

Development drivers in the wood-building industry

-leading to sustainability and smart cities



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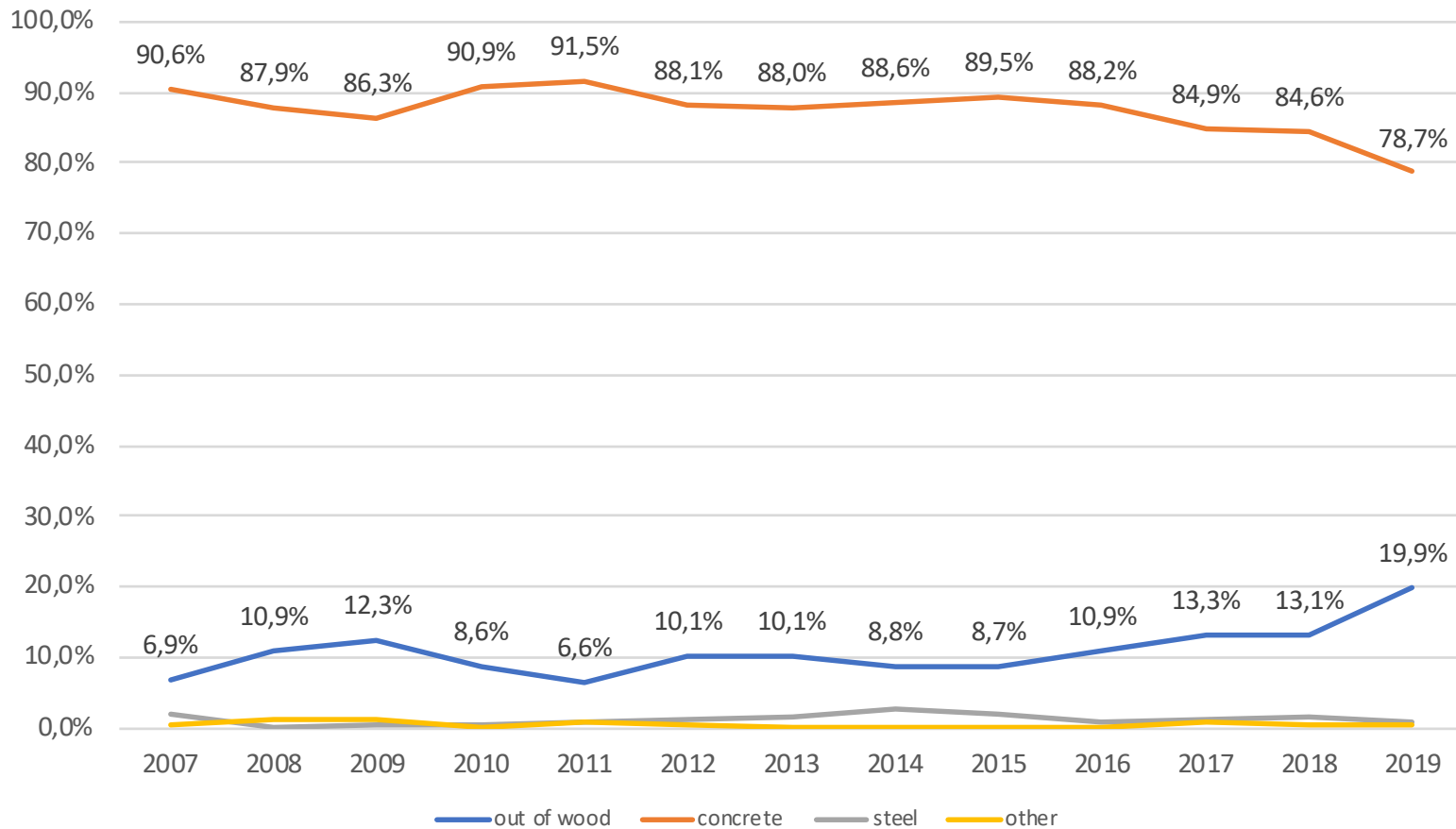
Introduction



- Gradual change towards urbanization, leading to a shortage of available housing units
- Gain a broader understanding of what influences the development of wooden multi-family houses
- The industry of wooden multi-family houses is increasing its market share in Sweden, but...



Wood-building development



Public control mechanisms

- Municipalities have several administrative and legislative tools to facilitate development
- Municipalities commitment is an important driver for change
- Municipalities should clearly state their intention towards wood construction



Market factors

- Ability to identifying drivers and barriers within the industry enables development of wood-based building solutions
- Political decisions, such as legislation, fees and taxation, influence wood-building development
- Companies that have the ability to adapt to the market context minimize development barriers



Sustainable development strategy



2004



2005



2013



2018



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Växjö – First modern wooden city in Europe

- By 2020, 50 percent of all new construction will be wood-based, and must also include some form of reporting of climate impact
- By 2022, priority will be given to new construction with the least climate impact based on the frame and load-bearing parts (using LCA, or similar)
- From 2025, priority will be given to new construction with the least climate impact from the entire construction (using LCA , or similar)



Viable Cities

- Viable Cities is an innovation program with about 90 member organizations that share a common vision of smart, sustainable cities
- Växjö Municipality is one of 9 municipalities in Sweden that are part of Viable Cities 2030. Each municipality have developed a climate contract.
- Växjö municipality collaborates with VKAB and LNU in in-depth studies of life cycle calculations from a perspective in the construction sector
- In addition, we also focus on revisions of the energy plan and transport plan, dialogue and collaboration



Not only the environment and sustainability

- Lightweight material, easy to process, repair, transport, and enables extensions easily
- Faster construction process, high degree of prefabrication
- Industrial production creates new jobs in rural areas



Product development

- Methods of information transfer have not developed at the same pace as the production methodology
- Increased standardization is necessary to streamline the entire production process
- The transition from traditional on-site construction to prefabrication is challenging

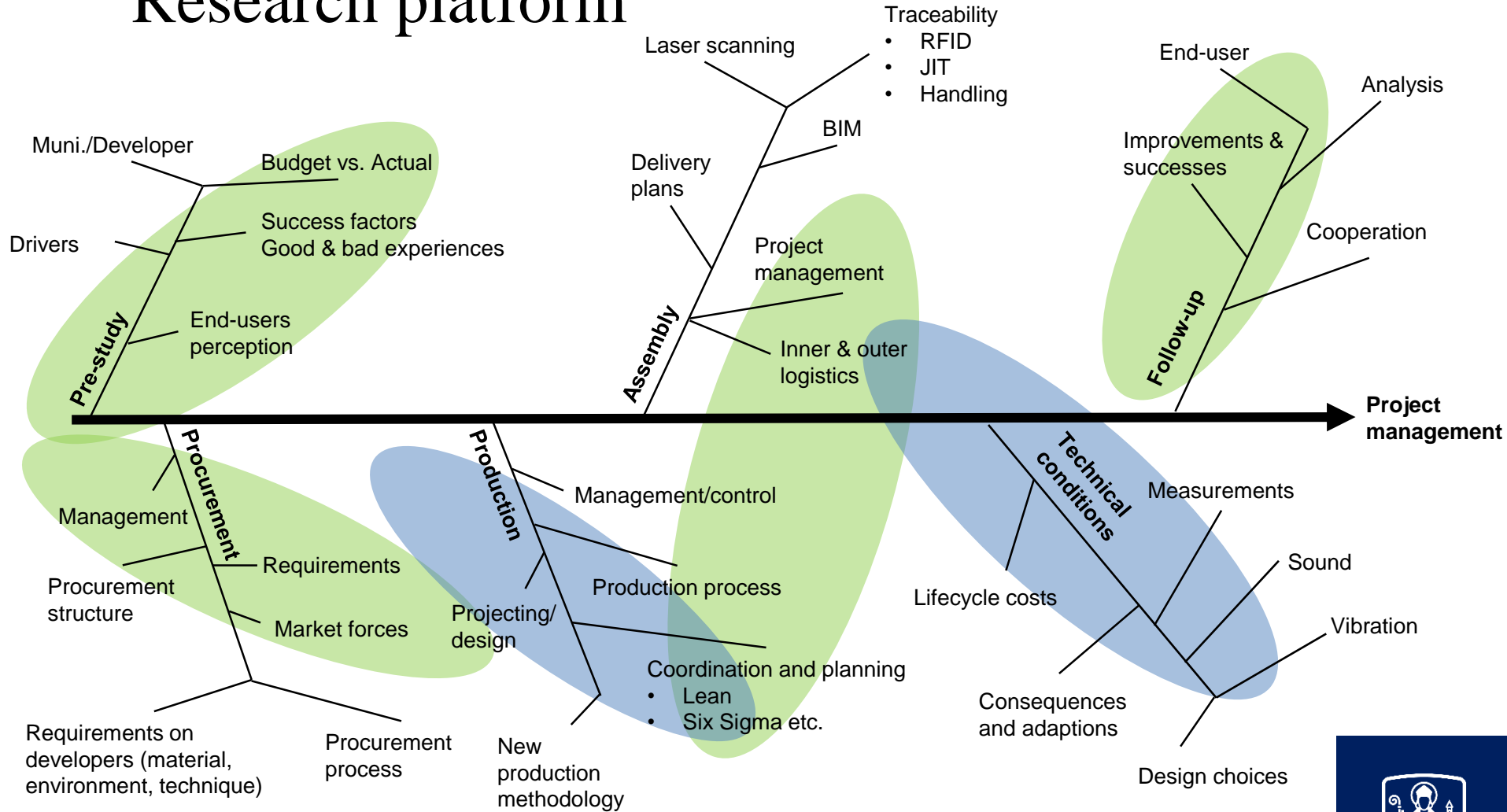


Municipality actions

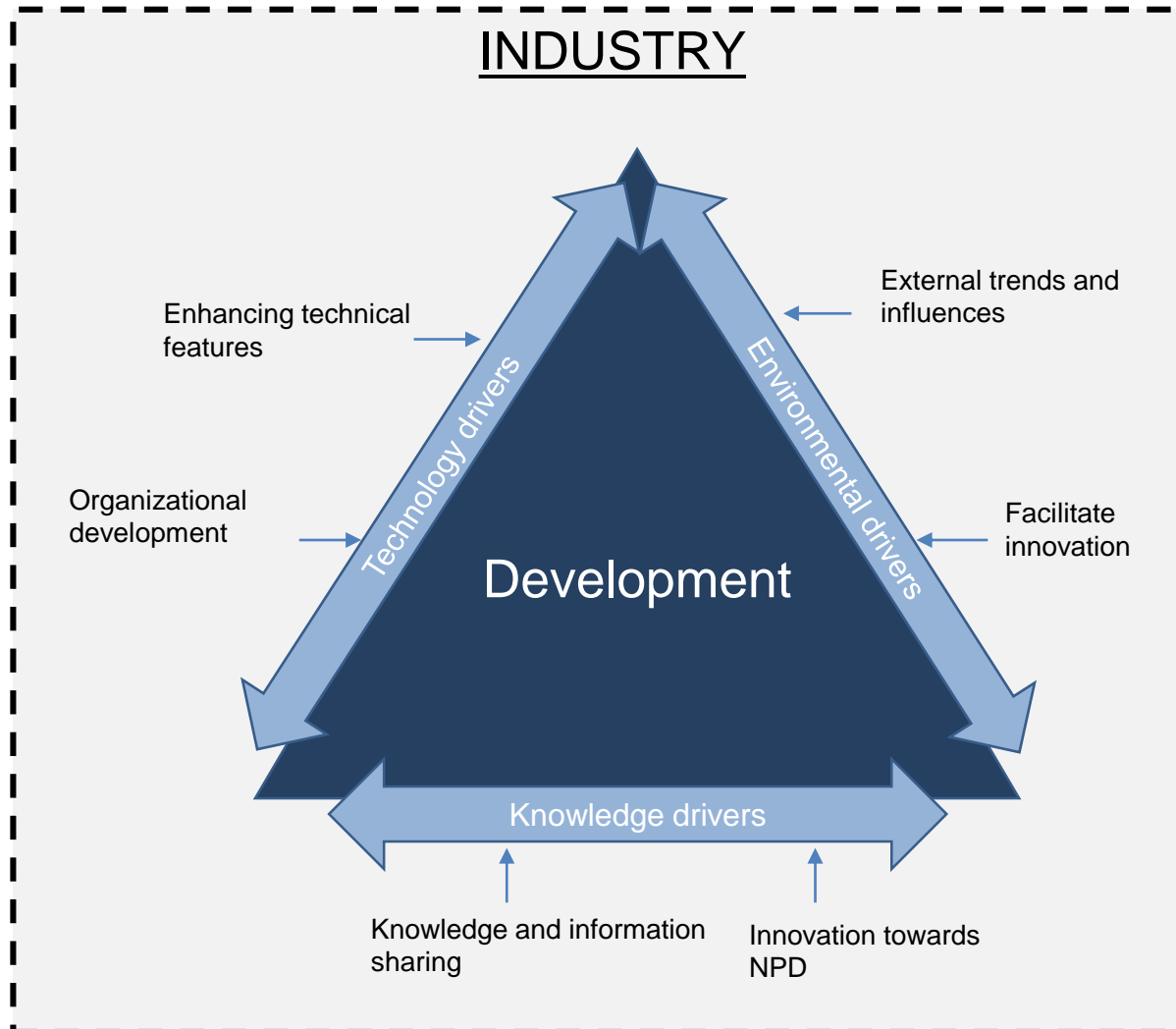
- Dialogue with researchers, architects, builders and contractors for further development of wood construction
- Stimulate, support and develop the business community around the wood-building industry
- Increase understanding about climate calculations and climate declarations



Research platform

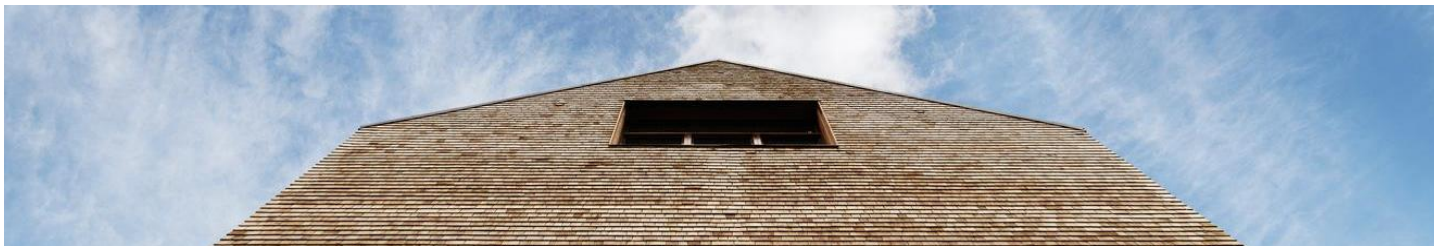


Development focus



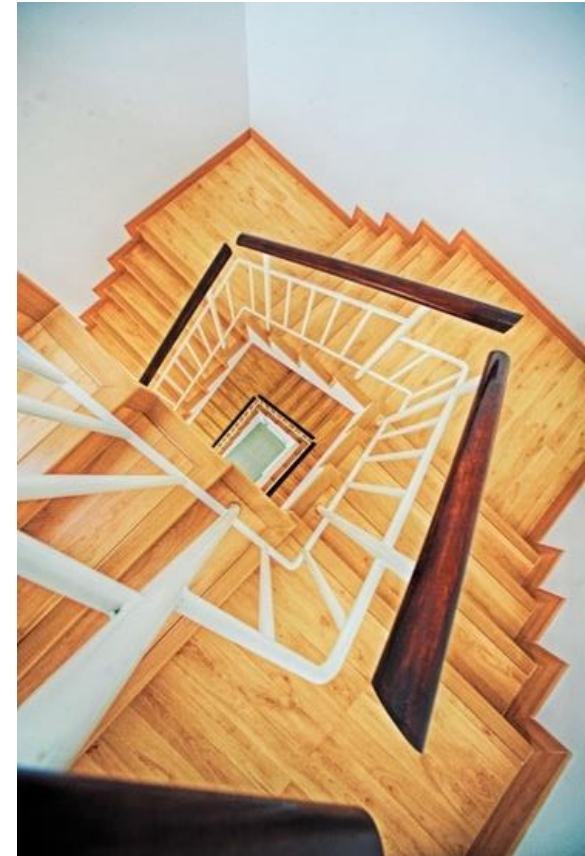
Development drivers

- Increased wood construction is not only based on design and technical properties:
 - A drive to reduce the building's environmental impact
 - Requirements in the detailed development plan to increase the use of wooden buildings are important
 - Various regulations control the municipalities possibilities to develop towards wooden construction

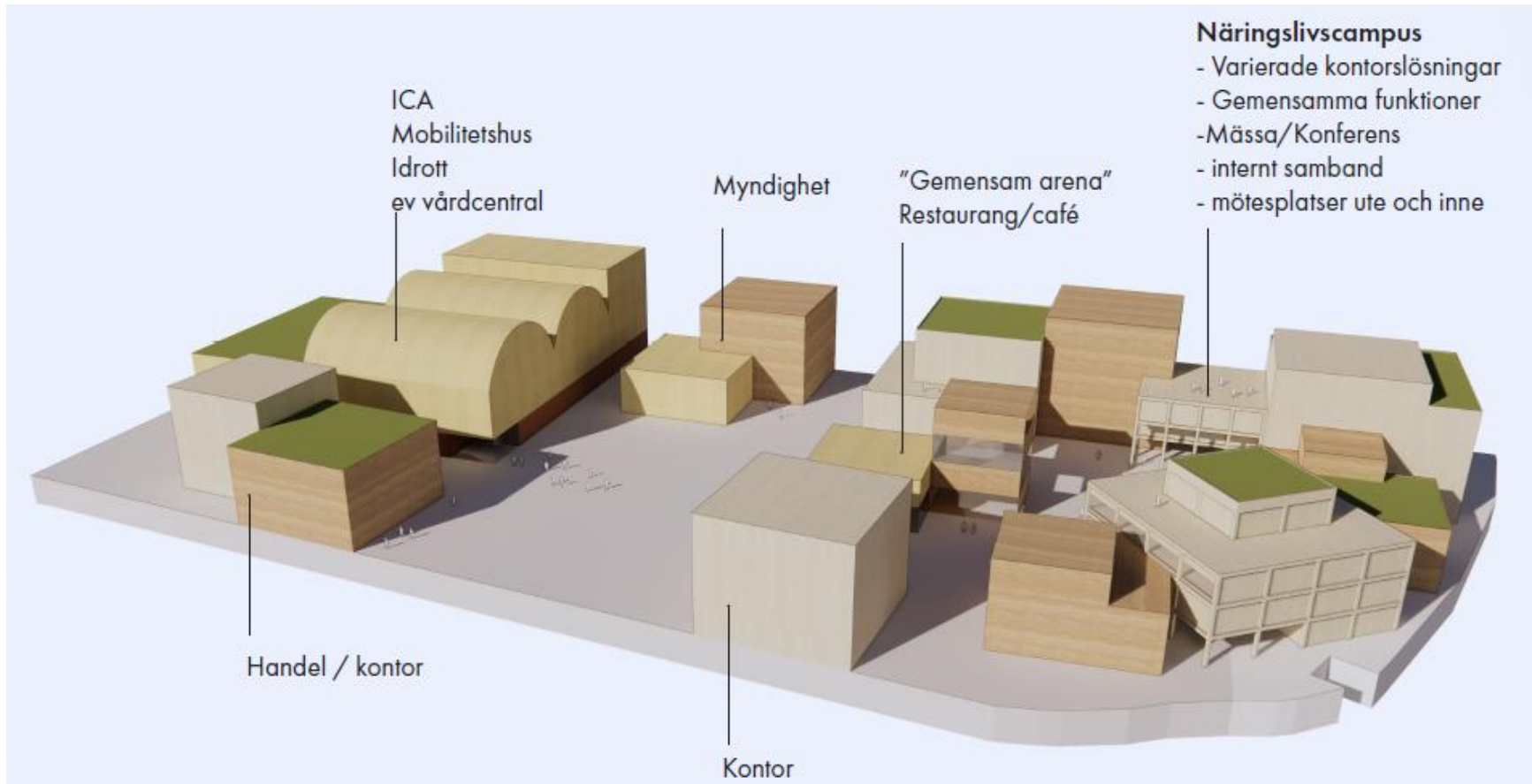


Land allocation activity

- Opportunity to pose specific requirements as a result of the civil law framework
- The process creates confusion for developers and contractors
- The municipality becomes a procurer of a building project rather than a seller of land
- Lack of standardization in the evaluation process



Project Crossways



"An area that contributes to Växjö as a place where talents want to move, work and live"



Development scope

- Central, climate-smart meeting place, connecting the city and creates increased contact between people, business, authorities and academia
- New digital opportunities and dimensions of network influencing both local and global players
- Sustainable, and climate-neutral solutions, to common challenges with the forest as a key driver

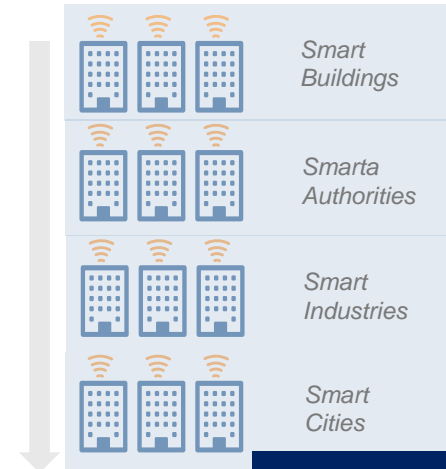
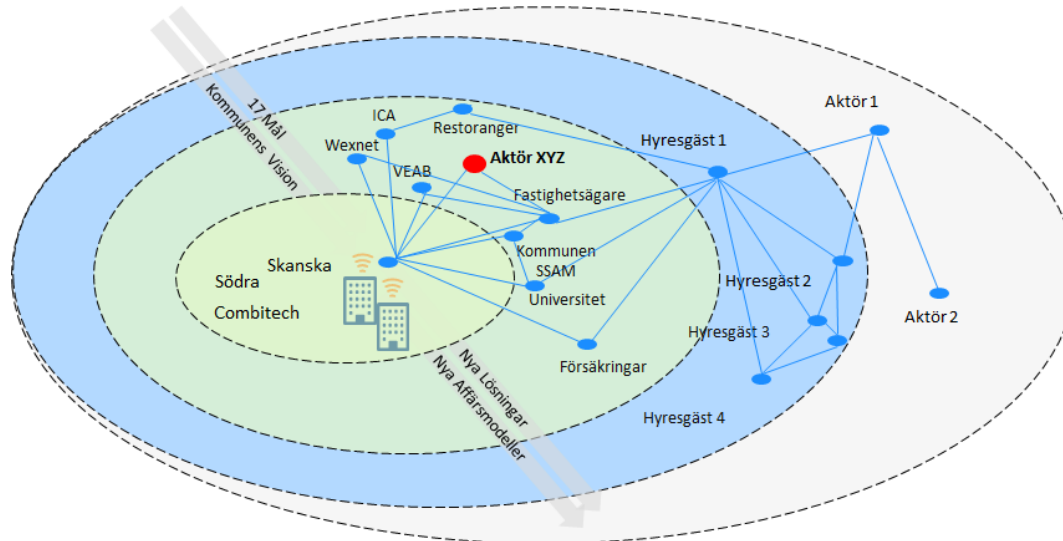


Vision

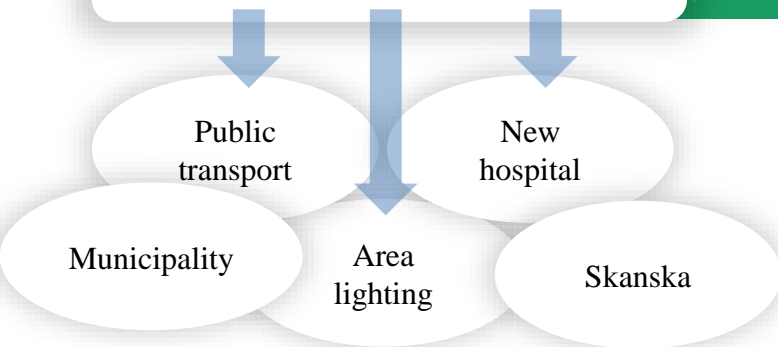
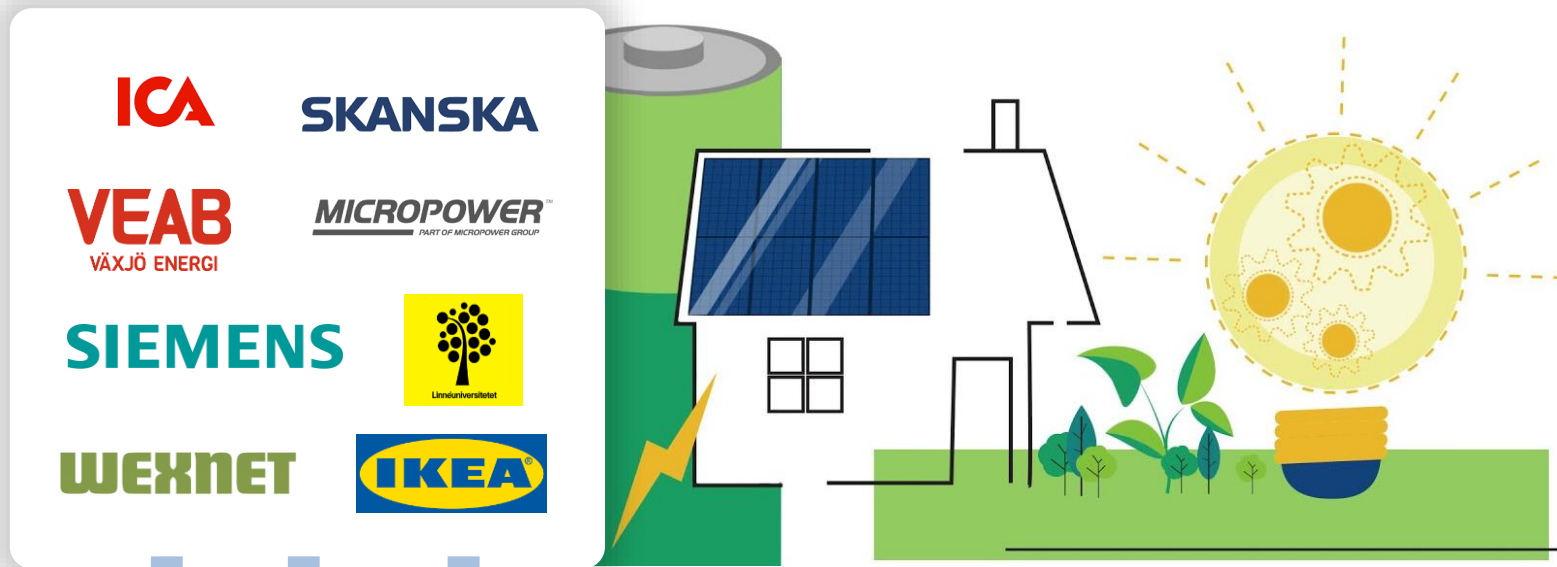


Actor XYZ:s needs

Actor XYZ:s strength

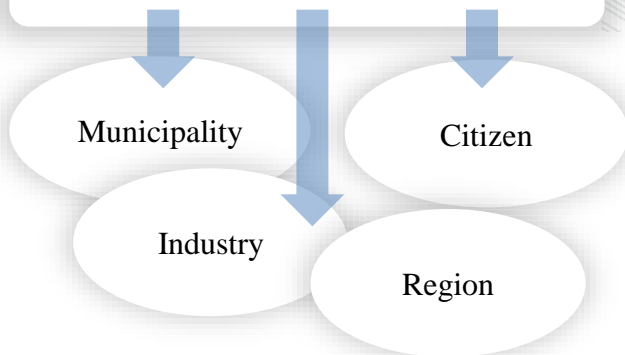


Sustainable energy



VEAB can accelerate the development and use Bäckaslöv as an arena to test innovations that can contribute to sustainable living through pilots in solar cells and energy storage

Healthcare transformation

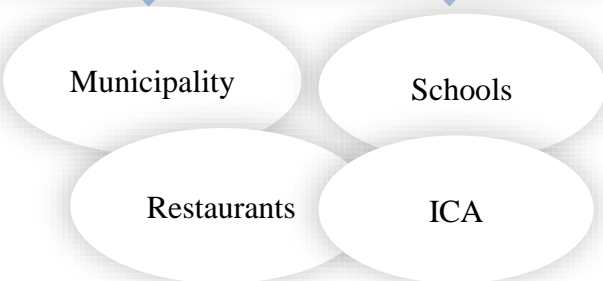


The Region (SKR) demands the development of virtual care rooms and an integrated e-health system in the home

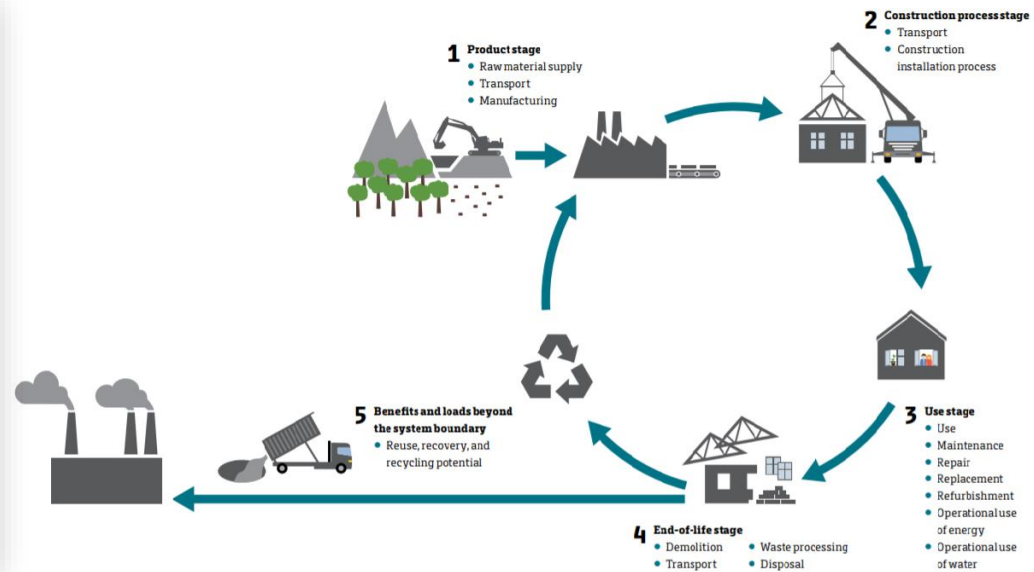
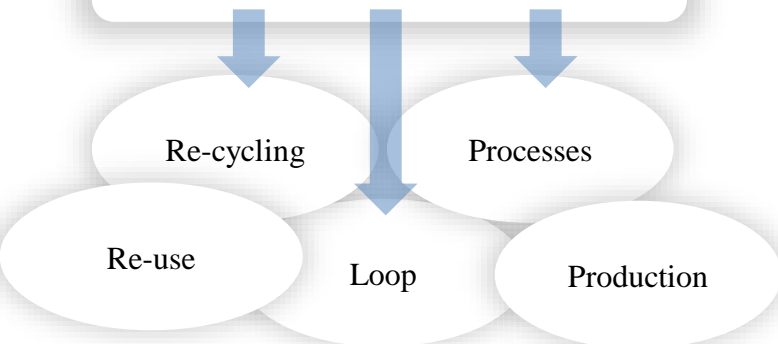
Local farming



On site development of a fully automated vertical cultivation system of certain crops and vegetables, where ICA becomes self-sufficient in certain types of product ranges



Circular economy



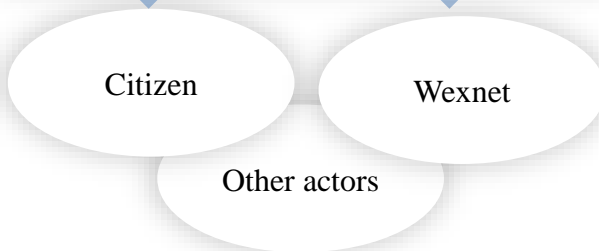
Developing an integrated concept together with the actors within the building process and next level waste management concepts



Smart city



The municipality / Wexnet have opportunity to drive the development of an “Urban Operating System” and to digitally integrate the area with the rest of the city

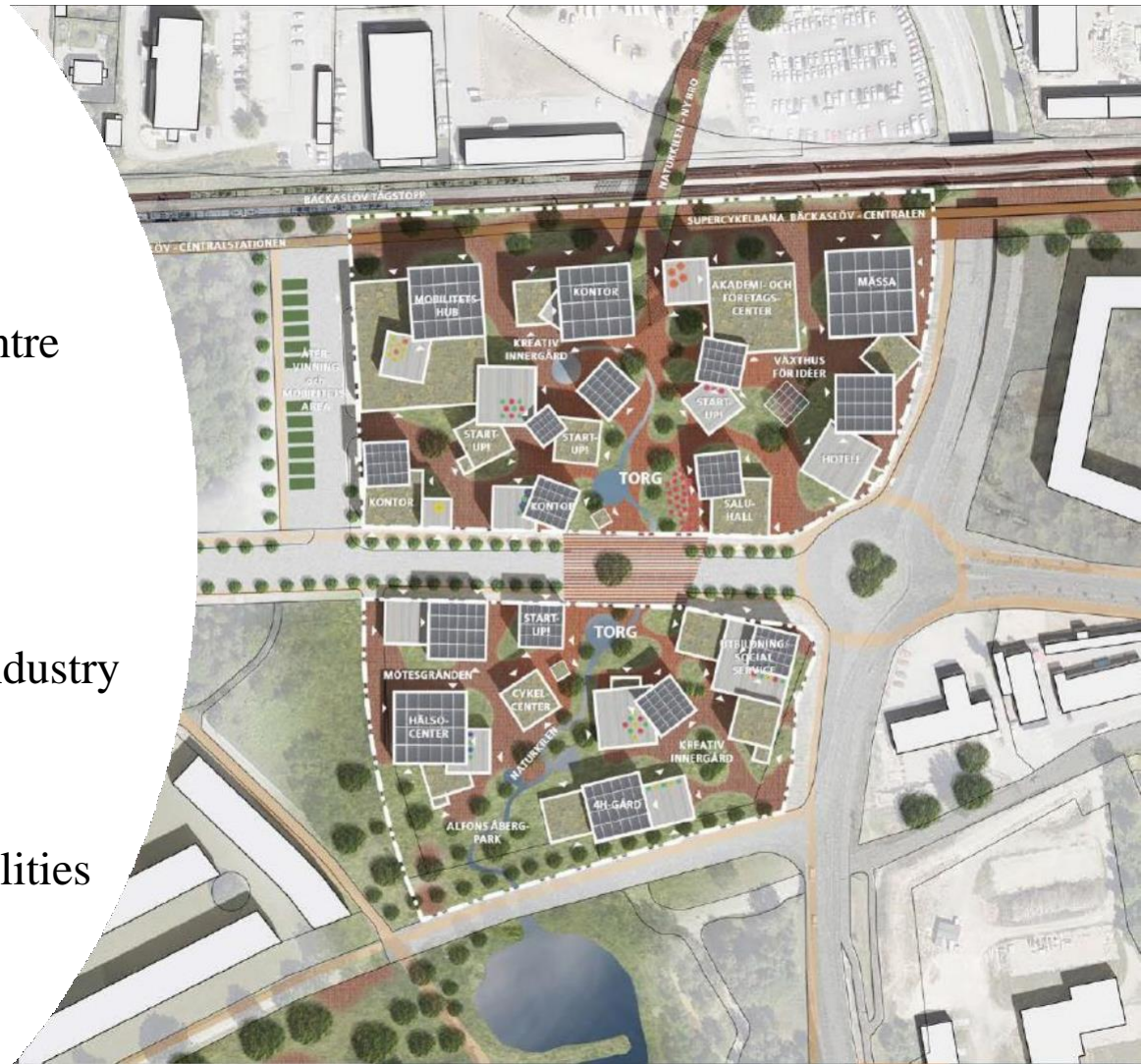


Steps taken towards integrating various components of smart city into the development concept



Facilities

- Area services
 - Close proximity to base functions
 - Health & o recreation centre
 - Restaurants etc
- Smart city
 - Digitalization
 - Innovation
 - Collaboration between industry and authority
- Synergies
 - Sport facilities/event facilities
 - University “IT-farm”
 - Science Park
 - Rent bike – Cargo bikes



General requirements

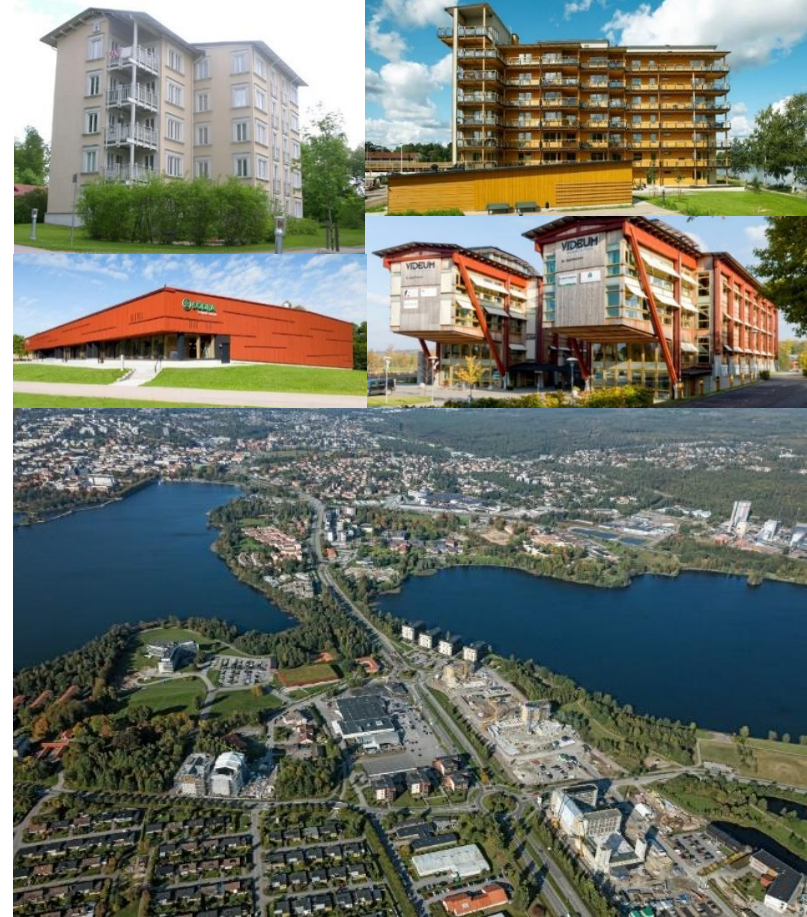


- Municipalities or the government do not clearly state their intention regarding wood-building construction
- Develop a standardized evaluation process linked to land allocation projects
- Focus on the functional specification
- Identified knowledge gaps in public organizations related to wood-building construction, or sustainability projects



Success factors

- Consensus between parties – ambition and drive
- Early developer of policies and strategies
- Collaboration – Triple Helix
- Dedicated geographical area for wood-building initiatives





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