

# “Monitoring – Department of Physics” model urban ecology project

Various innovative measures were implemented as part of the construction of the Department of Physics. The concept of decentralised rainwater management, greening of buildings and building cooling as interlinked elements of an overall ecological concept formed the focus of project monitoring.

The building that houses the institute does not have a connection to the rainwater drainage pipe. A portion of the roof surfaces is extensively planted with vegetation and delays the run-off of rainwater. Rainwater is collected in five cisterns in two yards and used to water the facade greening and to produce an evaporative cooling effect in air-conditioning systems. In the case of heavy rainfall, the excess rainwater in the inner courtyard is guided into a pond and evaporated or allowed to percolate. Percolation takes place through the constructed wetland zone.

The aim of project monitoring is the development of recommendations for the optimisation and economically viable use of systems with a focus on innovative and efficient management of the resources of water and energy, the optimisation of greening of buildings, and the reduction of operating costs. Practically relevant and application-oriented results have been and are being documented and published as an aid for the planning, construction, operation and maintenance of future projects.

## Project details

**Location:** Berlin-Adlershof, Newtonstrasse 15

**Total area:** 9,700 m<sup>2</sup>

**Site area:** 19,000 m<sup>2</sup>

**User:** Humboldt University Berlin

**Project history:** Result of an architectural competition in 1997; start of construction in 1999, architects: Georg Augustin, Ute Frank, Berlin

**Client:** State of Berlin, with the financial participation of the German Federal Government within the framework of the common task of constructing university buildings

**Implementation of construction:** Senate Department for Urban Development, Section V

**Completion/handover:** 2003

Prize-winner in the Berlin Architecture Award 2003

## Scientific accompaniment and monitoring

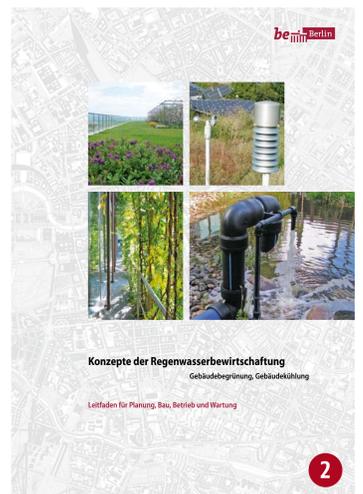
**From 2001:** Focus on concept of rainwater management and greening of buildings on behalf of the Senate Department for Urban Development of Berlin, Ecological Urban Development area, State Programme for Model Urban Ecology Projects

**From 2010:** Continuation of the project by the Technical University of Berlin within the framework of the “EnEff:Stadt” support initiative, funded by the German Federal Ministry of Economics and Technology within the focal area of energy efficiency for the measures carried out

**2013 to 2016:** Project monitoring within the framework of the “Research for Sustainable Development” support programme, German Federal Ministry of Education and Research’s “Intelligent and multi-functional infrastructure systems for sustainable water supply and waste water disposal” support measure, project: KURAS “Concepts for urban rainwater management and waste water systems”



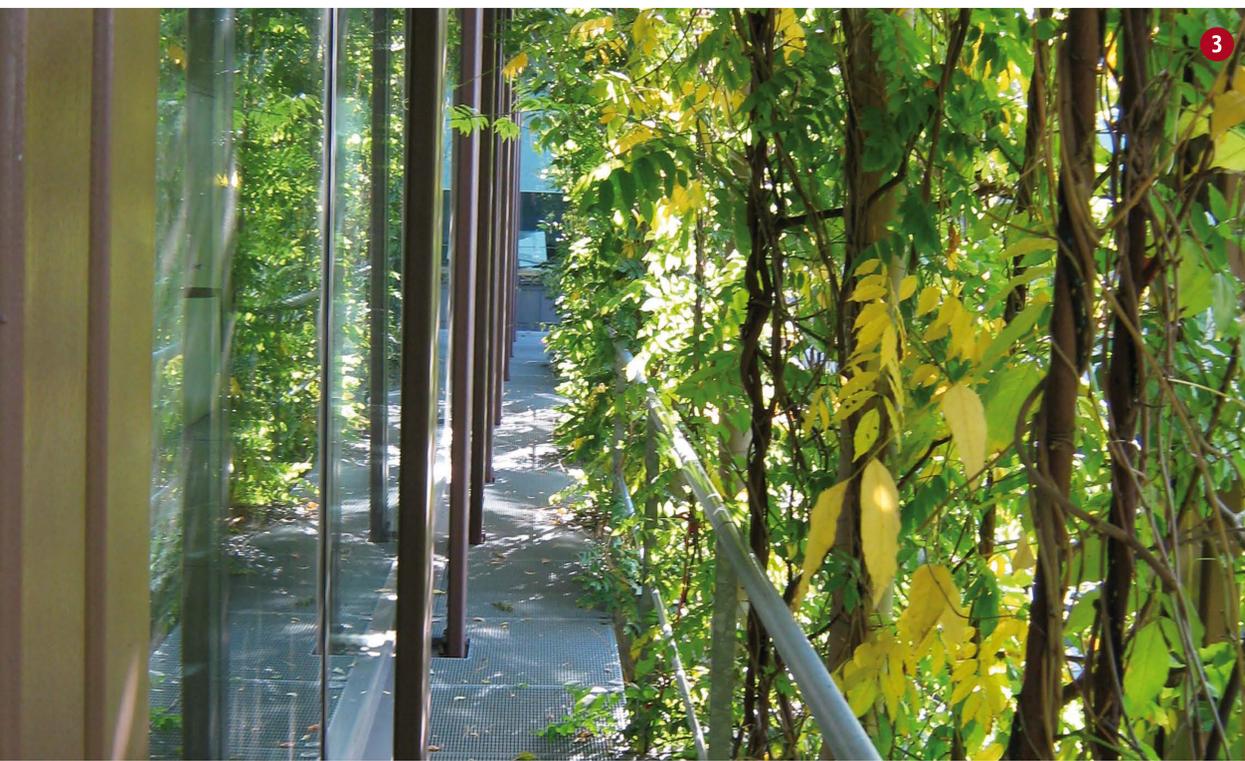
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1 Piping of excess rainwater into a pond in the southern courtyard in the case of heavy rainfall

2 Published project results

3 450 climbing plants are growing in 150 tubs positioned at the facade and in the ground on the ground floor



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**Scientific accompaniment:**  
by the Technical University of Berlin on behalf of the Senate Department for Urban Development  
Institute of Architecture  
Dipl.-Ing. Marco Schmidt;  
Neubrandenburg University of Applied Sciences  
Department of Landscape Ecology, Vegetation Studies  
Prof. Dr. Manfred Köhler

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> Department of Physics  
in Berlin-Adlershof