment, *because of my returning to Germany in 2016 the school did not allow for continuing supervising the student*
- Hackl, Martina Comparative Evaluation of Indoor Climate and User Satisfaction in Mechanically Ventilated Classrooms – Investigation of 34 Classrooms in the Administrative District of Swabia, Bavaria, Germany./ Vergleichende Evaluierung von Raumklima und Nutzerzufriedenheit in maschinell belüfteten Klassenzimmern – Untersuchungen in 34 Klassenzimmern im Regierungsbezirk Schwaben, Deutschland, Masterarbeit, **Master of Applied Research** Programme, Augsburg University of Applied Sciences, Faculty of Electrical Engineering 2015. **Principal Supervisor:** Prof. Dr.-Ing. R.T. Hellwig

Degree projects since 1996

Master's degree, few Bachelor's degree (Principal Supervisor: Runa T. Hellwig)

- Krieva, S. ongoing **Temperature zoning in high-performance residential building design in Denmark.** Simulation and Architectural Design project. Aalborg University, Department of Architecture, Design and Media Technology, **2022**, Supervisors: Prof. Dr.-Ing. R.T. Hellwig, Assistant professor Dr. C. Berger
- Lindermayr, V. **Context effects in interpreting questionnaire scales describing the perception of thermal comfort / Kontexteffekte bei der Interpretation von Fragebogen-Skalen zur Beschreibung thermischer Behaglichkeit.** In German. Ongoing Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2018**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig
- Augart, F. **Measurement of temperature distribution of an outer wall system with a textured surface and validation of a simulation methodology for the calculation/ Messtechnische Untersuchung und Validierung einer Simulationsmethodik zur Berechnung von Temperaturverhältnissen einer Außenwand mit strukturierter Oberfläche.** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2018**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig
- Fischer, J. **Simulation-based analysis of energy flexible factories in a regional energy supply system. / Simulationsbasierte Analyse energieflexibler Fabriken in einem regionalen Versorgungssystem** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2018**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig, S. Roth, Fraunhofer IGCV
- Mertens, C. **Impact of E-mobility on future noise levels in cities – Developing scenarios and evaluating the noise load on buildings. / Der Einfluss der E-Mobilität auf die zukünftige Lärmsituation in Städten – Entwicklung von möglichen Szenarien und Bewertung der Belastungsveränderung an Gebäuden** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2018**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig, B.Funk BZS Bauphysik
- Großmann, A. **Comparison on plus-energy concepts for a multi-functional building complex/ Vergleich von Plusenergiekonzepten für ein Multi-Funktionsgebäude.** In cooperation with the company: 4Waende GmbH, In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2018**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig
- Schmuttermair, S. **Energy Audit of two residential care homes for elderly in Munich./ Durchführung eines Energieaudits in der Kuratorium Wohnen im Alter gAG: Energieauditprozess Stufe Vier bis Sieben. Energetische Untersuchung der KWA Liegenschaft Georg-Brauchle-Haus (Staudingerstraße 56 und 58) in München.** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2018**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig
- Luerßen, Ch. **Development of a Data Acquisition Concept for the Energy System of an Off-grid Eco-resort in Indonesia: Air-conditioning with Latent Heat Storage, Photovoltaic System with Battery Storage and Diesel Generator,** Bachelor thesis, **2016**, Ulm University of Applied Sciences, carried out at Solar Energy Research Institute of Singapore (SERIS) in Co-operation with Loola Adventure Resort Singapore/ Indonesia. Supervisor at SERIS: Assoc Prof. Dr. Runa T. Hellwig, Supervisors at Ulm University of Appl. Sciences: Prof. Dr. Commerell, Prof. Dr. Mengedocht
- Brandl, H. **Climate for Culture: Anwendung der Hygrothermischen Gebäudesimulation in der Präventiven Konservierung, am Beispiel der Kirche St. Margaretha. / Climate for Culture: Application of Hygr-thermal Building Simulation in the Area of Preventive Conservation – The Case of the Church St. Margaretha.** Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences, Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2014**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig, co-supervisor Dr.-Ing. R. Kilian, Fraunhofer-Institut für Bauphysik/Fraunhofer Institute for Building Physics.
- Tschakrow, E. **Vergleich von Regelkonzepten von Sonnenschutzsystemen hinsichtlich visueller und thermischer Behaglichkeit in Klassenräumen im Sommer. Comparison of control concepts for sun shading systems with regard to visual and thermal comfort in classrooms in summer.** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2014**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig

- Al-Atrash, F. **Towards Minimising the Energy Use in Buildings: Climate Conscious Building Design Related to Jordan's Climate.** In English. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2013**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig
- Maurer, J. **Messtechnische Untersuchung des Raumklimas energetisch modernisierter Schulen - Raumklima in den Sommermonaten an energetisch modernisierten Schulen mit maschineller Lüftung. Measurement of the indoor climate in energetically retrofitted schools - Indoor climate in classrooms with mechanical ventilation in summer.** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2013**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig
- Tang, Q. **Gebäudestandards und Nutzungsprofile für thermische Gebäudesimulation – Entwicklung einer Datenbank. Buildings standards and profiles of usage for thermal building simulation - Development of a data bank.** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2013**; Supervisor: Prof. Dr.-Ing. R.T. Hellwig, co-supervisor Dr.-Ing. S. Park, Fraunhofer-Institut für Bauphysik/ Fraunhofer Institute for Building Physics.
- Hauck-Bauer, E. **Nullenergie- und Nullemissions-stadt/ Zero Energy and Zero Emission City.** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2013** Principal Supervisor: Prof. Dr.-Ing. R.T. Hellwig, co-supervisor Prof M. Wambsgaß
- Rühle, R. **Entwicklung eines standardisierten Nachbereitungsverfahrens für Nachhaltigkeitszertifikate des Nutzungsprofils Neu-bau Büro- und Verwaltungsgebäude der Deutschen Gesellschaft für Nachhaltiges Bauen (DGNB)/ Development of a Standardised Procedure for Analysing Sustainability Certificates 'Office Buildings – New Building' of the German Sustainable Building Council.** In German, Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2013** Principal Supervisor: Prof. Dr.-Ing. R.T. Hellwig
- Vökl, T. **Design and Planning of an Energy Efficient Design (E2D) House for Teaching Purposes. (Planung und Konstruktion eines E2D Hauses für die Lehre).** Master Thesis. Master in Energy Efficient Design, Augsburg University of Applied Sciences. **2012** Prof. Dr.-Ing. R.T. Hellwig
- Heinrich, S. **Potentiale energetischer Ertüchtigungen von Bestandsfenstern am Beispiel der alten Schäferei im Kloster Benedikt-beuern./ Potentials of Energetical Improvements in Retrofitting of Historical Windows Using the Example of the 'Alte Schäferei' in the Monastery Benediktbeuern.** Master Thesis. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2012** Principal Supervisor: Prof. Dr.-Ing. R.T. Hellwig, co-supervisors: H. Sinnesbichler, Dr. phil. B. von Rettberg, Dr.-Ing. I. Heusler, C. Milch, Fraunhofer-institute für Bauphysik, Fraunhofer Institute for Building Physics.
- Wesslerle, A. **Bewertung des sommerlichen Wärmeschutzes von Bürogebäuden/ Assessing the Summer Heat Protection of Office Buildings.** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2013** Principal Supervisor: Prof. Dr.-Ing. R.T. Hellwig, co-supervisors: C. Ungerland, L. Weigert Ebert-Ingenieure, München.
- Buddenbäumer, A. **Studie zur Energieeffizienz eines neu zu entwickelnden modularen Kulturgüterdepots gemäß Monatsbilanzverfahren nach DIN V 18599./ Study on the Energy Efficiency of a New Modular Storage for Cultural Assets Using the Monthly Energy Calculation Method According to the German Standard DIN V 18599. In German.** Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2011** Principal Supervisor: Prof. Dr.-Ing. R.T. Hellwig, co-supervisor: I. Heusler, Fraunhofer-institute für Bauphysik, Fraunhofer Institute for Building Physics.
- Vilgis, M. **Energetically Retrofitting of a School Building Using the Method According to the German Standard DIN V18599. (Energetische Sanierung eines Schulgebäudes nach DIN V 18599).** Master Thesis. Master in Energy Efficient Design, Augsburg University of Applied Sciences. **2010**. Prof. Dr.-Ing. R.T. Hellwig
- Kratzmeier, M. **Luftaustausch bei einseitiger Fensterlüftung - Numerische Untersuchung der Temperatur- und CO2 Schichtung in Klassenzimmern./ Air Exchange in the Case of Single-Sided Natural Ventilation – Numerical Analysis of the Temperature and Carbon Dioxide Stratification in a Class-room.** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2010** Supervisors: Dr.-Ing. A. Schwab, Dr.-Ing. R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen)

- Ströbele, B. **Vergleichsstudie zur Berechnung des Jahresbeleuchtungs-energie-be-darfs nach DIN V 18599 Teil 4 auf Basis unterschiedlicher Va-ri-anten zur Bestimmung des Tageslicht-versorgungsfaktors./ Comparison of the Annual Energy Demand for Electrical Lighting Calcu-lated on the Basis of Different Methods for the Determination of the Daylight Autonomy Factor According to the German Standard DIN V 18599.** In German. Masterarbeit/Masterthesis, Hochschule Augsburg/ Augsburg University of Applied Sciences Fakultät Architektur und Bauwesen/ Faculty of Architecture and Building, **2010** Principal Supervisor: Prof. Dr.-Ing. R.T. Hellwig, co-supervisor:G. Pültz, Müller BBM, Planegg.
- Kersken, M. **Comparison of Different Approaches for the Assessment of Summer Overheating by Means of Dynamic Thermal Building Simulation. (Vergleich von Bewertungsansätzen für die sommerlichen Temperaturen mittels thermischer Gebäudesimulation.)** Diploma Thesis, Diploma in Civil Engineering. University of Technology Munich, Chair for Building Physics, **2009**. Supervisors: Prof. Dr.-Ing. G.Hauser, Dr.-Ing. R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).
- Norrefeldt, V. **Assessment of the Air Exchange Rate of Different Window Configurations by Means of Numerical Simulation. (Bewertung des Luftaustausches verschiedener Fensterkonfigurationen durch numerische Simulation.)** Diploma Thesis, Diploma in Mechanical Engineering, University of Technology Munich, Chair for Thermodynamics **2008**. Supervisors Prof. Dr.-Ing. T. Sattelmayer, Dr.-Ing. M. Spinnler, Dr.-Ing. R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).
- Pschirer, M. **Pilot Study for the Assessment of Comfort under Different Aircraft Cabin Ventilation Concepts. (Vorstudien zur Komfortbewertung von Lüftungskonzepten in der Flugzeugkabine.)** Diploma Thesis, Munich University of Applied Sciences Faculty of Mechanical Engineering, Automotive Engineering and Aviation Engineering, **2008**, Supervisors: Prof. A. Staudt, Dr.-Ing. R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).
- Steiger, S. **Indoor Climate and Natural Ventilation – State of the Art and Pilot Study for a Measurement Concept. (Raumklima und freie Lüftung - Stand der Forschung und Versuche zu Messstrategien.)** Master Thesis, Master in Building Services Engineering, Munich University of Applied Sciences, Faculty for Building Services. **2007**, Supervisors: Prof. Dr.-Ing. B. Hörner, Dr.-Ing. R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).
- Schweinfurth, I. **Local Thermal Sensation with Varying Clothing Insulation. (Lokales thermisches Empfinden bei variierten Bekleidungs-dämmwerten.)** Diploma Thesis, Master in Mechanical Engineering, University of Technology Munich, Chair for Ergonomics **2006**, Supervisors: Dr.-Ing. R.Zöllner, Dr.-Ing. R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).
- Ludwig, S. **Economical Comparison of Local Heating Plant with Individual Combustion Plant in Housing Estates. (Ökonomischer Vergleich von Nahwärmeverversorgungssystemen mit Einzelfeuerstätten in Neubaugebieten.)** Diploma Thesis. Diploma in Civil Engineering, University of Kassel, Chair for Building Services, **2001**.
- Schanz, K. **Energy Concept for the Technical Centre of the Fraunhofer Institute for Building Physics (IBP) in Stuttgart. (Energiekonzept des IBP Technikums in Stuttgart.)** Seminar assignment. Diploma Thesis. University of Stuttgart, Chair for Building Physics, **1998**, Supervisors: Prof. Dr.-Ing. habil. Dr. h.c. mult. Dr. E.h. mult. K.Gertis, H.Erhorn, R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).
- Stoll, T. **Life Cycle Inventory of Energy and Residual Materials of a Single Family House Bricks-and-Mortar-Built. (Die Sachbilanz von Energie und Reststoffen eines Wohngebäudes in Ziegelbauweise.)** Diploma Thesis. Diploma in Civil Engineering, University of Stuttgart, Chair for Building Physics, **1997**, Supervisors: Prof. Dr.-Ing. habil. Dr. h.c. mult. Dr. E.h. mult. K.Gertis, H.Erhorn, R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).
- Broll, J. **Development of Heat Supply Concepts for Two Apartment Buildings. (Erstellung von Wärmeverorgungskonzepten für zwei Mehrfamilienhäuser.)** Diploma Thesis. Diploma in Mechanical Engineering, University of Stuttgart, Institute for Thermodynamics and Heat technology, **1996**, Supervisors: Prof. Dr.-Ing. H. Bach, H.Erhorn, R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).
- Böhringer, T. **Energetical Retrofitting of a School Building. (Sanierung eines Schulgebäudes - Erarbeitung eines wirtschaftlichen baulichen Konzeptes zur Energieeinsparung - Grund- und Hauptschule Plieningen, Erweiterungsbau 1970.)** Diploma Thesis. Diploma in Civil Engineering, University of Stuttgart, Chair for Building Physics, **1996**, Supervisors: Prof. Dr.-Ing. habil. Dr. h.c. mult. Dr. E.h. mult. K.Gertis, H.Erhorn, R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).
- Maaß, K. **Energetical Retrofitting of a School Building. (Sanierung eines Schulgebäudes mit Bauabschnitten der Jahre 1936 und 1957 - Erarbeitung eines wirtschaftlichen baulichen Energiesparkonzeptes.)** Diploma Thesis. Diploma in Civil Engineering, University of Stuttgart, Chair for Building Physics, **1996**, Supervisors: Prof. Dr.-Ing. habil. Dr.

h.c. mult. Dr. E.h. mult. K.Gertis, H.Erhorn, R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).

Beck, G.

Energetical Retrofitting of a School Building. (Erarbeitung eines wärmetechnischen Sanierungskonzeptes für ein Mehrfamilienhaus in Heilbronn.) Diploma Thesis. Diploma in Civil Engineering, University of Stuttgart, Chair for Building Physics, **1996**, Supervisors: Prof. Dr.-Ing. habil. Dr. h.c. mult. Dr. E.h. mult. K. Gertis, H. Erhorn, R.T. Hellwig (supervising at the Fraunhofer Institute for Building Physics, Holzkirchen).

Final year Architectural design project Master' and Bachelor's

Dahl Petersen, N.; Pöckel Hemmingsen, E.

Danish Cul-de-sac design: A sustainable living for the future. Architectural Design project Aalborg University, Department of Architecture, Design and Media Technology, Spring **2022**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig

Brinkmann Kristiansen, S.; Bovbjerg, R.E.; Fredholm Hansen, M.

Rebuild Rebild. Transformation, renovation, reuse of materials and new buildings. Rebild is a small village in the north of Denmark where the farm is located. Architectural Design project. Aalborg University, Department of Architecture, Design and Media Technology, Spring **2021**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig

Godballe Laugesen, K.; Nafisi, S.

Holstebro settlement - high performance multifunctional dwellings. Architectural Design project. Aalborg University, Department of Architecture, Design and Media Technology, Spring **2021**, Supervisor: Prof. Dr.-Ing. R.T. Hellwig

Klijn, D.; Rusch, B.

ZERO: How to apply a Low-Tech approach in a transformation of a car park in London into residential building with additional mixed-use, point of departure: Baumschlager Eberle's 2226, Master thesis project, Aalborg University, August **2020**, Main supervisor, Prof. R.T. Hellwig, co-supervisor: Assoc Prof. C. Brunsgaard

Rejtkær Bülow, C. Krogh Andersen T.

Green Meadow: Sustainable Housing of Tomorrow. Master thesis project, Aalborg University, Spring **2020**, Main supervisor, Prof. R.T. Hellwig, co-supervisor: Assoc Prof. C. Brunsgaard

Jørgensen, P.; Nørgaard Mikkelsen, S.

Circular economy in future housing. Architectural Design project. Aalborg University, Department of Architecture, Design and Media Technology, Spring **2020**, Principal Supervisor: Prof. Dr.-Ing. R.T. Hellwig, Co-supervisor: Assoc Prof. C. Brunsgaard, PhD

Bugenings, L. Schaffer, M. Federl, M. Merkle, D. Arnold, B. Schwaiger, T. Herb, M. Konrad, L. Fischer, M. Eckert, D. Matt, A. Bartsch, S. Heckmann, D. Ruchti, I. Bredemeier, S. Balzano, M.

Final Year Undergraduate Project:

BegegnungPlus – Begegnungszentrum in Plusenergiestandard (CommunityPlus - Community Centre in plus-energy standard), Focus Building Climatology and Building Technology

On the basis of preliminary planning, the building complex is to be energetically optimised. This includes summer and winter heat protection and an optimised facade design as well as the elaboration and dimensioning of the building construction with thermal bridge optimisation. Suitable robust building service systems with cost estimation should enable the plus energy standard.

In cooperation with the company: 4Waende GmbH

Supervisors: Prof. Dr. Runa T. Hellwig, Prof. Dr. Wolfgang Nowak, Bachelor in Energy Efficient Design and Construction, Augsburg University of Applied Sciences. **2018**, 16 students

Atil, E., Breitruck, C. Frey, J. Geiger, C. Hackl, M. Hanna, N. Heberle, A. Jacob, D. Linhardt, M. Mayr, P. Merkl, S. Rehner, C. Rottmair, A. Seitz, K. Yilmaz, N.

Final-Year Undergraduate Project:

E²V120 – Energy Efficient Retrofitting and Extension of Semi-Detached Houses with Variable Floor Plan with a Maximum of 120 m². Augsburg, 'Volkssiedlung Haunstetterstraße'

(Energieeffiziente Erweiterung von grundrissvariablen Wohnhäusern mit maximal 120 m² Wohnfläche. Augsburg, Volkssiedlung, Haunstetterstraße)

Supervising together with Prof Georg Sahner, Bachelor in Energy Efficient Design and Construction, Augsburg University of Applied Sciences. **2013**

15 students

Bauer, M.;
Bosse, P.
Brandl, H.
Burchardt, N.
Dlouhy, J.
Fingler, M.
Gülzow, F.
Mayer, K.
Tanzer, C.
Terveen, U.

Final-Year Undergraduate Project:

EAN.54.12 – Energetical and Architectural Redefinition of Apartment Houses in Vogesenstraße in Augsburg“ (Energetische und architektonische Neudefinition der Wohnbebauung Vogesenstraße in Augsburg).

Supervising together with Prof Dr. Martin Bauer, Bachelor in Energy Efficient Design and Construction, Augsburg University of Applied Sciences. **2012**

10 students

Courses

Aalborg University

R.T. Hellwig, Professor of Human Building Interaction,
Integrated Architecture Group
all courses in MSc. Architecture

- Autumn 2022
- Advanced **Integrated Design II**, 5 ECTS:
Green Building Strategies with Focus on Energy and Emission Assessment
Course responsible, lecturing, exercises, supervision, examiner:
Including lecture and exercise on: Designing indoor environmental behaviour opportunities for the occupants
Including lecture on
 - **Internship Supervisor to a research internship student** Nikolai Cerqueira Donskov Iversen
 - **Examinator, censor** activities
- Spring 2022
- Advanced **Integrated Design III-C**, 5 ECTS: **Critical-experimental Studies in Life Cycle Assessment and Materiality to Support Sustainable-tectonic Design Thinking, Examples of window-wall detail**
Course responsible, coordinating, lecturing, supervising, examiner:
2nd master's semester architecture, Life Cycle assessment, natural materials, re-used materials, materiality, physical material properties, thermal bridges
 - **2 master thesis architecture design project supervision**
 - **Student excursion to Rotterdam, April 2022, Bachelor's programme, Architecture and Design education**
 - **Examinator, censor** activities
- Autumn 2021
- Advanced **Integrated Design II**, 5 ECTS:
Green Building Strategies with Focus on Energy and Emission Assessment
Course responsible, lecturing, supervision, examiner
 - Including **lecture on: Designing indoor environmental behaviour opportunities for the occupants**
 - Integration of the **"HEALTHY HOMES DESIGN COMPETITION"** into the MSc Architecture course and project module
 - **Initiated and coordinated the participation** of our students in the **"Healthy Homes design Competition"** at a site in Rotterdam organised by **REHVA and VELUX**. 6 student groups (each 5 students) chose the Competition project in their main design project (20 ECTS), submission of 4 groups. **1 group won 2nd price and price for best poster**
 - **Examinator, censor** activities
- Spring 2021
(Covid-19 lock down, online)
- Advanced **Integrated Design III-C**, 5 ECTS: **Critical-experimental Studies in Life Cycle Assessment and Materiality to Support Sustainable-tectonic Design Thinking, Examples of window-wall detail**
Course responsible, coordinating, lecturing, supervising:
2nd master's semester architecture, Life Cycle assessment, natural materials, re-used materials, materiality, physical material properties, thermal bridges
 - **2 master thesis architecture design project supervision**
- Teaching Portfolio

- **Examinator, censor** activities
- Autumn 2020
(partly online)
- Advanced **Integrated Design II, 5 ECTS: Green Building Strategies with Focus on Energy and Emission Assessment**
Course responsible, coordinating, lecturing, supervision: 5 ECTS
 - Including **lecture on: Designing indoor environmental behaviour opportunities for the occupants**
 - **Examinator, censor** activities
 - **Ph.D.-course:** Human Perception, Well-being and Behaviour in Indoor Built Environments, Course responsible, lecturing, supervising
- Spring 2020
(Covid-19 lock down, online)
- **Materiality and Construction of Sustainable Buildings,**
Course responsible, lecturing, supervising: 5 ECTS
1st master's semester architecture, Life Cycle assessment, natural materials, re-used materials intense detailing of window-wall meeting
 - in another course **lecture on: Perception of indoor climate, measurable and immeasurable parameters for design**
 - **3 master thesis architecture design project supervision**
 - **Examinator, censor** activities
- Autumn 2019
- Internship supervision
 - **Examinator, censor** activities
 - **Ph.d. course - Towards a Sustainable Building Culture,** Course responsible, lecturing, supervising
- Spring 2019
- Course responsible, lecturing, supervising: **Materiality and Construction of Sustainable Buildings, 5 ECTS**
1st master's semester architecture, Life Cycle assessment, natural materials, **1:1:model building**
 - lecture in course: Perception of indoor climate, measurable and immeasurable parameters for design
 - **Examinator, censor** activities
- Autumn 2018
- Lecture on: Engineering adaptive buildings in urban settings. In PhD course: "In search for an integral Building Culture – Relations between the architectural volume and the urban surface."
 - **Examinator, censor** activities

Augsburg University of Applied Sciences

Prof. Dr. Ing. Hellwig, Building Climatology

2016 -2018
and

Professor for Building Climatology, Unit Energy Efficiency Design,
Augsburg University of Applied Sciences, Faculty Architecture and Building

2009 - 2014

I have been teaching in the following programmes:

- **Bachelor “Energy Efficient Design and Construction“**,
- **Master “Energy Efficient Design“**,
- Bachelor “Architecture“

I gave classes in:

- **energy demand analysis, energy audit of buildings**
- **sustainable building and certification systems**
- **solar gains and solar shading, summer heat protection**
- **indoor climate and comfort**
- **foundations of building physics (heat protection)**
- **thermal bridges**
- **energetically retrofitting of buildings**
- **scientific writing**
- **supervising in terms of energy concept, building physics, energy demand analysis, indoor climate in design courses**

Energy Efficient Design and Construction (B.Eng.)

1. Semester:

Foundations of Building Physics: Heat Transfer, Energy Demand Calculations, Moisture Protection;

Coordination of the module, lectures with tutorials

3. Semester

Solar Gains and Solar Shading, Summer Heat Protection, Thermal Bridges, Primary Energy Demand Calculation for Residential Buildings;

Coordination of the module (which includes lectures on building material and fire protection held by colleagues); lectures with tutorials

4. Semester

Primary Energy Demand Calculation for Non-Residential Buildings;

Coordination of the module (which includes lectures on building services held by a colleagues), lectures with tutorials

4. Semester

Energy Efficiency 1: Designing an Energy Efficient Residential Building: Energy Concept, Dimensioning of Thermal Insulation, Calculating the Primary Energy Demand; studio project module; supervising

4. Semester

Elective course: Computer aided calculation of primary energy demand of buildings and optimisation of thermal bridges;
Coordination of the module

5. Semester

Blower Door Testing and Infrared Thermography;
Coordination of the elective module

6. Semester

Energy Efficiency 2: Retrofitting a Residential Building: Energy Concept, Optimising Thermal Bridges, Dimensioning of Building Services; project module;

Coordination of the module, supervising students together with

colleagues focussing on architecture/ construction and building services

7.Semester

Final year undergraduate projects; Architectural design with technical concept supervising

Energy Efficiency Design (M.Eng.)

Indoor Climate, Thermal comfort and IAQ

Coordination of the module and lecture with tutorial

Blower Door Testing and Infrared Thermography;
Coordination of the elective module

Building Automation;
Coordination of the elective module

Scientific Working and Writing;

Coordination of the module, lecture, supervising

Master Thesis Projects;

supervising, see list of supervised projects

Architecture (B.A.)

winter term
2009-14

Thermal bridges;
Coordination of the module (which includes lectures on building material and building services held by colleagues), lectures with tutorials

winter term
2008-09

Introduction to Building Climatology;
lecture; Graduate programme "Master of Energy Efficiency Design"

National University of Singapore

2014, 2015

Module Energy and Ecology, part Energy, Master's programme
Integrated Sustainable Design, School of Design and Environment, NUS

University of Kuala Lumpur- University of Applied Sciences Rosenheim

2013, 2014

Master of Engineering Technology, Green and Energy Efficient Buildings,
Kuala Lumpur:
Modul: **Thermal Comfort.**
University Kuala Lumpur, university of Applied Sciences Rosenheim,
Germany, University Network Greater Munich Area, DAAD funded

University of Technology Munich,

winter term 2008-09 2007-08 2006-07	Indoor Climate and Comfort; Lecture, Graduate (Diplom) programme Civil Engineering at the Chair of Building Physics Univ.-Prof. Hauser
summer term 2003 2004	Responsible for the organisation of the teaching programme for the Graduate course (Diploma) for the programme "Architecture" at the Chair of Building Services Prof Hausladen
winter term 2003-04	Coordination and supervising: "Analysis of Building Services in Non-Residential Buildings", Assignment in the module "Building Services and Building Physics II", within the graduate programme "Architecture" at the Chair of Building Services Univ-Prof Hausladen
winter term 2002-03 2003-04 summer term 2003	Supervision in terms of energy concept, building physics, energy demand analysis, indoor climate in design courses in co-operation with architectural design units - "Youth Centre" (Jugendbegegnungsstätte) together with the Chair for timber construction Univ-Prof Kaufmann, Diploma programme "Architecture" - "Horticultural Show Munich" (Bundesgartenschau München) together with the Chair of Building technology, Univ-Prof Herzog, Diploma programme "Architecture"

University of Kassel, Fachgebiet Prof. Hausladen

summer term 2002	Foundations of Building Services (lighting, sanitary systems); Lectures, Diploma programme "Architecture"
	Foundations of Building Services (lighting, sanitary systems); Tutorials, Diploma programme "Architecture"
winter term 2001-02	Foundations of Building Services (ventilation, heating); lectures, Diploma programme "Architecture"
winter term 2000-01	Integrated Design – House for a Researcher in Solar Energy; Project, Diploma programme "Architecture"

Examples of thesis architectural designs and studio projects



Master thesis project of Sidse Brinkmann Kristiansen, Ronja Elisabeth Bovbjerg, Marie Fredholm Hansen, Aalborg University, Supervisor: R.T. Hellwig

How to transform old unused Danish farms and integrate them in a new community housing project with shared facility spaces as there exist quite some already in Denmark. Transformation, renovation, reuse of materials and new buildings. Rebuild is a small village in the north of Denmark where the abandoned farm is located. Transforming the former stable into the community house and reuse bricks for building extra thermal mass at inner walls in the otherwise wooden buildings

From the students' poster: "Retopia: Imagine a city. A small one. One where you know every face. Every laugh. Every smile. As you have just seen one. At the common space. Eating dinner. As a giant family. The wooden common house is indeed a gathering point. For you. Your family. The rest of the city. It is the centre. Connecting the small dwellings that on their own would stand out. Similarity is outdated and recycle is the new black. Everything is patinated. The herbaceous border has been replaced with nature. Real nature of herbs, plants and small insects. Acting as glue to social communities. You take a step back and enjoy the beauty. Be entertained by what you can see. The life of people. The history of the city, the materials and the sign of life that is manifested within them. Is this romantic rubbish? Yes, it is. Is it a declaration of love to reuse. Yes, it is. It is Retopia. Retopia is inhabited by 76 people: 13 families and 12 empty-nesters. With the notion live closer and share more as a lifestyle they live and thrive with only 21 m2 per person (+ 5,6 m2 shared heated facilities). The existing farm buildings set the frame of 700 m2 shared facilities, a large orangery and storage space and the new buildings have a total energy frame of 37,4 kWh / m2 / year."

Spring 2021



Partitions walls of reused bricks from the site.

To reduce the risk of overheating in summer 318 m² of bricks are reused as thermal mass in the dwellings amounting to a saving of 17.400 kg CO₂-eq.

Iteration 3.1

In the third iteration, it was initially investigated if introducing just one brick wall in the middle of the room would affect. As seen on the result (ill. 100) it is not sufficient since the temperature is still exceeding the upper limit.



3.1

External wall, inner surface
Plywood 12 mm

Partition wall
Reused bricks 105 mm

Ceiling
Plywood 12 mm

Iteration 3.2

In iteration 3.2 clay boards are added to the ceiling which could be effective when opening the top windows, making the air that travels through the room along with the ceiling cooling down the clay boards. As seen on the results on ill. 101 the hours above 27°C and 28°C are reduced further but still not to an acceptable level.



3.2

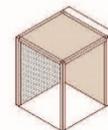
External wall, inner surface
Plywood 12 mm

Partition wall
Reused bricks 105 mm

Ceiling
Claytec heavy boards 22 mm

Iteration 3.3

In iteration 3.3 all plywood surfaces are replaced with clay boards resulting in a sufficient amount of thermal mass to keep the temperature below the upper limit (ill. 102).



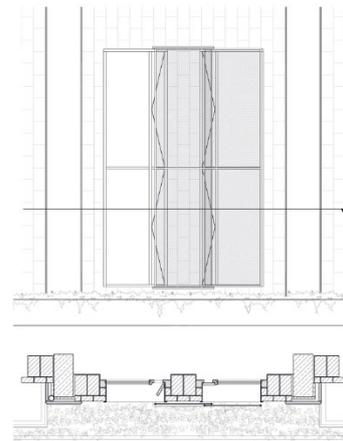
3.3

External wall, inner surface
Claytec heavy boards 22 mm

Partition wall
Reused bricks 105 mm

Ceiling
Claytec heavy boards 22 mm

ZERO



Master thesis project
of Dirk Klijn and
Benjamin Rusch,
Aalborg University, ,
Supervisor:
R.T. Hellwig

How to apply a Low-Tech approach in a transformation of a car park in London into residential building with additional mixed-use, point of departure:
Baumschlager Eberle's 2226

Left: "Following the Low-tech design philosophy the building is designed without technical heating systems and is purely heated by solar and internal gains. The indoor climate is controlled by a centralized server, with override capacity by the occupants, controlling the natural ventilation openings. Swings in temperature and gains are balanced out by the heavy construction of the floors and wall, with the walls and windows keeping the energy in with u values of $0,17 \text{ W/m}^2\text{K}$ and $0,69 \text{ W/m}^2\text{K}$ respectively."

Right: "All windows feature a 20 cm wide ventilation panel. These computer controlled panels open and close according to the buildings and occupants needs. By regulating the size of the openings the apartments air can be refreshed up to 7 times an hour. The only mechanical ventilation can be found in the toilets, these are vented by a 125mm shaft with a moisture and heat activated fan in each bathroom."

Spring 2020

NEUE STADTBÜCHEREI AUGSBURG



Projekt an der Hochschule Augsburg, E2D in Zusammenarbeit mit Stadtbücherei Augsburg, Hochbauamt und Fachforum Energie der Stadt Augsburg:
Analyse Technik Systeme, Messungen oder weitere Analysen, Optimierungspotenziale: Ca. 50 Studierende, 31 Einzelaufgaben, Energieaudit und Energiemanagement, Gebäudehülle und (Doppel)-Fassade, Eingangssituation, Raumklima, Innere und äußere Wärmelasten, Lüftungstechnik und natürliche Lüftung, Heiztechnik und arbeitsplatzbezogenes Heizen, Kunstlicht, Tageslicht, Sonnenschutz, Sommerlicher Wärmeschutz, Energieverbrauch: Endenergie und Primärenergie, Nutzung Erneuerbarer Energien, Nutzerbefragung

Die Ergebnisse wurden abschließend der Stadtbücherei, dem Hochbauamt und dem Fachforum Energie präsentiert.

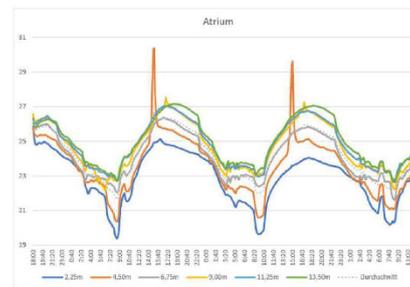
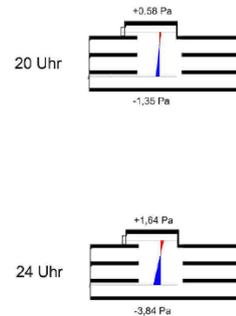


Abbildung 9: Darstellung Messergebnisse Atrium vom Referenztag 21.04.2018



Sommersemester 2017

Links: Zwei Studentinnen führen Messungen an einem Quell-Luftauslass durch, Mitte und Rechts: Auseinandersetzung mit dem Thema natürliche Lüftung der Bücherei im Sommer mit dem Ziel den Betrieb der Lüftungsanlage zu reduzieren: Mitte: Messung, Rechts: Analyse Lüftungspotential durch tageszeitlich abhängige Luftdruckprofile im Atrium

Modul: Energieeffizienz 2, 6. Semester, entweder energetisches Sanierungsprojekt oder Analyse/Optimierungsprojekt eines Bestandsgebäudes, Prof. Hellwig, Prof. Nowak, Prof. Runkel, Herr Speckle

**PLUS
COMMUNITY
CENTRE**

Eine Zusammenarbeit mit der Firma 4-Wände GmbH, die sich auf den Bau von Begegnungsstätten mit gemischter Nutzung in Gemeinden spezialisiert hat und das Potential von Energi-Plus-Gebäuden kennenlernen will

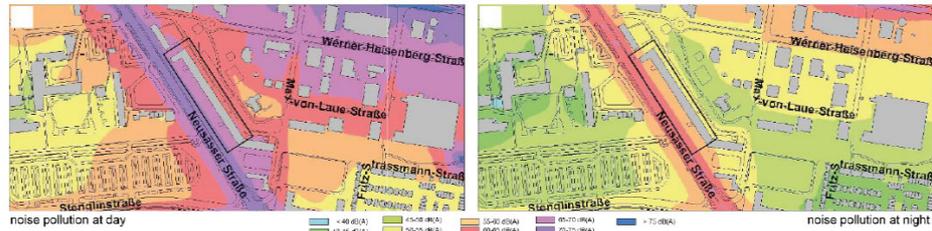
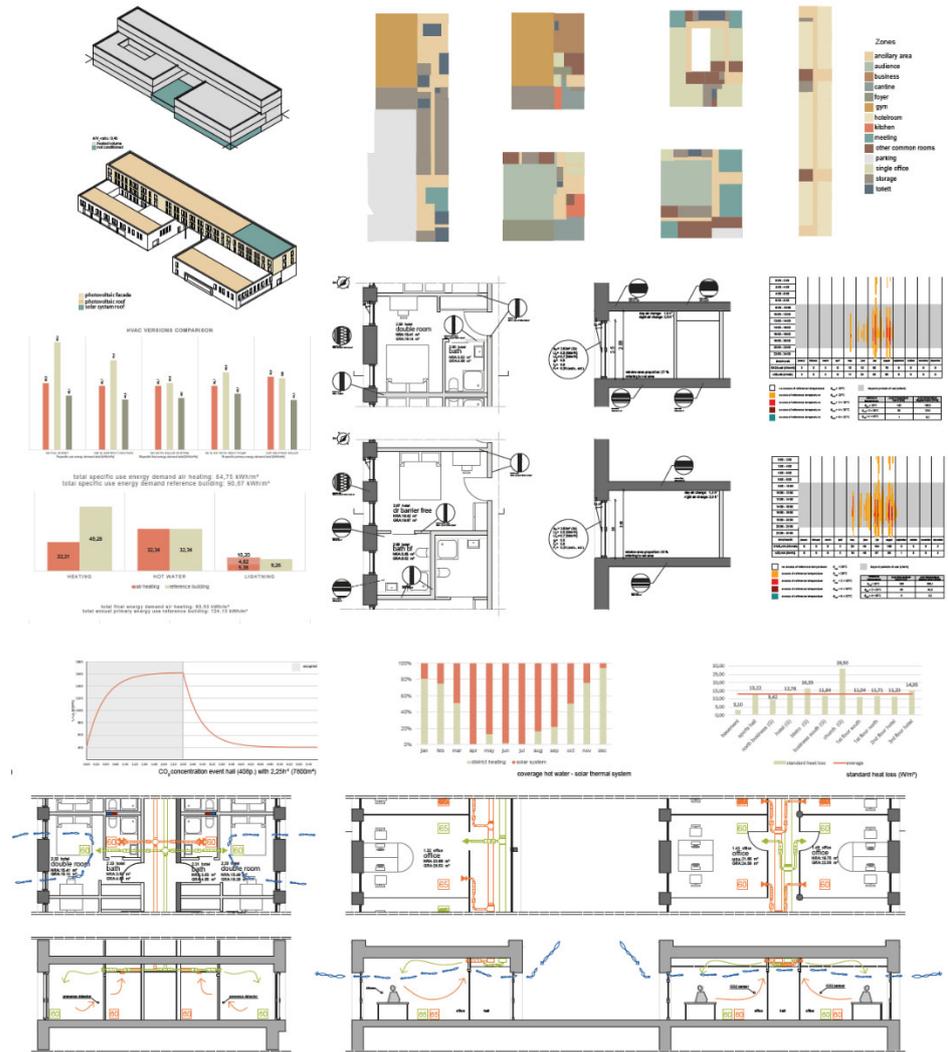


Figure 1 map with the noise pollution of the site at day and at night (<http://www.laermkarten.de/augsburg/>)



Wintersemester

2017/2018

Planausschnitte: Markus Schaffer: oben: Zonierung, unten: Bedarfslüftungskonzept mit CO₂ Regelung für Hotelzimmer und Büro der Mischnutzung, Simulation CO₂, Deckung solare Wärme, Vergleich Wärmeverluste der verschiedenen Nutzungen.

Bachelor thesis focus Building Technology: Plus community centre as plus energy house main focus building climate control and building technology as timber frame construction- Prof. Dr. Runa T. Hellwig Prof. Dr. Wolfgang Nowak , Augsburg University of Applied Sciences

Professional Training Courses

- 2017 Module: **indoor climate and summer heat protection**. Inhouse professional training for the City of Aachen. Steinbeis-Transfer-Instituts Bau und Immobilienwirtschaft der Steinbeis-Hochschule Berlin GmbH, 1 day, 18 Dec 2017
- 2015 Modul 1. **Solar technologies - introduction. Solar technologies - design and application**. 2. MFA-JICA JSPP21 Training on Climate Change and Energy Sustainability, Singapore, 5-16 Oct 2015, National Environment Agency Singapore
- 2015 Modul: 1. **Introduction to Solar Technologies. 2. Solar Technologies - Design and applications**. SCPTA/SIDTEC Training Programme on Clean Energy and Emission Reduction, Singapore, 20-24 Jul 2015, National Environment Agency Singapore
- 2015 8th Capacity Building Programme for Officers of Electricity Regulatory Commissions of India in Singapore: **High Performance Buildings for Singapore for Better Energy Management**, 18-20. Februar 2015
- 2014 Modul **Bauklimatik (Buildings Physics and Indoor Climate)**. Inhouse Seminarreihe "Nachhaltiges Bauen" für Mitarbeiter des Bundesamtes für Bauwesen und Raumordnung (BBR), Steinbeis-Transfer-Instituts Bau und Immobilienwirtschaft der Steinbeis-Hochschule Berlin GmbH zum Bewertungssystem Nachhaltiges Bauen (BNB), 1 day, 13.6.2014
- 2012 Master of Science in Real Estate, Module: **Requirements and Technical Capabilities to Design Comfortable and Energy Efficient Dwellings and Commercial Properties**, AIK Akademie für Immobilienkompetenz Dresden, Stuttgart, 3.-4.8.2012.
- 2011-2014 Module **Building Climatology and Building Physics**, Certificated Professional Course "Authorised Expert on Sustainable Buildings" (Sachverständiger Nachhaltiges Bauen"), Steinbeis-Transfer-Institute Bau und Immobilienwirtschaft of the Steinbeis University Berlin (BNB), 16.12.2011, 5.6. and 12.6.2012, 24.11.2012, 19. April 2013, 28.2.2014, 13.6.2014
- 2012, 2009 Intended 2013 Module **Temperature: Foundations of Thermal Comfort**. "Master in Climadesign", University of Technology Munich 2009, 2012, 22. April 2013.
- 2010 **Hybrid Ventilation as an Innovative Ventilation System in Classrooms**. (Hybride Lüftung als innovative Lüftungstechnik für Schulen.) vhw-Seminar: Ventilation in Schools and Gyms under Consideration of Indoor Climate and Technical Issues. (Be- und Entlüftung in Schulen und Turnhallen unter raumklimatischen und technischen Gesichtspunkten), Mannheim, 15. November 2010
- 2009 Training Course "**Building and Energy 2009**" (Bauen und Energie 2009): Module 1 "Comfort in Residential and Non-Residential Buildings" (Behaglichkeit in Wohn- und Zweckbauten) 2. October 2009, Centre de Recherche Public Henri Tudor, Luxembourg.
- WS 2001/2002, SS 2002/2003, WS 2003/2004, WS 2004/2005, WS 2005/2006 Lecture and Tutorial: **The German Energy Saving Ordinance and the German Standard DIN V 4701-10 'Building Services'**. (Energieeinsparverordnung. DIN 4701-10 Anlagentechnik für Gebäude), Professional Training Programme: 'Master in Energy and Environment' and 'Certified Energy Consultant', University of Kassel.
- 2003 **The Innovative Heating System According to the German Energy Saving Ordinance 2002 and the German Standard DIN V 4701-10**. (Die innovative Heizungsanlage nach EnEV 2002 und DIN V 4701-10.) Seminar. Organisation: Baumeisterseminar e.V., Nördlingen, July 2003.

- 2002 together with Prof. Dr.-Ing. G.Hausladen: **The German Energy Saving Ordinance (Die Energieeinsparverordnung – EnEV)**. City of Munich, Unit for Buildings and building Services. Munich, May 2002.
- 2001 **The New German Energy Saving Ordinance** (Nye tyske energiforskrifter). Miljøriktige Fasader - Solskjerming. ØkoBygg-Seminar. Norges Solsjermingsforbund, Oslo, 6.12.2001
- 2001 together with Dr.-Ing. A. Maas: **The Calculations Methods at a Glance/ The Application of the Methods on the Basis of Examples/ Software. (Die Rechenverfahren im Überblick/ Die Umsetzung der Verfahren anhand von Beispielen/ Planungswerkzeuge und Software.)** Seminar, Organisation: Centre for Building of the City of Munich, Munich, Nov. 2001.

Appendix

Pedagogical training certificates

Das Karlsruher Institut für Technologie (KIT)

verleiht

Dr.-Ing. Runa Tabea Hellwig

geboren am 4. März 1970 in Berlin

die Lehrbefugnis für das Fach

Bauklimatik

nachdem sie in einem ordnungsgemäß durchgeführten Habilitationsverfahren an der
KIT- Fakultät für Architektur durch ihre Habilitationsschrift

Zufriedenheit mit dem Raumklima

und einen wissenschaftlichen Vortrag ihre besondere Befähigung nachgewiesen hat,
dieses Fach in Forschung und Lehre selbstständig zu vertreten.

Mit der Erteilung der Lehrbefugnis ist das Recht zur Führung der Bezeichnung
„Privatdozentin“ verbunden.

Karlsruhe, 24. September 2015



Präsident des Karlsruher Instituts für
Technologie (KIT)



i.A. Dekan der KIT-Fakultät
für Architektur



Zertifikat Hochschullehre Bayern

Frau Professorin

Dr.-Ing. Runa Tabea Hellwig

Hochschule Augsburg

hat an hochschuldidaktischen Fortbildungen im Rahmen des Programms ProfiLehre
im Umfang von **159 Arbeitseinheiten (AE) á 45 Minuten** teilgenommen.

Das absolvierte Seminarprogramm umfasst die Themenbereiche:

- Lehr- und Lern-Konzepte
- Präsentation und Kommunikation
- Mündliche und schriftliche Prüfungen
- Evaluation der Lehre
- Fach- und Methodenberatung für Studierende

Ingolstadt, 6. Mai 2013



Dr. Franz Waldherr

Prof. Dr. Franz Waldherr
Direktor des DiZ

ProfiLehre
Professionalisierung der Lehre an den
bayerischen Universitäten

Lehr- und Lern-Konzepte

Basisseminar Hochschuldidaktik	22,5	AE
Intercultural Academic Teaching in English: How Do I Become a Good Intercultural Teacher?	6	AE
	<hr/>	
	28,5	AE

Präsentation und Kommunikation

Basisseminar Hochschuldidaktik	10	AE
Sprachtraining in Englisch für Professoren und Professorinnen der staatlichen Fachhochschulen in Bayern	25	AE
Schreiben lehren an der Hochschule	16,5	AE
Präsenz zeigen - Ihr starker Auftritt!	8	AE
Wirken durch Stimme - Das Wirkungspotenzial der Stimme entfalten	16,5	AE
Intercultural Academic Teaching in English: How Do I Become a Good Intercultural Teacher?	6	AE
	<hr/>	
	82	AE

Mündliche und schriftliche Prüfungen

Rechtsgrundlagen für die Lehre an Hochschulen	6	AE
Basisseminar Hochschuldidaktik	2	AE
Anwendungsorientiert prüfen - Kompetenz steigern	8	AE
	<hr/>	
	16	AE

Evaluation der Lehre

Rechtsgrundlagen für die Lehre an Hochschulen	2	AE
Basisseminar Hochschuldidaktik	2	AE
Evaluation der eigenen Lehre	12	AE
	<hr/>	
	16	AE

Fach- und Methodenberatung für Studierende

Umgang mit Lernwiderständen und Konflikten	16,5	AE
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Summe der erbrachten Arbeitseinheiten	<hr/>	
	159	AE

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Hiermit bestätigen wir, dass

**Frau Professorin Dr.-Ing. Runa T. Hellwig,
Hochschule Augsburg**

an der Fortbildungsveranstaltung

**„Rechtsgrundlagen für die Lehre
an Hochschulen“**

am 30.04.2010 im DiZ in Ingolstadt

teilgenommen hat.

Ingolstadt, den 30.04.2010

Prof. Dr. Franz Waldherr
Direktor

Prof. Dr. Astrid von Blumenthal
Seminarleitung

Arbeitseinheiten für das Zertifikat Hochschullehre Bayern:
Evaluation der Lehre 2 AE
Mündliche und schriftliche Prüfung 6 AE

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Goldknopfgasse 7
85049 Ingolstadt
www.diz-bayern.de

ZENTRUM FÜR HOCHSCHULDIDAKTIK DER BAYERISCHEN FACHHOCHSCHULEN

**Frau Professorin Dr.-Ing. Runa T. Hellwig,
Hochschule Augsburg**

hat am Basisseminar Hochschuldidaktik

vom 04. Oktober – 07. Oktober 2010

teilgenommen.

Ingolstadt, den 07. Oktober 2010



Prof. Dr. Franz Waldherr
- Direktor -



Dr. Christiane Drühe-Wienholt
-Seminarleiterin-



Prof. Dr. Werner Michl
- Seminarleiter -

Dieser Kurs kann folgendermaßen für das ProfiLehre Zertifikat Hochschullehre Bayern
eingebracht werden:

36,5 Arbeitseinheiten (AE)

davon: 22,5 AE Lehr- und Lernkonzepte

- 10 AE Präsentation und Kommunikation
- 2 AE Evaluation
- 2 AE Prüfungen



Runa Hellwig

Successfully completed a four week language development course at
Bell International College, Cambridge
from 29 August to 23 September 2011

The course offered input and practice in the following language areas

- Professional Communication Skills : Presentation, Meetings, Negotiations and Social English
- A review of grammatical structure including conditionals, tenses overview and gerund / infinitive
- Topic-based vocabulary development
- Intensive / Authentic Listening Practice
- Professional Correspondence.

The course also included guided visits to places of academic and cultural interest and talks by a visiting speaker.

In weeks three and four of the course the participants gave extended presentations and/or lecture extracts in English from their specialist fields to the group.

Centre Manager/Director of Studies

Chief Executive

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Fachhochschulen

Hiermit bestätigen wir, dass

**Herr Professor Dr.-Ing. Runa T. Hellwig,
Hochschule Augsburg**

an der Fortbildungsveranstaltung

„Schreiben lehren an der Hochschule“

am 21./22.11.2011 im DiZ in Ingolstadt

teilgenommen hat.

Ingolstadt, den 22.11.2011

Prof. Dr. Franz Waldherr
Direktor

Dzifa Vode
Seminarleitung

Arbeitseinheiten für das Zertifikat Hochschullehre Bayern:
Präsentation und Kommunikation: 16,5 AE

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**Frau Professorin Dr.-Ing. Runa T. Hellwig,
Hochschule Augsburg**

an der Fortbildungsveranstaltung

„Präsenz zeigen – Ihr starker Auftritt“

am 6.12.2011 im DiZ in Ingolstadt

teilgenommen hat.

Ingolstadt, den 6.12.2011

Prof. Dr. Franz Waldherr
Direktor

Carsten Schleuß
Seminarleitung

Arbeitseinheiten für das Zertifikat Hochschullehre Bayern:
Präsentation und Kommunikation: 8 AE

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Hiermit bestätigen wir, dass

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Hochschule Augsburg**

an der Fortbildungsveranstaltung

„Evaluation der eigenen Lehre“

am 17./18.1.2012 im DiZ in Ingolstadt

teilgenommen hat.

Ingolstadt, den 18.1.2012

Prof. Dr. Franz Waldherr
Direktor, Seminarleitung

Claudia Walter
Seminarleitung

Arbeitseinheiten für das Zertifikat Hochschullehre Bayern:
Evaluation 12 AE

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Hochschule Augsburg**

an der Fortbildungsveranstaltung

**„Wirken durch Stimme – Das
Wirkungspotenzial der Stimme entfalten“**

am 25./26.1.2012 im DiZ in Ingolstadt

teilgenommen hat.

Ingolstadt, den 26.1.2012

Prof. Dr. Franz Waldherr
Direktor

Katrin Müller-Höcker
Seminarleitung

Arbeitseinheiten für das Zertifikat Hochschullehre Bayern:
Präsentation und Kommunikation 16,5 AE

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Didaktikzentrum

Hiermit bestätigen wir, dass

**Frau Professorin Dr.-Ing. Runa T. Hellwig,
Hochschule Augsburg**

an der Fortbildungsveranstaltung

**„Intercultural Academic Teaching in English:
How Do I Become an Good Intercultural
Teacher?“**

am 4./5.5.2012 im DiZ in Ingolstadt

teilgenommen hat.

Ingolstadt, den 5.5.2012

Prof. Dr. Franz Waldherr
Direktor

Apl. Prof. Dr. Joachim Grzega
Seminarleitung

Arbeitseinheiten für das Zertifikat Hochschullehre Bayern:

Lehr- und Lernkonzepte:	6 AE
Präsentation und Kommunikation	6 AE

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Hiermit bestätigen wir, dass

**Frau Professorin Dr.-Ing. Runa T. Hellwig,
Hochschule Augsburg**

an der Fortbildungsveranstaltung

**„Umgang mit Lernwiderständen und
Konflikten“**

am 15./16.5.2012 im DiZ in Ingolstadt

teilgenommen hat.

Ingolstadt, den 16. Mai 2012

Prof. Dr. Franz Waldherr
Direktor

Eva-Maria Schumacher
Seminarleitung

Arbeitseinheiten für das Zertifikat Hochschullehre Bayern:
Beratung 16,5 AE

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Hiermit bestätigen wir, dass

**Frau Professorin Dr.-Ing. Runa T. Hellwig,
Hochschule Augsburg**

an der Fortbildungsveranstaltung

**„Anwendungsorientiert prüfen –
Kompetenz steigern“**

am 06.05.2013 an der Hochschule Landshut

teilgenommen hat.

Ingolstadt, den 6. Mai 2013

Prof. Dr. Franz Waldherr
Direktor

Mag. Dr. Erich Hauer
Seminarleitung

Arbeitseinheiten für das Zertifikat Hochschullehre Bayern:
Prüfungen 8 AE

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85049 Ingolstadt
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