

BUILDING SUSTAINABILITY

MANAGEMENT METHODS FOR

ENERGY EFFICIENCY MBA



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THIS PUBLICATION REFLECTS THE STATE OF PLANNING AT THE TIME OF PRINTING.
CHANGES MAY OCCUR.

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Dear students,

The concept of the German “Energiewende” – literally, energy transition – has gained international attention. It includes a variety of measures that aim at making Europe’s largest economy free of fossil fuels and nuclear energy. In order to attain this, all areas of energy production and consumption will have to go through a transition process. Beside mobility and production, buildings are therefore one of the key factors for a successful Energiewende. In the building sector, this means redirecting from a mainly fossil-fueled energy supply towards renewable energies and a much more energy-efficient use of energy in buildings and urban, as well as, regional areas. This is one of the largest and most urgent challenges of current urban development and other social disciplines.

Finding solutions to such a complex challenge means that a multitude of actors, from business, civil society, to public administration take part in the process and influence it with their differing and often conflicting interests. Resulting from this is the need for skilled workers who, based on a highly professional qualification, both understand all stakeholders and are able to work in a leading position with them.

The MBA program in Building Sustainability – Management Methods for Energy Efficiency will teach you exactly this: skills, methods, and concepts to consider different approaches, to understand them, and to align them for reaching sustainable solutions. Such proficiencies are not only important in the context of the Energiewende, but are indispensable in every building, construction and real estate project that takes energy efficiency and the other sustainability criteria like economical, ecological, social, and cultural balances into account.

In this regard, you will learn a lot from our experts, coming from research labs and science institutions as well as from the practical areas of planning and implementation. You will also learn from your classmates and hopefully enjoy the international, interdisciplinary teamwork as well as Berlin’s urban and cosmopolitan atmosphere.



Prof. Julian Wékel
Academic Director

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Overview

The Building Sustainability Team

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Studying Management Methods for Energy Efficiency with The Experts

According to the German Advisory Council on Global Change, by 2050, the urban population alone will be larger than the current total world population. This will lead to considerable challenges for the planning and the construction sector, since roughly the same amount of infrastructure will be added in the next three decades as has been built since the beginning of industrialization. In addition, most of the existing infrastructure will have to be renewed in the same period. “For example, if the expansion of infrastructure has a CO₂ footprint that is similar to that of the current infrastructure of cement, steel and aluminum in industrialized countries, the construction of new infrastructures in developing countries and emerging economies alone could lead to around a third of the total available CO₂ budget if the temperature increase is to be limited to 1.5°C.”¹

In addition to the technical aspects regarding CO₂ saving solutions, strategic concepts for communication and cooperation are crucial for success in large-scale and structural important projects. Whereas building a house has become a manageable task, things become much more complicated when considering the urban environment and wider interests such as energy efficiency and other relevant factors of climate protection. The master program Building Sustainability focusses therefore not only on technical and economic perspectives but also aims at imparting basic knowledge in other relevant disciplines. This means that the scope of the program is both broad and specific at the same time. The combination of technology, management, and sustainability-related topics is therefore, a unique opportunity for young professionals to extend their skills and prepare for important planning and construction related team functions in this huge challenge of the 21st century.

Whereas the Building Sustainability program is new, there is already plentiful experience in conducting practice-orientated master programs on the EUREF campus. The first program started in October 2012, was taught in German, and focused on energy-efficient construction and operation of buildings. As a Master of Science, it was an interdisciplinary program with a very specific focus. It turned out, however, that this subject matter needs a broader scope. Two other Master programs – European and International Energy Law (Master of Business Law) and Energy Management (MBA) – also showed high international demand in the field of energy and sustainability. Therefore, current, and former students, teachers, and professionals re-designed the program and created Building Sustainability (MBA) with a schedule that focusses not only on engineers and architects but also on urban planners, economists, and project managers.

The idea is that sustainable project results can only be achieved in extensive cooperation of all stakeholders, considering economic, ecological, social, and cultural aspects. Managing and moderating such a cooperation is one of the major challenges of implementing sustainability in planning and building projects of all scales. The program aims therefore on enabling students to understand the complexity of sustainable planning and management processes and to develop solutions

¹ WBGU – German Advisory Council on Global Change (2016): Humanity on the move: Unlocking the transformative power of cities. Summary. Berlin: WBGU

accordingly. This will happen in modules with different approaches: some will teach facts and numbers, others will facilitate connections between different fields and the soft skills of mediating between them, and some are designed to apply these competences to practical projects.

Graduates will be able to moderate and manage complex projects in the construction, real estate, and planning sector. The program provides the knowledge and skills for assessing projects from technical, ecological, and economic perspectives and for creatively finding solutions to consider the varying stakeholders' interest, in teams or independently. Graduates will either be able to enter the labor market in both the private and public sectors or continue with postgraduate studies.



Third Semester

Orientation Week

Welcome the new students!

October 1st–5th 2018

01/10/18 Charlottenburg Tour, IT Bootcamp, etc.

02/10/18 EUREF ice breaker and paper chase

04/10/18 City and Libraries

05/10/18 Master Programs Opening Ceremony, Lichthof, 4pm

Module 08 Life Cycle Management

Prof. Dr.-Ing. Markus Krämer

Informations- und Kommunikationssysteme im Facility Management,

Hochschule für Technik und Wirtschaft Berlin (HTW)

www.htw-berlin.de/campus/



Aims and Scope Real Estate and Facility Management are significant in the global structural change from an industrial towards a service-orientated society. In this course, students learn relevant working methods and their theoretical basis (e.g. life cycle concepts, life cycle information management, service and facility management standards) together with an understanding of services and customer needs. Students are able to apply those management concepts and make decisions in terms of implementing a FM organization and its business processes according to the needs of building owners and users.

Schedule

- | | |
|----------------------|---|
| Fri. 19/10/18 | Introduction Life Cycle Management;
Standards in FM (e.g. DIN 15221)
Prof. Dr.-Ing. Nicole Riediger |
| Fri. 26/10/18 | Standards in FM (process, KPI);
Service Level Agreements
Prof. Dr.-Ing. Nicole Riediger |
| Wed. 31/10/18 | Building Information Management 1; BPMN; Project Work (part 1: company)
Prof. Dr.-Ing. Markus Krämer |
| Wed. 07/11/18 | Building Information Management 2; Project Work (part 2: modeling)
Prof. Dr.-Ing. Markus Krämer |

- Wed. 21/11/18** Presentation G2Plus; Project Work (part 3)
Schönebeck / Prof. Dr.-ing. Markus Krämer
- Fri. 30/11/18** Balanced Scorecard; Interims Presentation; Projekt Work (part 4)
Prof. Dr.-Ing. Markus Krämer
- Fri. 14/12/18** Benchmarking (guest talk, REMO)
Prof. Dr.-Ing. Markus Krämer
- Fri. 11/01/19** Project Work (consultation)
Prof. Dr.-Ing. Markus Krämer
- Thu. 31/01/19** Project Work (final consultations)
Prof. Dr.-Ing. Markus Krämer
- Day. 15/02/19** Project Work (defence)
Prof. Dr.-Ing. Markus Krämer

Literature

[1]

Module 09 B: Innovation and Technology Management - Part II

Prof. Dr. Jan Kratzer

Chair of Entrepreneurship and Innovation Management

School of Economics and Management

Centre for Entrepreneurship TU Berlin

www.entrepreneurship.tu-berlin.de



Aims and Scope The module Technology and Innovation Management is an interdisciplinary project. Students learn about innovation and technology management in theory and practice. First, the course provides theoretical input sessions about innovation management, technology management, project management, team building, and more. Second, the students will apply this knowledge to a real project and work together with industrial partners. They will develop a business model and prototype in (interdisciplinary) teams based on a given problem. Finally, the teams hand in a written project report and give an oral presentation on their prototype.

Schedule

- | | |
|----------------------|--|
| Thu. 08/11/18 | Innovation and Technology Management, Part II 1
Prof. Dr. Jan Kratzer
Dr. Maren Borkert
Julian Alexandrakis |
| Fri. 09/11/18 | Innovation and Technology Management, Part II 2
Prof. Dr. Jan Kratzer
Dr. Maren Borkert
Julian Alexandrakis |
| Thu. 22/11/18 | Innovation and Technology Management, Part II 3
Prof. Dr. Jan Kratzer
Dr. Maren Borkert
Julian Alexandrakis |

Fri. 23/11/19 Innovation and Technology Management, Part II 4
Prof. Dr. Jan Kratzer
Dr. Maren Borkert
Julian Alexandrakis

Thu. 06/12/18 Innovation and Technology Management, Part II 5
Prof. Dr. Jan Kratzer
Dr. Maren Borkert
Julian Alexandrakis

Fri. 07/12/18 Innovation and Technology Management, Part II 6
Prof. Dr. Jan Kratzer
Dr. Maren Borkert
Julian Alexandrakis

Literature

[1]

Module 09C Integration of Renewable Energies

Dipl.-Ing. Martin Schnauss

Renewables academy

www.renac.de



Aims and Scope 50% of the world's energy demand accounts for heat. This course considers the supply of private public and commercial buildings from the demand side. In doing so, different supply models with renewable energy technologies are considered and compared, and solar thermal technology is brought into focus. An equally simple and highly efficient technology that is internationally diversified, but widely underestimated and neglected.

The module looks at different technologies, storage options even seasonal storage concepts and leads through all phases of project development, from dimensioning to implementation and economic analysis. Quality assurance, standards maintenance and operation are also important issues in this market, so the reference to the practice is made by sight visits.

The graduates are introduced to the technology of solar thermal systems and gain the ability to develop system concepts adapted to the building environment, dimension components and optimize operating parameters.

Schedule

Tue. 30/10/18 Integration of Renewable Energies 1
Dipl.-Ing. Martin Schnauss

Tue. 13/11/18 Integration of Renewable Energies 2
Dipl.-Ing. Martin Schnauss

Tue. 20/11/18 Integration of Renewable Energies 3
Dipl.-Ing. Martin Schnauss

Tue. 04/12/18 Integration of Renewable Energies 4
Dipl.-Ing. Martin Schnauss

Tue. 11/12/18 Integration of Renewable Energies 5
Dipl.-Ing. Martin Schnauss

Tue. 18/12/18 Integration of Renewable Energies 6
Dipl.-Ing. Martin Schnauss

Tue. 08/01/19 Integration of Renewable Energies 7
Dipl.-Ing. Martin Schnauss

Tue. 15/01/19 Integration of Renewable Energies 8
Dipl.-Ing. Martin Schnauss

Tue. 22/01/19 Integration of Renewable Energies 8
Dipl.-Ing. Martin Schnauss

Literature

[1]

Module 9 Master Thesis

Supervisors Individual.

Aims and Scope Students demonstrate with the Master Thesis to be capable to address a problem from their study program independently, based on scientific methods, within a specific deadline. Once registered for the thesis, students have four months to conclude.

Schedule To start the master thesis, 62 CP must have been gathered; this equals successful completion of all mandatory modules M1-M7. Technically, the earliest starting date is hence six weeks after the last exam; this year, that is Sept. 1st 2018. The thesis can be postponed but should be completed in the third term.

Students prepare a synopsis / a plan prior to registering.

Contents Individual.

Form Fifty pages, plus introduction and annex(es). In English. Scientific standards prerequisite. More detailed formal requirements to be announced.

Wed. 18/7/18 Tutorial: Preparation for Master Thesis and Term III
Xxxxx Xxxxxxx

Graduation Ceremony MBA Building Sustainability 2017-19

July 19th 2019 (tbc)

Details to be announced

Alumni Program

With your degree, you become part of the alumni network. Alumni receive invitations to participate in the further extension of the academic program, and to events held on the campus and within the network.

As the program rolls over, you are cordially invited to participate in the curricular and extracurricular events of the following academic year(s)

Faculty

Lecturers & Tutors

Prof. Julian Wékel

Academic Director

Building Sustainability – Management Methods for Energy Efficiency MBA

master-in-energy.com



Dr. Maren BORKERT

Research Associate

Technische Universität Berlin

<http://www.entrepreneurship.tu-berlin.de/>



Julian ALEXANDRAKS

Research Associate

Technische Universität Berlin

www.entrepreneurship.tu-berlin.de



Prof. Dr. Jan KRATZER

Entrepreneurship and Innovation Management

Technische Universität Berlin

CfE Center for Entrepreneurship at TU Berlin

<https://www.entrepreneurship.tu-berlin.de/>



Zsuzsa Besenyői, M.Sc.

Hochschule für Technik und Wirtschaft Berlin (HTW Berlin)

www.htw-berlin.de/campus/



Prof. Dr.-Ing. M. Norbert Fisch

Technische Universität Braunschweig

www.tu-braunschweig.de/igs/institut



Dipl.-Ing. Daniel Freund

Wissenschaftlicher Mitarbeiter

Distributed Artificial Intelligence Labor

Technische Universität Berlin

www.dai-labor.de



Prof. Dr.-Ing. Andreas Holm

Laborleiter Labor für Bauphysik

Forschungsinstitut für Wärmeschutz e.V. München

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Prof. Dr.-Ing. Markus Krämer

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Prof. Dr.-Ing. Nicole Riediger

Construction and Real Estate Management – International
Project and Facility Management

HTW Berlin

www.htw-berlin.de/campus/



Dipl.-Ing. | M.Eng. Christoph Vornhusen

Founder/ owner

Bencon Energies

www.benconenergies.com



Dr.-Ing. Carolin Schröder

Wissenschaftliche Mitarbeiterin

Technische Universität Berlin

Zentrum Technik und Gesellschaft

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Prof. Dr. Tetyana Morozyuk

Technische Universität Berlin

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Thorsten Schulte

Branch Manager, Berlin

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Dipl.-Ing. Martin Schnauss

Renewables academy

www.renac.de



Bettina Brockmann, M.A.

Lecturer

San José State University, California, US

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Sarah Elsheikh, M.Sc.

Field Protection Assistant

Danish Refugee Council / Dansk Flygtningehjælp
American University in Cairo (AUC)

www.drc.ngo/

