

KIT Coordinates Helmholtz Urban Research Initiative

Seven Helmholtz Centers Pool Urban Research Expertise – Competences in Engineering, Natural and Social Sciences for Future-oriented Urban Development



Research into cities as holistic systems is the basis of future-oriented urban development. (Photo: Stefan Norra/KIT)

Given demographic change, digitization, and global warming, cities have to invent themselves anew. Europe has realized that transformation into the city of the future can only be achieved with an excellent scientific basis. For this reason, numerous research policy initiatives were launched. In many cases, however, issue-driven individual solutions are in the focus, above all technological innovations. Seven Helmholtz centers have now decided to pursue a new approach: They pool their manifold competences in engineering, natural and social sciences in the Helmholtz Urban Research Initiative that is coordinated by Karlsruhe Institute of Technology (KIT). Their goal: Development of comprehensive solution options by concerted research that considers ALL areas of urban life.

The earliest cities of mankind are legendary places with well-sounding names – Jericho, Ur, Babylon. Since these first experiments of urban life, these exotic islands in a sparsely populated world of hunters, gatherers, and farmers, however, human life has changed massively. Today, urban life no longer is the exception, but

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the rule. More than half of the world's population is living in cities, with increasing tendency. Cities are no static spaces, but constantly develop further and have to do so, as the pressure on urban life is growing: Cities are facing numerous challenges – climate change, demographic change, digitization, environmental pollution, resources scarcity, and social inequality.

To master the transformation of cities into resource-efficient and resilient places of human life of high quality, complex development strategies are required. Many European states, including Germany, have long recognized that planning of these strategies requires an excellent scientific basis. The federal government launched a number of research policy initiatives, such as The City of the Future Strategic Research and Innovation Agenda developed by the City of the Future National Platform, and declared the year 2015 the science year "City of the Future".

"Future-oriented urban development does not only require new technologies, but holistic solutions. We see this again and again in discussions with representatives of municipalities and municipal associations," says Karl-Friedrich Ziegahn. He heads the "Natural and Built Environment" Division of KIT and represents the Helmholtz Association in the stakeholders forum of the City of the Future National Platform. "There rather is a high need for scientific-conceptual work. Like no other organization in Germany, the Helmholtz Association can provide the necessary answers. By combining its competences in engineering, natural and social sciences and its research resources, understanding of the city and the underlying procedures as a holistic system can be shifted into the center of urban development. Through a combination of fundamental and applied research, the Helmholtz Association can push long-term development of scientific, technological, and social innovations and accompany their implementation in societal practice. To do this, seven Helmholtz centers have now joined forces.

Now, a central planning phase of one year duration starts. It is coordinated by Karl-Friedrich Ziegahn of KIT. The Helmholtz Association will grant EUR 249,000 from the President's Initiative and Networking Fund for the project partners to develop an integrated Helmholtz urban research concept. It will consist of elements of natural sciences, engineering, health sciences, and social sciences as well as of architecture and urban planning, with the strengths of the centers involved being optimally used.

"Central objective of the Helmholtz Urban Research Initiative is the development of scientific and practice-oriented solution options to

ensure viability of our cities,” Karl-Friedrich Ziegahn explains. “We want to define objectives for a more sustainable urban development. In addition, new technologies, recommendations for actions, and solutions shall be developed and implemented together with the local actors in the form of field tests and demonstration sites.”

The following Helmholtz centers cooperate under the Helmholtz Urban Research Initiative:

Karlsruhe Institute of Technology (KIT)

German Aerospace Center (DLR)

Forschungszentrum Jülich (FZJ)

Helmholtz Center for Environmental Research – UFZ

Helmholtz Centre Potsdam – German Research Centre for Geosciences (GFZ)

Helmholtz Zentrum Berlin für Materialien und Energie (HZB, Helmholtz Center Berlin for Materials and Energy)

Helmholtz Zentrum München – German Research Center for Environmental Health (HMGU)

KIT possesses extensive scientific competences for research into, development, and integrated planning of the city of the future in all major aspects. Scientists of five KIT Centers – Climate and Environment; Energy; Mobility Systems; Humans and Technology; Informations, Systems, Technologies – work on studies and the sustainable design of urban spaces from their disciplines’ perspective and in an inter- and transdisciplinary manner.

Karlsruhe Institute of Technology (KIT) is a public corporation pursuing the tasks of a Baden-Wuerttemberg state university and of a national research center of the Helmholtz Association. The KIT mission combines the three core tasks of research, higher education, and innovation. With about 9,400 employees and 24,500 students, KIT is one of the big institutions of research and higher education in natural sciences and engineering in Europe.

Since 2010, the KIT has been certified as a family-friendly university.

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