

# KTH

## LIVE-IN LAB



### WHAT?

KTH Live-In Lab is an innovation platform for research and development within construction solutions and Cleantech for the construction and real-estate sectors. Through increased innovation, KTH Live-In Lab contributes to accelerate the transition to tomorrow more sustainable and resource-efficient buildings. The testbed is also a unique node for collaboration between industry and academia.

The testbed is designed for investigating innovations that are both socially desirable and misaligned with existing technological infrastructure, regulations, user behavior etc., and is inspired by Schot & Geels theories of Strategic Niche Management (SNM) and Multilevel perspective (MLP). The SNM draws on earlier theories of technical change, arguing that actors both anticipate future selection and also actively shape the selection process itself through R&D or demonstration projects. These R&D and demonstration projects are shelters where novelties are to be tested and developed; they are technological niches. Technological testbeds or demonstration projects are vital when exploring possible problem areas related to user

behavior and technology<sup>10</sup>. This exploration and exposure of new technologies is argued to lead to changes in how we produce and use buildings, i.e. changes in the niche and regime levels. The aim is to phase out dominant polluting technologies and replace them with novel sustainable technologies, hence influencing and transforming current governance institutions and agency; i.e. transforming the socio-technical regime.

KTH Live-In Labs Testbed KTH is a flexible testbed designed to manage all kinds of technologies and services, both as single entities but more importantly, as parts of a real system. The testbed is open for all who would like to test and validate products or services related to how we produce and use buildings, as well as those interested in new business models and collaboration strategies.

The detailed plan for the buildings were accepted by the municipality in 2015 and the construction of the buildings started in the beginning of 2016 and will be finished summer 2018.



### HOW?

Testbed KTH consist of a 150 square meter room, with a basement of the same dimensions directly underneath. This versatile space will give free reigns for testing of any and all sorts of Cleantech related to building more sustainable residential housing (e.g. fuel cells, PCMs or ventilation solutions). This testing of solutions and services is made possible by the active space being exonerated from building permits for a 10-year period. Different constellations and types of apartments will be constructed within the active section each year, in collaboration between students, researchers and company representatives, depending on the particular research projects that show the most promise. Presenting the current state-of-the-art during the entire first year, the active apartments will thereafter be dedicated to showcasing tomorrow's technological solutions. Innovative Cleantech, residential interaction and performance will be measured and evaluated; new technology, new theories and new incentive models will be implemented and tested. The apartments in the active section are redesigned and reconstructed on a yearly basis.

The active apartments are initially identical in size to the apartments in Testbed EM. The difference lies in the raised floor, the extra ceiling and the gaps between the walls, allowing access to all the space around the apartment. In the future these will be reconstructed entirely.

### WHY?

#### ACCELERATING INNOVATION

The aim of KTH Live-In Lab is to increase innovation within the built environment, through shortening the gap between ideas or research results and their subsequent large-scale dissemination. Through increased innovation the lab contributes with more business and increased export of solutions for more sustainable building and living. The testbed is a node for networking and collaboration between academia, industry and society.

#### Vision

KTH Live-In Lab enables more resource efficient and sustainable buildings by increasing the innovation rate within the construction and real-estate sectors.

#### Purpose

The purpose of KTH Live-In Lab is to reduce the lead times between test/research results and market introduction. In this way, KTH Live-In Lab aims to facilitate the advent of the sustainable and resource-effective buildings of the future. KTH Live-In Lab is also a unique node for development and collaboration between industry and academia.

#### Aim

to help accelerate the rate of introduction of new competitive product and services for the construction and real-estate sectors.

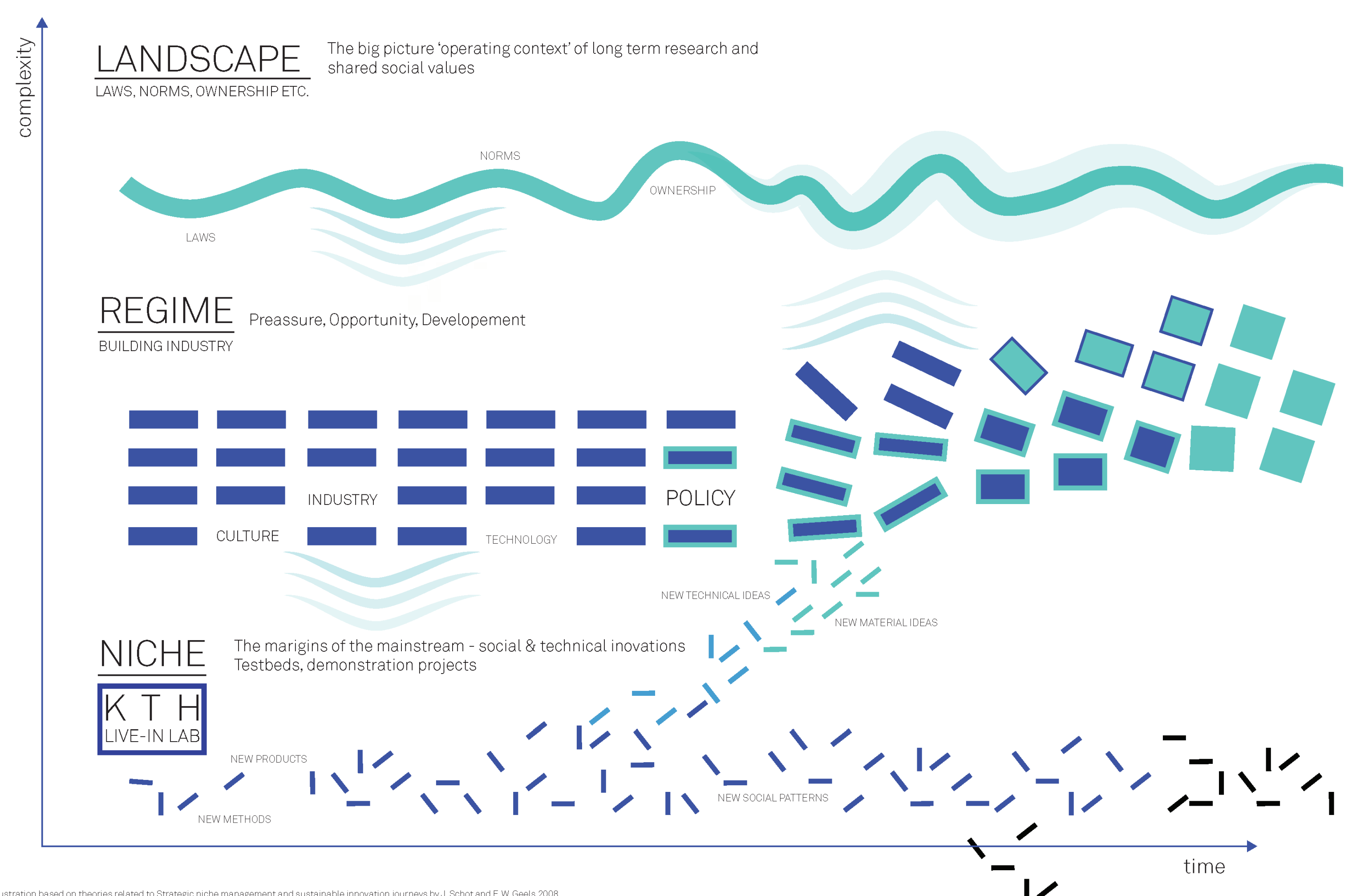


Figure 1 – Multilevel perspective on technological transition. (1) novelties are developed in technological niches and introduced into existing buildings or “architecture”. This is referred to as innovation as stepwise reconfiguration directed at components (Changes in the Niche level), (2) Existing buildings are reconfigured, either through add-ons or through replacements of older components, so called architectural innovation (changes in the sociotechnical regime), and (3) allowing components to reach their full potential and hence radical improvements or radical innovation (changes in the sociotechnical landscape).

**Do you want to get involved?  
Join KTH Live-In Lab**

For more information, visit [www.liveinlab.kth.se](http://www.liveinlab.kth.se)