Solar Energy in Urban Planning Processes
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THE PLANNING PROCESS
The life-cycle of the city, building and material
- The role of the urban planner

Illustration by White arkitekter with inspiration from Stuart Branks' concept “Sharing Layers” from How Buildings Learn
- Lifetimes of different layers
Within the **Comprehensive/Strategical Planning**, visions and strategies to reach certain goals are developed and connected to land use and zoning. Can be regional and municipal/city scale plans. Scale 1:2000 – 1:100,000

In the **Urban and Landscape Design** stages the urban fabric and morphology is decided for a city district or for a landscape area. Scale: 1:1000 – 1:5000

At the **Architectural Design** stage new and existing buildings or landscape systems are designed or altered. Scale: 1:10 – 1:500

**Detailed Development Plans** are the implementation of the urban design, and the land use is regulated into legally binding documents. Scale: 1:500 – 1:2000
Stockholm Royal Seaport

→ 12 000 dwellings
→ 35 000 working places
→ 600 000 sqm commercial space
→ 236 ha
→ First buildings finished in 2012
→ Area finishing 2030
→ City owns the land
Targets and Vision
- Specific requirements

Implementation

Follow-up
Energy principles

→ Local energy generation
→ Energy efficient buildings
→ Low CO₂ impact from embodied energy
→ Energy efficient construction
Locally Generated Energy

Requirement
2 kWh/m² PV, or
6 kWh/m² solar thermal or a combination

Diagrams extracted from follow-up report of Stockholm Royal Seaport, by City of Stockholm
SUCCESS FACTORS

• Early dialogue between local authority and developers
• Specific requirements connected to overall vision and strategies
• Capacity building and knowledge sharing
• Robust organisation with sustainability manager
• Clear process: land procurement ➔ architectural competition ➔ sustainability implementation programmes
SOLAR RIGHTS
Illustration based on formal plan by Uppsala municipality
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EXEMPEL: 3 ROK

Paneler på tak + östsydöstfasad + sydsydvästfasad

Takpaneler ca 2,0 m²
Paneler på östsydöstfasad ca 0,2 m²
Paneler på sydsydvästfasad ca 1,1 m²
Energy coverage per building =
Energy generation
energy need
THANK YOU!

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