K T H

LIVE-IN LAB

Platform handling multiple Testbeds

KTH Live-In Lab has four different testbeds. All the testbeds are open for all who wish to conduct research and tests on products, services or processes within an area that has bearing on the real estate and construction sectors. Other topics like new business models, behavior and collaboration structures are also possible.

Testbed KTH

Testbed KTH is located in a building permit free residence area in one of Einar Mattsson's three plus-energy buildings at KTH Campus Valhallavägen. The premises are a total of 305 sqm distributed on approximately 120 sqm living space, 150 sqm service space and a project office of about 20kvm. Within Testbed KTH, different apartment configurations will be built on an annual basis, and KTH will rent these out to students. The testbed is extremely flexible in terms of geometry and installations. It is designed so as to be able to incorporate almost any product or service imaginable, and together with other solutions make one integrated real-life trial system

Testbed EM (Einar Mattsson)

Testbed EM consists of 305 student apartments and is located at KTH Campus Valhallavägen. The size of standard apartments is 19.5 sqm and all apartments have their own kitchen and shower room. Hot water and heat are generated via heat pumps connected to 12 boreholes with a total length of 3600m. The roof surfaces are covered by 1150 sqm of photovoltaic panels and there are a total of 64 sewage heat exchangers installed. The buildings are plus energy buildings.

Testbed AH (Akademinska Hus)

Testbed AH is the new Educational Building at KTH Campus Valhallavägen. The building is equipped with hundreds of sensors, measuring everything from relatively common values such as electricity, water, airflow and CO2, but also moisture content and movements in different parts of the building. The building is in operation and generates a great amount of data that can be used by KTH Live-In Lab

Testbed NCH (Nordic Choice Hotel)

Testbed NCH consists of 201 hotel rooms at Hotel Hobo in Brunkebergstorg in Stockholm, but also includes the possibility of accessing conference facilities and the restaurant. The building is flexibly structured for instrumentation depending on which research and development projects are desired. Thanks to the fact that the building is operated as a hotel and thus has a high rate of tenant turnover, Testbed NCH enables a high test frequency.

Platform handling multiple testbeds

KTH Live-In Lab is a platform handling multiple testbeds for research and development within the real estate and construction sectors. The multidisciplinary nature of buildings and the coming digitalization of the built environment is challenging for both the industry and academia. KTH Live-In Lab is designed to facilitate knowledge sharing between researchers and industry, being the link between research groups, facilitating contacts and helping arrange meetings between different research fields.

Purpose

The Purpose of KTH Live-In Lab is to reduce the lead times between test/research results and market introduction. Through increased innovation, KTH Live-In Lab contributes to accelerate the transition to tomorrows more sustainable and resource-efficient buildings. KTH Live-In Lab is also a unique node for collaboration between industry and academia.

Goal

The Goal of KTH Live-In Lab is to promote smart and sustainable buildings by accelerating the rate of introduction of new competitive product and services for the real estate and construction sectors.

More info on our homepage

www.liveinlab.kth.se

K T H

LIVE-IN LAB

World class test infrastructure

Background

Sweden's population is growing, and as a result, plenty more buildings need to be built. But the question is - how do we make sure that these buildings are constructed in a smart and sustainable way? How do we convince decision-makers at ever level – from politicians and officials, to projectdevelopers and entrepreneurs – to invest in new resource-efficient technology, rather than options that will lead to a waste of resources?

In order to enable this change, and to fulfil the environmental and energy goals, it is crucial for us to demonstrate - that new technology actually works!
And that installing it is economically viable. In order to do that, we need to test the technology within current systems - with real users in real buildings. New technology is already being tested in ordinary buildings, but the testing process can take between 10 and 25 years to complete, depending on how often the buildings are renovated. It's now essential to increase the test frequency, standardise the way testing is carried out, and facilitate cooperation between different parties.

The Solution

This is way why we established KTH Live-In Lab - a platform of multiple testbeds that is designed to accelerate innovation! Here we have advanced test infrastructure, including everything from technical systems and databases, to building users and operators. Here the new technology can be tested, developed and standardised in a whole range of contexts; from innovative apartments, to classrooms and hotels. The purpose is to accelerate the rate of innovation to make smart, sustainable buildings a reality within reach!

SUBMIT YOUR IDEA
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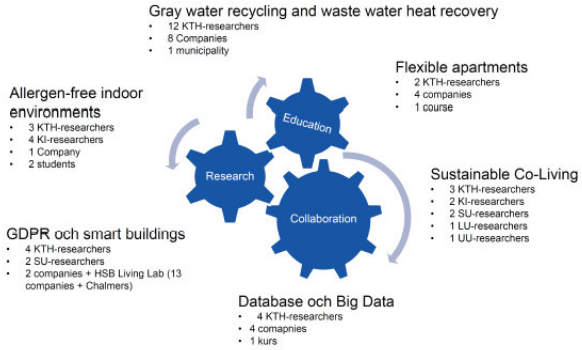
Collaboration

The testing is carried out as a series of projects. And most of these projects involve a collaboration between academia, industry and society. Each project forms part of a big picture. The results of one being used to optimise the rest, like a series of interlocking cog wheels, each cog will fit into the teeth of the others to optimize the whole process. For example, projects focused on boosting the efficiency of ventilation and heating cannot be optimised without projects on building automation and behaviour being carried out. These in turn cannot reach their full potential without projects on data storage, the processing of information and AI being carried out. It's essential that we establish and use buildings i line with the resources available to us. Technology that performs better – both from the property owner and society – is an asset to everyone concerned! We have the testbeds, the competence required, and through our partnerships with industry, we can make the necessary funding available. All we need now is you, your commitment and your vision – and together we can enable the smart, sustainable buildings of the future!

Collaboration between projects



Use the test infrastructure for your project

Use KTH Live-In Lab as a testbed for innovative Cleantech / Construction technology, or conduct parts, or all, of your research at KTH Live-In Lab. We offer working space, space for your necessary installations as well as infrastructure and the context needed to conduct research & tests in a real-life setting. Through tests projects / commissionedresearch we can together verify and optimize technologies and methods in actual working conditions.

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