



Vision – Building Tomorrow, Living the Future

NEST is a dynamic, modular research and demonstration platform for advanced and innovative building technologies in the heart of the Empa-Eawag campus. As a «future living and working lab» it allows novel materials and components and innovative systems to be tested, demonstrated and optimized under real-world conditions: NEST will be used as guest house and experimental office space.

Concept – «Plug-and-Play»

NEST consists of a central «backbone» for the load-bearing structure and for access to services and media and a basic grid to accommodate about 50 exchangeable living and office modules. Due to its highly flexible design which allows for the exchange of complete living/working units or even entire floors in a «plug-and-play» mode, NEST will constantly change face and tackle the «hot» topics of the time.

Operation – A Beacon of Innovation in the Construction Sector

Emerging issues will be evaluated in close collaboration with the building industry and calls will be launched for each research topic under investigation to select the most «cutting edge» projects from both academia and industry on an international level. Each of these «incarnations» of NEST will go along with a series of conferences, seminars, exhibitions, continuing education courses and lectures.

Network – A Unique Joint Initiative

As a collective research project of the ETH Domain, NEST is supported by Empa, Eawag, ETH Zurich and EPF Lausanne. The partner institutions form an interdisciplinary network with research groups from materials science, engineering, architecture and the social sciences. Of note, the platform will be open to partners from industry to help them develop novel technologies and systems.



«What thrills me about this joint initiative is the unique opportunity it offers to our partners from industry to test, evaluate and optimize their innovations for future living and working concepts in a real-world setting. It is really a «one of its kind» platform for development and technology transfer in the building sector.»

Gian-Luca Bona, Director Empa



«With NEST, the institutions of the ETH Domain join forces to bring together their smartest and brightest in the area of materials science, building technologies and systems integration. We do not aim at developing a single innovation here or there – we want to make real progress in the realm of sustainable buildings.»

Patrik Aebischer, President EPFL



«In the context of increasing urbanization, population growth, and climate change, new approaches to urban water management are needed that link resource conservation with reuse and recovery for water, energy and nutrients and, at the same time, avoid long-term investment in inflexible infrastructure. NEST provides a unique platform to test innovative on-site technologies designed for local as well as global markets.»

Janet Hering, Director Eawag



«NEST will allow us to develop energy-efficient, CO₂-neutral buildings offering a high level of comfort and convenience to its users. This project fits well into the Sustainable Building Initiative of ETH Zurich.»

Ralph Eichler, President ETH Zürich

NEST – Showcase for Cleantech in Construction and Building Technologies

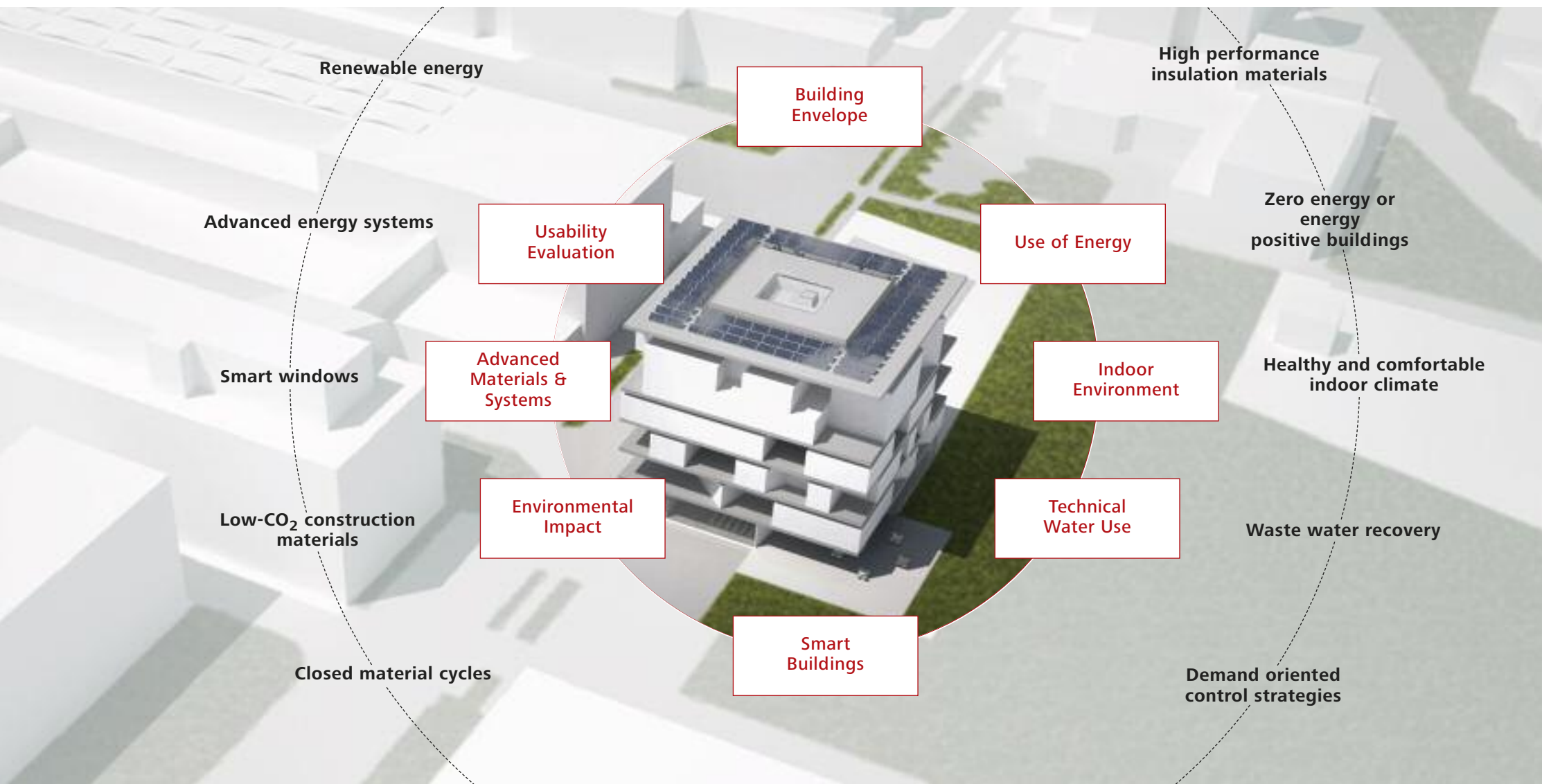


Partners



Design study by Gramazio & Kohler, Zurich

NEST – A Holistic, Dynamic and Flexible Research Platform for Sustainable Construction



The Cleantech Dimension

The **environmental footprint** of mankind is already huge and will become even bigger with global population growth and the economic success in developing countries. The construction sector is a major driver for this trend: Buildings consume about 50% of the world's total energy supply and are responsible for 40% of global greenhouse gas emissions, to name just two figures.

Thus, adopting **Cleantech** in the building and construction sector will really make an impact. A number of ambitious goals are within reach but need to be demonstrated: no more fossil fuels for heating and cooling of buildings, instead a complete switch to renewables; an increased use of low-CO₂ construction materials; closed material cycles and many more.

Embracing a Cleantech strategy will help companies in the construction sector to profit from a strong domestic market and to open up opportunities for global export. It is estimated that the **global market volume** of Cleantech will top CHF 3'300 billions by 2020, and it will create **thousands of jobs** for decades in Switzerland alone.

NEST will accelerate sustainable technology development and demonstrate that Cleantech will foster innovation for sustainable buildings and for the benefit of their users. They will enjoy improved comfort and convenience as well as increased productivity – with a drastically reduced environmental footprint.