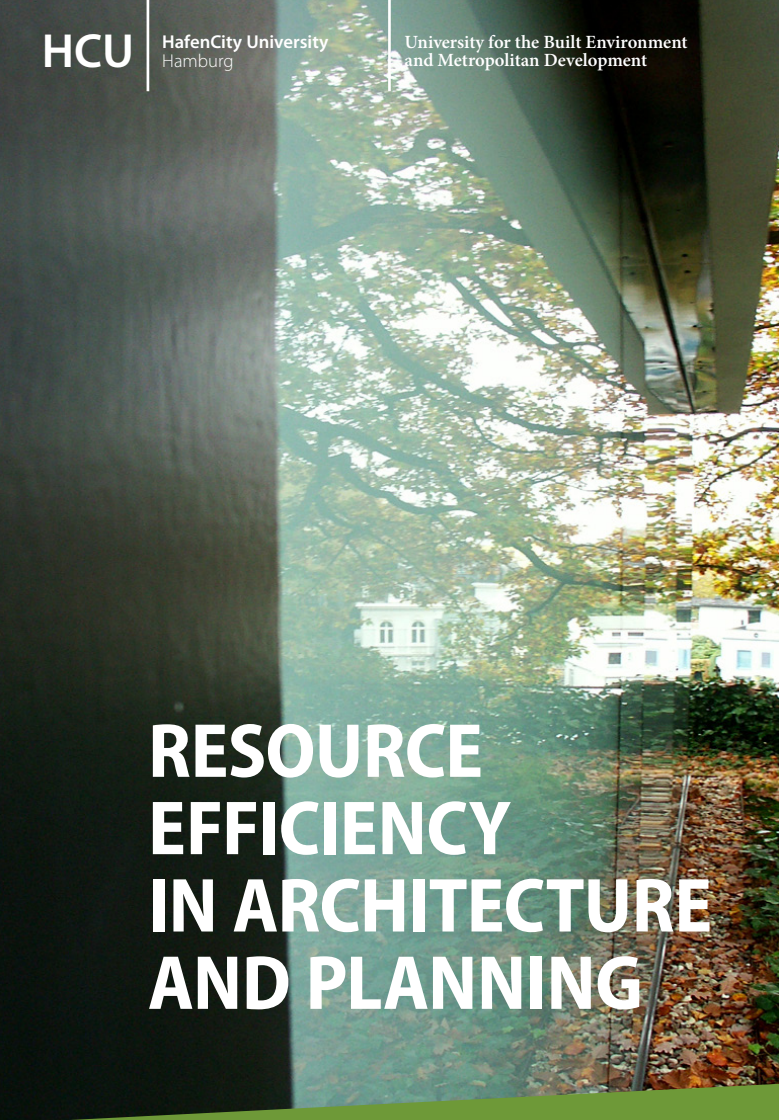
HCU | HafenCity University Hamburg

University for the Built Environment and Metropolitan Development



RESOURCE EFFICIENCY IN ARCHITECTURE AND PLANNING

The International Master of Science Degree Programme

The Master's degree programme at HafenCity University in Hamburg since October 2009.

This is an exciting opportunity for those who aspire to extend their knowledge and understanding of innovative technologies which can contribute to a more sustainable urban built environment.

Our Current World

- Over half of the world's population lives in cities, with the share growing steadily.
- The built environment is responsible for the use of considerable energy and material resources.
- Urban buildings and infrastructure present a tremendous opportunity for conservation and efficiency improvements.

REAP

Implements innovative frameworks and technologies for sustainable urban environments.

Why?

The Challenge: Using Resources More Efficiently

Urban regions are experiencing a substantial restructuring — fast growth in some parts of the world, centrifugal movements away from old centres in others. This provides a wide window of opportunity for promoting urban sustainability.

The Construction, renovation, operation and demolition of buildings accounts for the largest share of European energy and material consumption. Globally, this relation is similar or even more pronounced.

The challenge is implementing what is already out there, utilising the local and global learning curves and overcoming habit, risk aversion, and the complex coordination requirements.

We Take Action

The Master of Science degree programme "Resource Efficiency in Architecture and Planning" aims to enable participants to promote sustainable urban development in different geographical and cultural settings.

How?

Aims and Objectives of the M.Sc. REAP Degree Programme

Its main emphasis lies on technology for the provision of urban and building services, yet it also investigates the socio-economic context in which these services are provided and managed.

The programme

» provides an overview of the complex relationships between building and urban services technology (i.e., building construction and renovation, energy and water supply, waste and wastewater management) and the environment (i.e., resources and space consumption, impacts on environmental media and ecosystems)

» gives insight into patterns of user demand and behaviour and how they affect the technology-environment interaction

- imparts knowledge of resource efficient technologies, e.g. energy generation from renewable sources, as well as underlying principles, such as source separation and the closing of material cycles, demand side management, decentralised, modularised service provision, etc.
- reviews experience with and conveys ideas for different forms of legal and economic organisation of planning, construction and urban services provision
- teaches research methods and techniques for planning and decision support

With this programme, the HCU targets persons from all over the world, with a wide range of academic backgrounds and work experience, sharing an interest in technology and society and a concern for urban life. As such, the programme does not require expertise in architecture or engineering; nor does it award a professional degree in architecture, urban planning or civil engineering.

Our Starting Point for Change

- complex relationships between building and urban services technology
- user demand and behaviour and how they affect the technology-environment interaction
- resource efficient technologies
- experiences with and ideas for different forms of legal and economic organisation
- research methods and techniques for planning and decision support.

About the HCU

The HCU focuses on the built environment and metropolitan development. It was founded by the Free and Hanseatic City of Hamburg in January 2006.

We are specialised to address the current and future issues facing our towns and cities. Our disciplinary and professional excellence is based on the four disciplines at the HCU which cover the spectrum from 'house to city': Architecture, Civil Engineering, Geomatics and Urban Planning.

Where?

Come to Hamburg and be inspired!

The HCU works in a trans- and interdisciplinary way. It confronts traditional disciplines with radically different approaches and ways of thinking.

The HCU currently offers undergraduate and postgraduate degree programmes from Bachelor to PhD in architecture, civil engineering, geomatics, metropolitan culture, urban design and urban planning. Through its new interdisciplinary organisational structure, the HCU brings together different approaches to research, teaching and practice as they concern the urban environment.

It is therefore the ideal location for the Master's programme in Resource Efficiency in Architecture and Planning (REAP).

The HCU Master Programme Resource Efficiency in Architecture and Planning (REAP)

All you need to know to start

01 | Graduate Destinations

Possible fields of work for alumni of the M.Sc. REAP programme include:

- national, regional and local governments;
- national and international non-governmental organisations (NGOs);
- consulting and finance;
- utilities and technology producers;
- real estate development and the housing industry;
- education and research institutions.

Suitable jobs might be:

- specialist consultants in architectural or urban design and
- engineering firms, in local, national and international organisations and the planning departments of city and regional councils;
- resource managers for larger commercial firms and international aid organisations;
- specialists for regeneration and conversion projects in urban industrial quarters;
- managers of energy and environment related infrastructure systems and networks;
- policy advisers and analysts in the development of sustainable regulations and bylaws for infrastructure, building and urban planning projects;
- economic advisers for the determination of the financial viability of sustainable design projects; or
- legal advisers for corporations pursuing sustainable growth and development strategies.

02 | Faculty

The HCU faculty members come from very different disciplinary backgrounds, e.g. architecture, urban planning, landscape planning, civil engineering, physics, law and economics. The 'Resource Efficiency in Architecture and Planning' (REAP) faculty aims to advance research and education in resource efficient technology as well as its application and management in the building and urban services sector.

Current faculty members contributing to the Master of Science REAP are:

- Prof. Peter Braun, Building Engineering and Solar Building Design
- Prof. Wolfgang Dickhaut, Environmental Planning, Water Management, River Basin Development and Technology Evaluation

- Prof. Udo Dietrich, Building Physics, Energy-Optimised Building, Passive Air Conditioning
- Prof. Kosta Mathéy, INternational Development and Project Management
- Prof. Irene Peters, Technical Urban Infrastructure Systems, Economics of Urban Services, Policy Evaluation
- Prof. Dr. Ingo Weidlich Infrastuctural Engineering
- Prof. Martin Wickel, Planning and Environmental Law
- Cathrin Zengerling, International, European and National Environmental Law, Land Use Planning, Public Participation
- Temporary teaching staff: Prof. Kerstin Kuchta, Anke Jurleit, Prof. Dr.-Ing. Jochen Schiewe, Anna Strastil, Dr. Wolfram Trinius, Maya Donelson, Gionatan Vignola, Maria Grajcar

03 | Content and Duration

REAP covers the following areas:

- Sustainability
- Water, Material and Energy Cycles in the city
- Urban Noise and Traffic
- Resource efficient urban technologies and infrastructure
- Economics and administration of buildings and urban services
- Legal and policy instruments
- Urban Planning on different scales: building

» (1:10 - 1:100), neigbourhood (1:500-1: 5000) and city (1:10000 - 1:100000) scale and regarding the specific geographical and cultural context

» Skills development: dimensioning, perception, assessment and decision making in the field of sustainable resource technologies

» Research methods and decision support techniques

REAP is not:

» an architectural design course

» focused on a single discipline — it is interdisciplinary and follows an integrative and multidimensional planning approach

The Master's programme consists of 17 study modules taught over 2 academic years.

M.Sc. (REAP) Year 1

Semester 1	Semester 2
Project I (5 CP)	Project II (10 CP)
Methods of Integrative and Urban Planning (5 CP)	
Facets of Sustainability (5 CP)	Urban Material Cycles (5 CP)
Legal and Economic Instruments (5 CP)	Urban Energy Flows (5 CP)
Research Methods and Statistics (5 CP)	Urban Water Cycles (5 CP)
Project Management (5 CP)	Q-Studies (5 CP)

M.Sc. (REAP) Year 2

Semester 3

Semester 4

Project III
(10 CP)

Plus 2 Modules from each block

Block 1: Resources, Technologies and Environment	Block 2: Resources, Institutions and Instruments
Climate Responsive Architecture and Planning (5 CP)	Economics and Planning of Technical Urban Infrastructure Systems (5 CP)
Technologies for Sustainable Water Resource Management (5 CP)	Decision Support and Project Evaluation (5 CP)
Technologies forSustainable Material Cycles (5 CP)	Material Flow Analysis and Life Cycle Assessment (5 CP)

or instead of one Module

General Elective
(5 CP)

Thesis Project
(30 CP)

Structure of the Degree Programme. In each Semester, students enrol for 30 credit points (CP). In Semester 3, students select two of the 5 CP modules from each of the Blocks 1 and 2 (or one General Elective instead of one of the Block modules) for a total of 20 CP in addition to the 10 CP from Project III. General Electives are chosen from any other offering of the HCU or other Universities.

04 | Study Methods

Lectures and seminars support the central project work, i.e. real-time, real-world case studies, in which students, with help and guidance from faculty, develop recommendations and solutions for applied tasks. This could be: designing a building-based, integrated supply-treatment system for water and wastewater; working out a plan for the environmentally sound retrofit of a housing block; devising an incentive-based scheme for refuse management or recycling of building materials. Project work is inspired by the research activities taking place at the university and can in turn contribute to this research. Project-based work also gives students experience with the analysis of, planning and concept development for real world problems. For this reason, it is clearly an advantage when students have relevant work experience from which they can draw for their project work. Experience with scientific concepts and an interest in the physical world is also useful.

Q-Studies

Q-Studies consists of courses of more general interest which are not directly part of the disciplinary field for which the student is enrolled. These may include offerings in philosophy, ethics, languages, culture, etc. and provide a different approach to thought processes and learning methods than normally found in the student's discipline.

05 | Entry Requirements

University entrance qualification

The Master of Science in Resource Efficiency in Architecture and Planning is normally open to university graduates with relevant work experience in related fields and a demonstrated strong interest in interdisciplinary approaches to environmental design and technology.

The minimum admission requirements are

- a Bachelor's degree or recognised equivalent from an accredited institution in Architecture, Urban Planning, Geography, Landscape Architecture, Civil Engineering, Law, Political Science, Business and Administration, Economics, Humanities or others with focus on REAP related fields;
- sufficient undergraduate training to do postgraduate work in REAP;
- relevant work experience of at least 6 months (this may have been gained after graduation or while being enrolled at the university);
- evidence of English language proficiency;
- demonstrated strong interest as well as personal aims and objectives for the study in the Master of Science REAP programme.

Satisfying these standards, however, does not necessarily guarantee your admission, since the number of qualified applicants may typically exceeds the number of places available.

Language requirements

The courses in the Master of Science in Resource Efficiency in Architecture and Planning are taught in English. To study in this programme, you should be able to:

- write grammatically correct and develop ideas clearly and accurately. Essays or reports are the main type of written work for in-term assessment.
- read with understanding, so you can find relevant information and analyse an argument without special guidance.
- listen carefully in lectures and seminars to pick up key points, speak clearly so you can contribute to a discussion or present ideas in class.

Applicants from countries in which the official language is not English are required to submit official evidence of English language proficiency. This may be:

- TOEFL (Test of English as a Foreign Language
- IELTS (International English Language Testing System)
- CAE (Cambridge Certificate of Advanced English)

» CPE (Certificate of Proficiency in English)

» TELC (European Language Certificate)

If your previous studies were in English and at least 4 semesters long, this is considered an equivalent to an English test.

More information can be found here:

www.hcu-hamubrg.de/en/student-service/for-applicants

06 | Application Process

Applicants with a non-German university degree

Applicants with a non-German university degree have to apply via Uni-Assist (www.uni-assist.de). Uni-Assist is a certification office founded to make the application procedure for international student applicants easier and to support German universities in the selection of foreign students.

If you intend to apply for the REAP programme, you will find detailed information about the application procedure on this website: **https://www.hcu-hamburg.de/en/student-services/for-applicants/international-applicants/application-master-degree/**

Additonally you have to fill in your personal details in the HCU online application system "ahoi", which is available between June 1st and July 1st each year.

Deadline for application

The application which can be done between June 1st and July 1st, is for the Winter semesterwhich begins mid October.

Please note: You can apply via Uni-Assist throughout the whole year. Due to the processing time, we recommend you, not to apply later than May 15th each year. In this case, Uni-Assist has sufficient time to check your application documents regarding missing documents or mistakes and will inform you about that. In the peak months of June and July, Uni-Assist cannot guarantee that information regarding missing documents will reach you in time.

Applicants with a German university degree

Applicants with a German university degree can directly apply to the HafenCity University via our online application system.

Deadline for application

The online application system „ahoi" for the winter semester is available between June 1st and July 1st each year. You can access to the online system by following this link: **http://www.hcu-hamburg.de**

07 | Further Information

More information about the Master of Science degree programme "Resource Efficiency in Architecture and Planning" can be obtained under **http://www.hcu-hamburg.de/en/master/reap/**

Dean of the REAP Master of Science degree programme: Prof. Dr. Martin Wickel LLM

In case of question, please feel free to contact thecoordinator of the REAP Master of Science degree programme:

e-mail: **reap-master@hcu-hamburg.de**