SMART AND SUSTAINABLE UNIVERSITY CAMPUSES 2030

APPLYING SICENCE IN HOUSES OF SCIENCE

Time: 29th of September, 13:00 – 16:00

Location: D3, Lindstedtsvägen 9, Stockholm, Sweden
or via Zoom: https://kth-se.zoom.us/j/69604674021

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SMART AND SUSTAINABLE UNIVERSITY CAMPUSES 2030 CHALLENGE

Introduction

There is a wide array of challenges toward the sustainability of modern civilization; climate change, overconsumption, resource depletion, air and water pollution, and land utilization are just a sample. The steady trend of populations moving into cities highlights the need for innovative solutions dedicated to the urban landscape. On the way towards smart and sustainable cities of the future, university campuses play a symbolic role in the society. They can act as a showcase demonstrating the capabilities of science, technology, and innovation in achieving the ambitious sustainability goals at the national and international levels. Universities can inspire the "city managers" and policy makers and depict the visionary image of the future cities through applying new technologies, innovative business models and coordinated policies in their own campuses.

Akademiska Hus (AH) is one of Sweden's largest property companies, and has the mission of building, developing, and managing properties for universities and colleges in Sweden. AH has properties all over Sweden, from Luleå in the north to Malmö in the south. Approximately 300,000 people study, perform research and work in AH properties every day.

KTH and Akademiska Hus have partnered to study energy systems in the major university campuses in Sweden and come up with a comprehensive plan including energy management measures to be taken. Project proposals are expected to have both short and long-term timelines with the final vision and transition fully executed by 2030, and supported by a complete urban energy system analysis for a 20-year life cycle.

KTH has used the project as the main project within the Energy Management course within an international MSc. level program. A team consisting of professors, senior researchers, and over 150 students works over 4 months on the project.

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The course – Energy Management

Course Name: Energy Management, International Master's Program
Duration: January – June 2023
Faculty: Hatef Madani, Associate Professor
Francisco Beltrán, PhD Candidate
Jaime Arias, Associate Professor
Nelson Sommerfeldt, Researcher
Davide Rolando, Researcher

Students were divided into groups of 7 and a total of 23 teams were created. The groups, as part of their course, have worked on different university campuses in Sweden and delivered specific recommendations on how to create smart and sustainable campuses by 2030.

The proposed solutions target optimal energy and resource efficiency through the integration of new technologies (energy, mobility, ICT), development of new business models, and new methodologies of urban governance. The explicit goal is not only to create true value for university campuses´ users, but also to showcase the possibilities for transformation to other districts in the city, as well as other similar districts in Europe and globally.

The study was conducted in two phases: the first phase, where the focus was on data collection, systems modelling, defining boundaries and KPIs, and the second phase, where students deep dived into engineering and economics to come out with the optimal solutions (Pareto frontiers) from both technical and economic perspectives.

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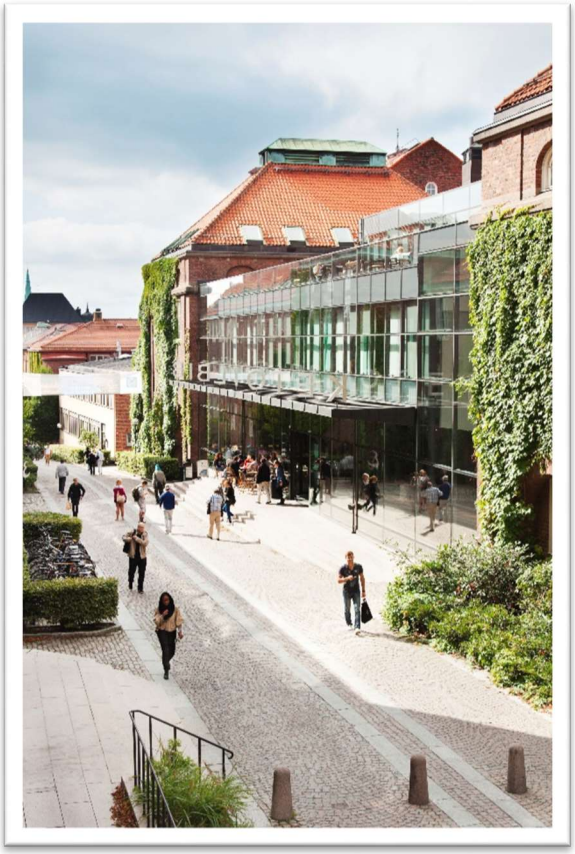
The challenge & competition



Students have been given a lucrative proposition. Apart from the chance of working with an actual project as part of their course, KTH and Akademiska Hus will reward the team with the best solution.

A summit dedicated to the Smart and Sustainable University Campuses 2030 Challenge arranged by KTH and Akademiska Hus will take place on 29th of September.

The Top 5 teams will present their final presentation in front of a jury.

The summit invites an international audience, representatives from the industry, academia and the government.

The winning team will be announced and awarded with a trip to the Smart City Expo World Congress to be held in Barcelona on 7th–9th November 2023. The runner up team will be awarded a trip for 3 of its members to present at the final workshop of the TIME Project at Polytechnic University of Valencia (UPV) on 13th–14th November 2023.

Chair of the Jury

Richard Pettersson
Area Manager Technology and Service at Akademiska Hus

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Jury

Andreas Bergensund
Head of Operational Technology Support at Akademiska Hus

Karin Ekdahl Wästberg
Director of Innovation at City of Stockholm

Catarina Naucler
Head of Energy Markets at Sweco

Dr. Yang Chen
Section Manager – Energy Management East at AFRY

Johan Blaus
Senior Advisor Collaboration and Partnerships at KTH

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Summit & award ceremony and agenda

Time: 29th of September, 13:00 – 16:00
Location: D3, Lindstedstvägen 9, Stockholm, Sweden

13:00–13:15	Agenda and Opening	**Mikael Lindström** Vice President, KTH **Andreas Kupenberg** Chief Technical Officer, Akademiska Hus
13:15–13:30	Energy Management in Cities	**Assoc. Prof. Hatef Madani** Course Examiner, KTH
13:30–15:00	Final Presentations	Top 5 Teams
15:00–15:30	Coffee Break and Poster Presentation	
15:45	Jury Decision and Award Announcement	**Richard Pettersson** Area Manager Technology and Service, Akademiska Hus

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