Towards holistic approaches – starting with a common ground

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Content

Why are holistic planning approaches important?

What is meant by common ground?

Results from cases

Next steps

Why are holistic design approaches important in urban environments?

People

- Urban population is increasing

Industry

- Buildings account for the main source of energy use in Europe

Policy

- European Union 2020, 2030 and 2050 goals
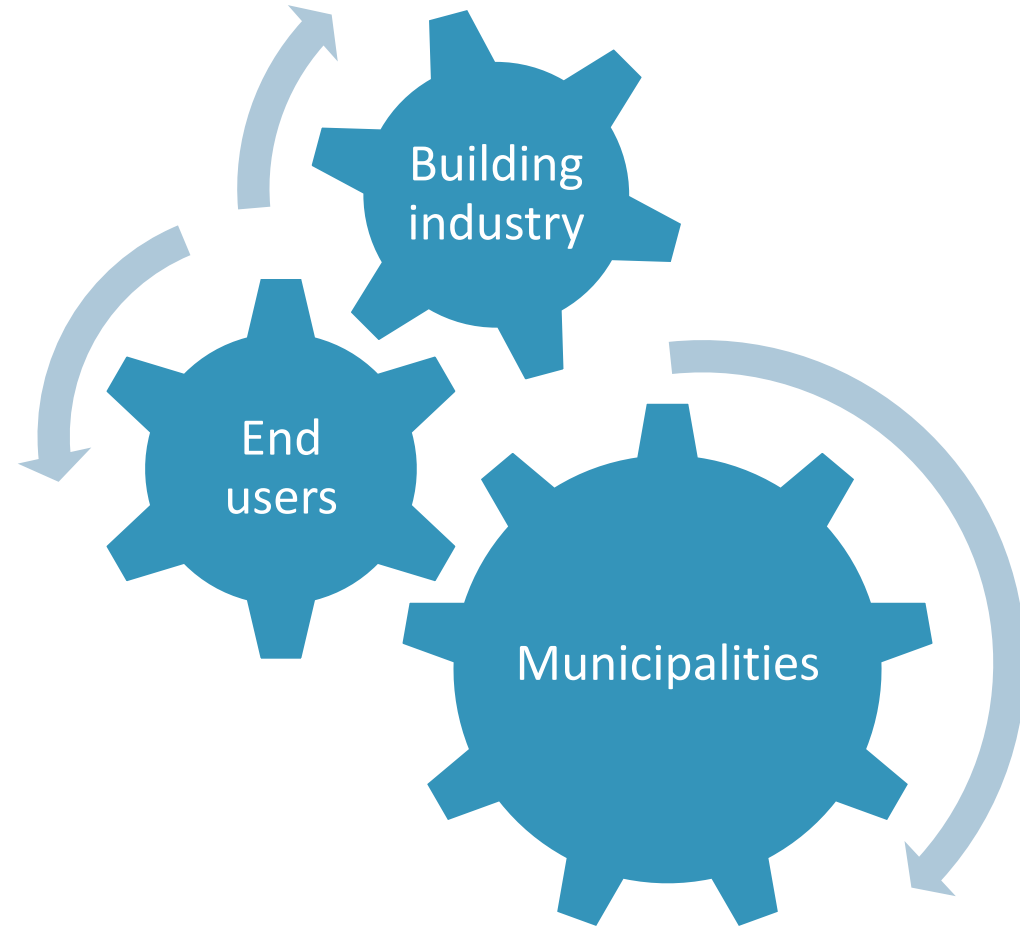
Planning occurs in a multi-criteria context

Noise and emmissions; outdoor quality; green area and transportation

Energy use and supply; Indoor climate; common waste treatment

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Multiple stakeholders, disconnected agendas

Smart cities require more integrated strategies
More integrated strategies require increased and collaborative capacity building

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Nearly Zero Energy Neighorhoods (ZenN)

Mogel, Eibar, Spain
Source: ZenN website

Økern, Oslo, Norway
Source: Carmel Lindkvist.

Realising energy reduction on a neighborhood scale

Lindängen, Malmö, Sweden
Source: ZenN website

Arlequin, Grenoble, France
Source: MANASLU Ing.

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ZenN challenges

New concepts
- *"... When you introduce something new it reveals a communication demand and a lot of confusion and worries that need to be addressed."*
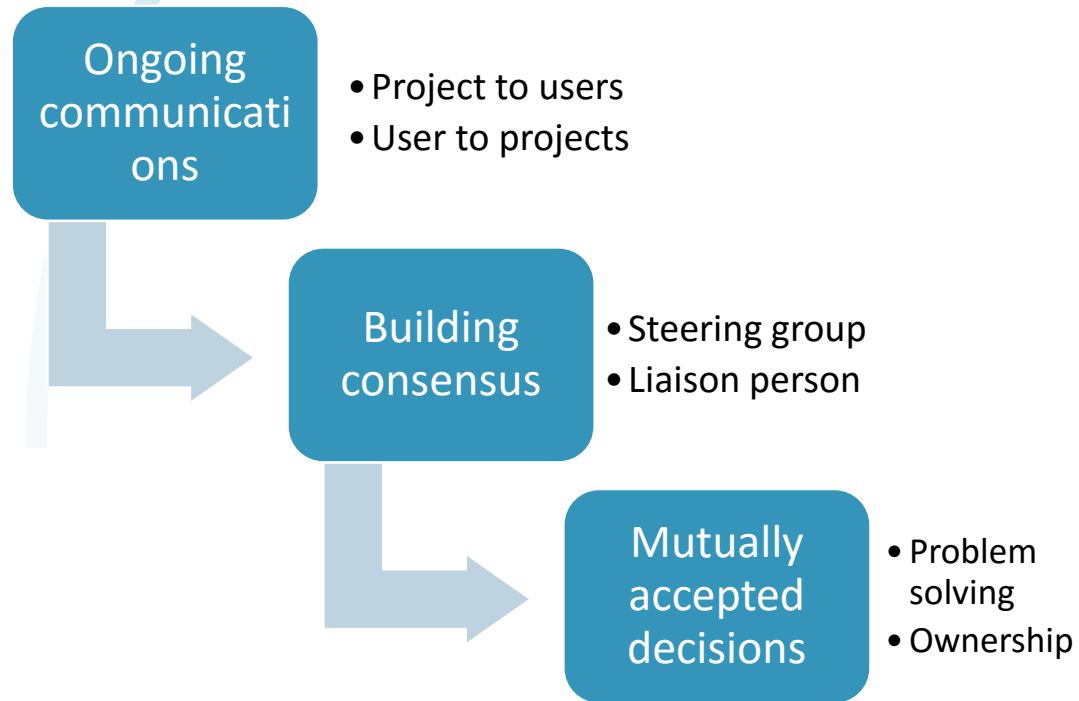
Need for new and current knowledge to merge
"It is necessary (for energy experts) to talk to the building guys to make sure that they don't create any trouble for each other"
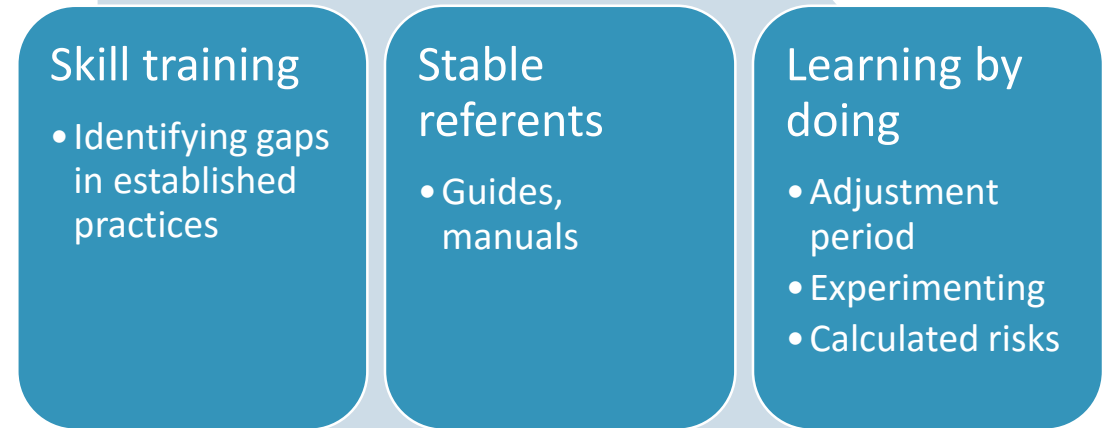
Misconceptions
Installation of solar thermal panels for heating water was difficult to understand by residents. They thought *"the first that wakes up in the morning will be the one that will consume the hot water"*.

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Knowledge transfer (ZenN)

Knowledge building

Ongoing communications
- Project to users
- User to projects

Building consensus
- Steering group
- Liaison person

Mutually accepted decisions
- Problem solving
- Ownership

Skill training
- Identifying gaps in established practices

Stable referents
- Guides, manuals

Learning by doing
- Adjustment period
- Experimenting
- Calculated risks

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Our experience...

technologies

PI-SEC

buildings

energy

neighborhoods

Smart

energy communities

cities

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technologies

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PI-SEC

«It has to be about more than how thick the walls are» (A need to move from building to larger impact)

«I want my building to encourage me to behave sustainably, for example by making it possible for me to wash my bike at the ground floor of my apartment building» (Sustainable behaviour)

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«Mrs. Hansen will sit in her apartment and tell her TV that she needs to og to the doctor and then an electric car will be booked for her in the basement of her building» (User-centred)

«We want citizens to be able to see that their hockey club is powered by local energy sources and what that does to global warming» (the Engaging City)

«Soon, the washing machine will turn on automatically when the energy prices are low»

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«When you fly over Norway, it looks as if someone has been throwing Smart Houses from the sky» (Aesthetics)

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«We need to require the evaluaiton and comparison of different alternatives in city plans and their [environmental] cost/benefit » (Scenario building and visual tools)

«We do not have the regulatory tools to set high enough requirements»

«Project owners need to see the impact of each step, the [climate gas] objections are too difficult to break down»

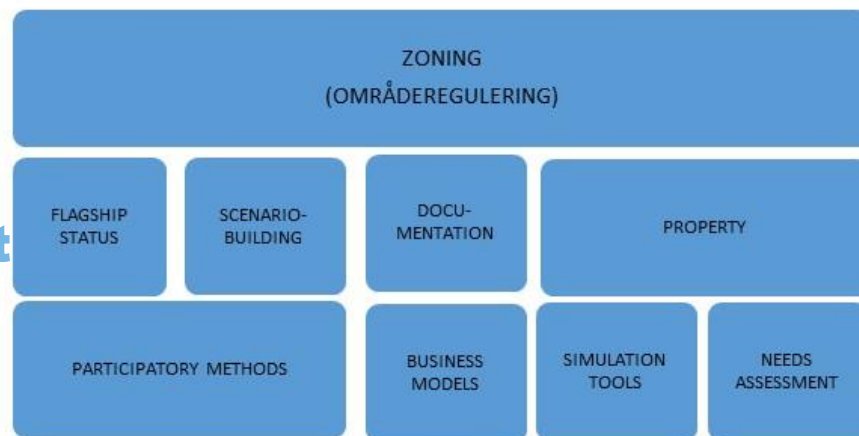«There is a strong need for incentives to ensure first-movers»

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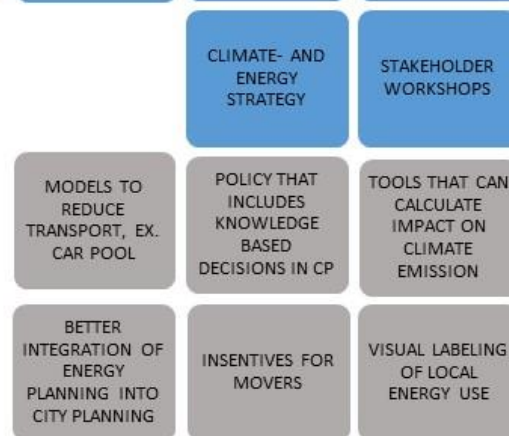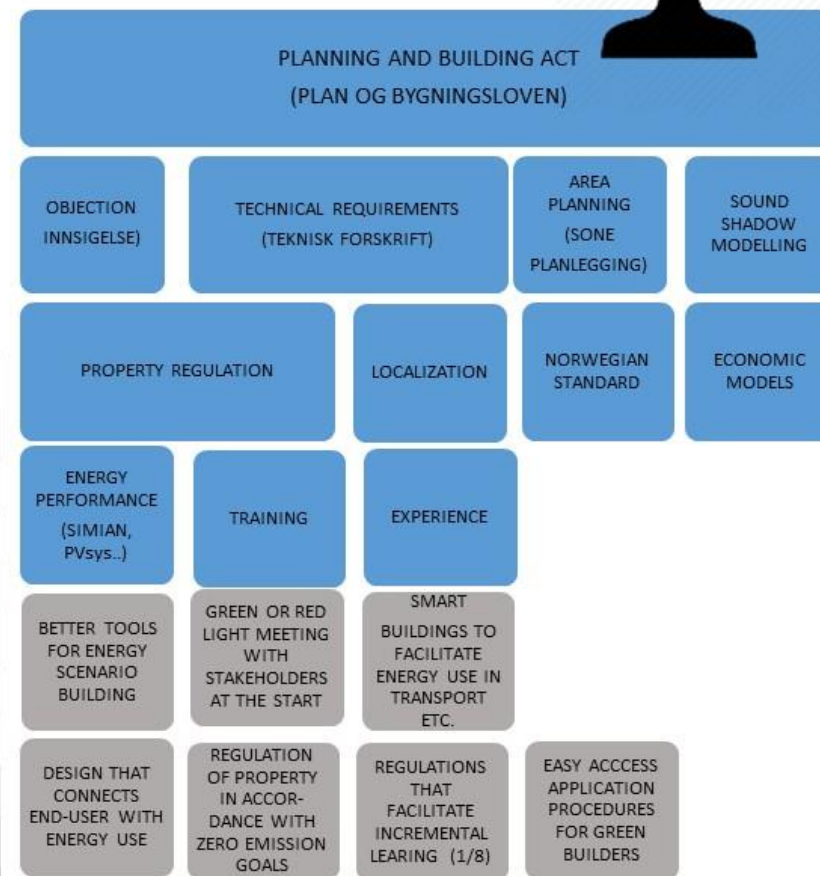
Our experience…

Our experience...

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Smart
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«We need to learn how to plan for incremental learning when building larger housing projects» (Knowledge)

«We need to require the evaluaiton and comparison of different alternatives in city plans and their [environmental] cost/benefit » (Scenario building and visual tools)

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Smart Living

«How will we know, how the creation of a Smart Energy Community of Smart City thinking in Bergen effects building plans and mobility in neigboor municipalities?»

«My job is to create good living environments / gode bomiljø. Energy is irrelevant»

«Energy resources will bring industries and jobs to the region with more Renwable Energy»

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Austrian Case

- „Smart ItzGoeS", project funded by the Austrian Fund for Climate and Energy
- Evaluation of different options for a low- to zero carbon refurbishment of an existing social housing complex in Salzburg
- The neighborhood was built in the 1970ies and has currently about 2,500 inhabitants.
- The study looked at several for increasing the energy efficiency and provide renewable from locally available sources

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Austrian Case

- A city-wide analysis had identified the Goethesiedlung as a potentially suitable showcase for achieving carbon neutrality by refurbishment measures.

- The SmartItzGoes project showed however, that carbon neutrality will be hard to achieve in this neighborhood in the short and medium term.
  => This is not due to technical issues, but to economics, the legal framework and social requirements.

- Local politicians, planners and other stakeholders considered aspects like improving the quality, affordability of housing, providing new transport options and designing of open spaces as equally important as reaching ambitious energy and climate targets
  => Integrated scenarios were developed.

- Also, it became apparent that there was no way to finance an "energy only"-scenario. It will only be possible to carry out ambitious refurbishment scenarios when a certain number of additional new apartments can be built in the districts.
  => Need for an integrated urban design concept for the district.
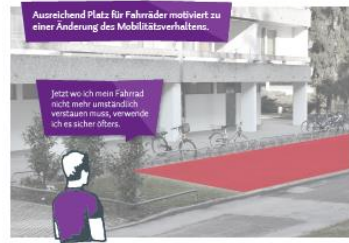
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Austrian Case

Conclusions

- Energy efficiency decisions impact all stakeholders – Need for inclusiveness.
- Power dynamics of current status quo
- Ambitious energy measures but difficult in practice – integrated urban design thinking
- A need for strategies to facilitate smart energy community development and implementation of visionary projects
- A need to find tools to approach non-technical / hard to measure issues (the human factor)

- Next steps: forecasting and analysis of current tools and needs

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