

The Swedish SPECIAL Planning Approach

Workshop in Dublin within the framework of the SPECIAL Project 20151216



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 Honorary Professor at Tongji University, Shanghai
 Member of the Swedish Association of Planners (FFS)



Sweden

Considerable environmental improvements since the Stockholm Environmental Summit 1972



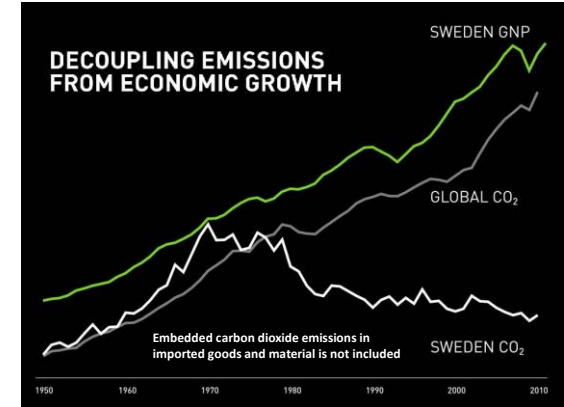
Strong political leadership

Economic instruments – carbon dioxide taxes
 energy tax relief on renewables etc

Triple helix collaboration

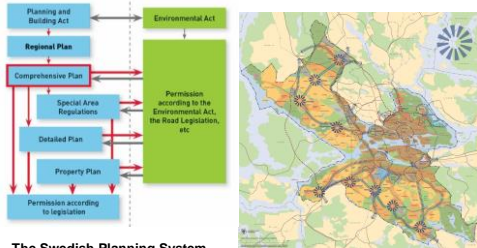


Integrated planning



The Regional Development Plan for the Stockholm region 2010
 A revised regional plan for the region is under development for 2016

The Comprehensive urban Plan of Stockholm – The Walkable City



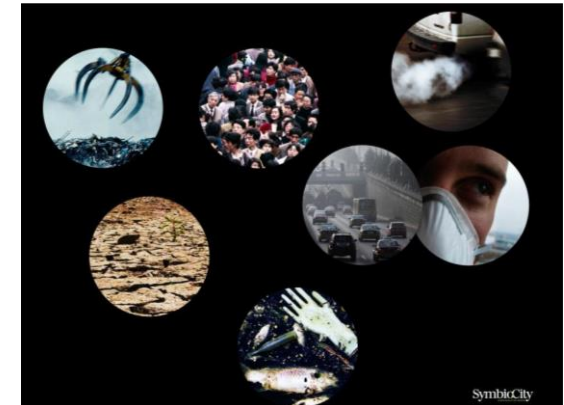
The Swedish Planning System

The SymbioCity Approach

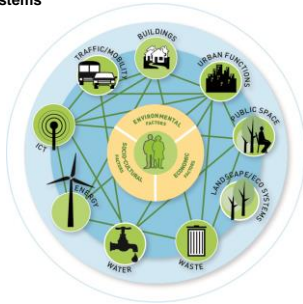
URBAN CHALLENGES AS OPPORTUNITIES

A CONCEPTUAL FRAMEWORK FOR SUSTAINABLE URBAN DEVELOPMENT

SymbioCity



The SymbioCity Approach promotes urban review and planning processes that consider potential value-adding synergies between urban systems



Source: Ranhagen & Groth (2012)



To gather and apply Swedish knowledge within sustainable urban development in an international context



Western harbour/Bo 01 Malmö



Hammarby Sjöstad and Royal Seaport Stockholm



R&D projects – Institutional exp



Gårdsten, Gothenburg

The Sustainable Municipality Planning Approach



FÖRETAGET FÖR SAMHÄLLSPLANERING

THE SUSTAINABLE MUNICIPALITY PLANNING APPROACH



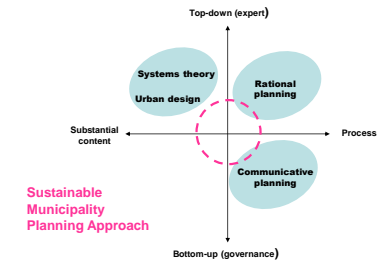
The Sustainable Municipality Programme Swedish Energy Agency 2003-2014

- Integrate **sustainable energy perspective** in urban & spatial planning
- **Capacity building** programme: planners, energy/sustainability strategists, transport planners
- **Methods and tools** to integrate sustainability and energy matters into spatial planning
- Combining **broad sustainability perspective** in general and a **sustainable energy focus** in particular
- **Process-oriented** (less focus on technical solutions)

FÖRETAGET FÖR SAMHÄLLSPLANERING



Schools of thought (planning theory perspectives)

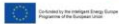


FÖRETAGET FÖR SAMHÄLLSPLANERING

URBAN PLANNING & SUSTAINABLE ENERGY FFS SPECIAL 2013-2016

Thessaloniki, 20 May 2015

The 4 leaps and 20 steps Sustainable Municipality Planning Approach



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SPECIAL

THE SWEDISH SPECIAL PARTNER:

The Swedish Society for Town & Country Planning

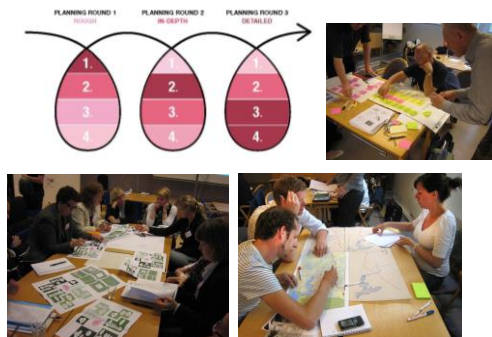
FÖRENINGEN FÖR SAMHÄLLSPLANERING

Methods and tools to integrate sustainability and energy issues in spatial planning R & D projects

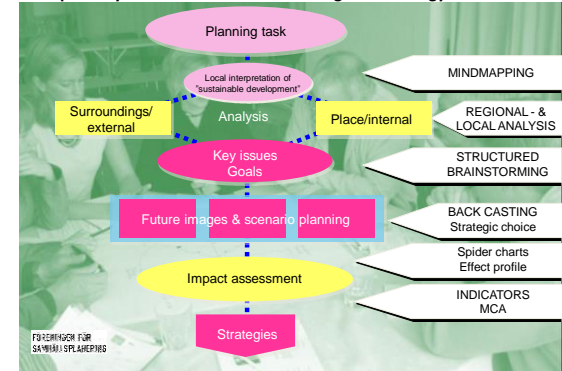


Leap 1 Plan the work

Participatory Approach – Action-oriented R&D



Step 1: A systematic and flexible working methodology



Ulf Rønnevig, FFSKTH, Dec 2015

Step 2: Form a cross-sectoral project organisation



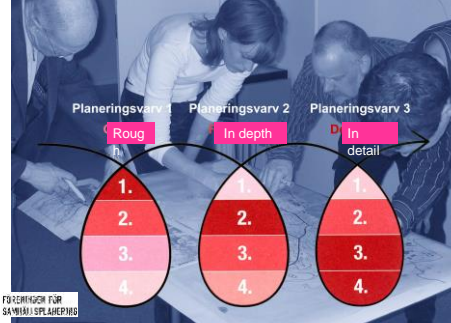
Cross-sectoral planning – new cooperation formats between, for example, politicians, officials, social associations and energy companies in the comprehensive planning process.

Cross-sectoral and communicative planning is key!

FÖRENINGEN FÜR SAMVIRKETSPLANERING

Ulf Rønnevig, FFSKTH, Dec 2015

Step 3 Time and process plan including several planning rounds (iterative/cyclic instead of linear planning process)



FÖRENINGEN FÜR SAMVIRKETSPLANERING

Ulf Rønnevig, FFSKTH, Dec 2015

An example of cooperation between several municipalities – working on ideas on cross-sectoral planning

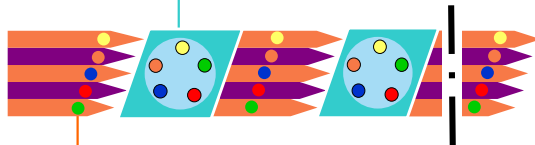


FÖRENINGEN FÜR SAMVIRKETSPLANERING

Ulf Rønnevig, FFSKTH, Dec 2015

Step 4 Work in a workshop format – establish a forum for dialogue

Common workshops with representatives from various municipal departments/sectors



Workshops within the municipal department (sector)

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Leap 2 Integrate sustainability in spatial planning

Ulf Rønnevig & Mats Johan Lundström, FFSKTH, Dec 2015

Step 5: Develop a Local definition of sustainable development



Municipality of Borås

Social	Ecological	Economy
Equality (gender, age)	Resource efficiency/carefulness	Work for (almost) all
Attractivity, well-being, feeling safe, care, positivity	Perceived environment	Attractive for businesses
School, sports, culture, housing	Energy	Energy
	Communications, transports	Communications, transports

Ulf Rånfrøgen & Mats Johan Lundström, FFSKTH, Dec 2015

Local definition of sustainable development

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Ulf Rånfrøgen & Mats Johan Lundström, FFSKTH, Dec 2015

Step 7: Formulate goals and key issues concerning sustainable development

Structured brainstorming

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STRUCTURED BRAINSTORMING

Key issues for successful planning processes

- 1. Individual reflections**
Put each idea/reflection on a small post-it note. **3 min**
- 2. Collaborative clustering**
Cluster the ideas in themes/groups (5 or so). If similar - put in the same cluster. **6 min**
- 3. Individual prioritizing**
Distribute 7 points per person on the themes with the most important issues (according to you). Count points/theme. **3 min**
- 4. Ranking: Discussion**
In the group - rank the themes in a top 3 list. **3 min**
- 5. Present the result:**
Discuss and compare with other groups (ranking, clusters and ideas)

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Ulf Rånfrøgen, FFSKTH, Dec 2015

Structured brainstorming – clustering individual ideas about challenges and prioritising the five most important challenges

Workshop in South Sweden, Sustainable Municipality, May 2012

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Step 6: Prepare an external/internal conditions analysis

For example: urban typologies & SWOT

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Ulf Rånfrøgen & Mats Johan Lundström, FFSKTH

WHY DO THE PROPHETS FAIL?

e-handel e-mail @ internet

I think there is a world Market for about five Computers

Thomas Watson, grundare och ordförande, IBM 1943

Margret Thatcher, 1969

No woman in my time will be Prime Minister.

Margret Thatcher, 1969

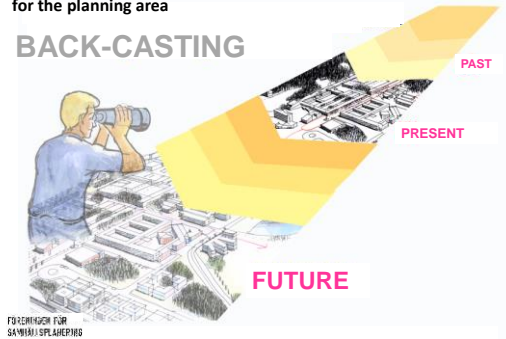
We don't like the sound, Guitargroups are on the way out, Mr Epstein.

Dick Rowes, CEO of Decca Recording Co, turning down the Beatles in 1962

FÖRENINGEN FÖR SAMHÄLLSPÅVERKAN

Step 8 Develop future images (spatial scenarios) for the planning area

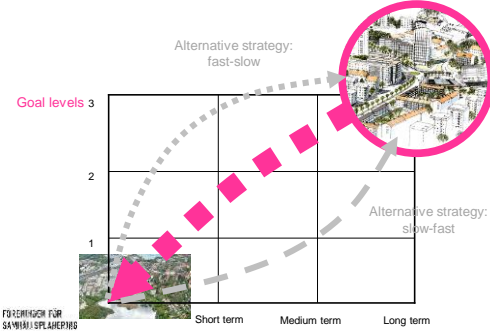
BACK-CASTING



FÖRENINGEN FÜR SAMVÄRNSPLANERING

UF Rantzen & Mats Johan Lundström, FFSKTH Dec 2015

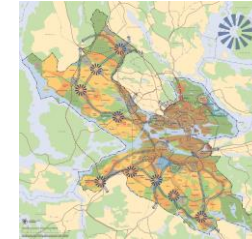
Step 8. Develop future images (spatial scenarios) for the planning area



FÖRENINGEN FÜR SAMVÄRNSPLANERING

UF Rantzen & Mats Johan Lundström, FFSKTH May

Step 8. Develop future images (spatial scenarios) for the planning area
Example of normative future image/vision

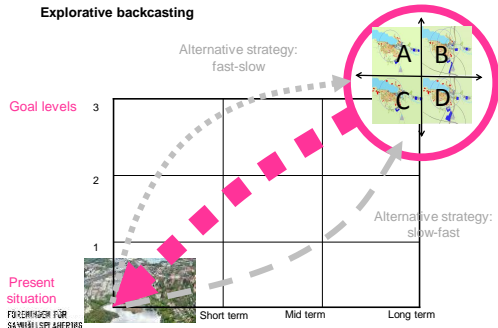


Stockholm 2030 – The Walkable City
Comprehensive/strategic Plan

FÖRENINGEN FÜR SAMVÄRNSPLANERING

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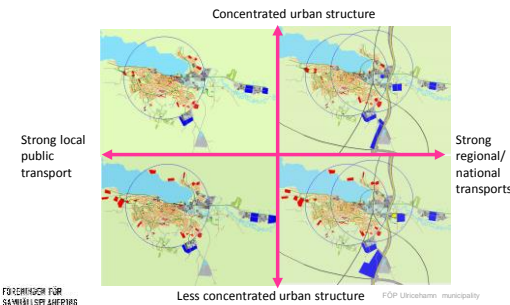
Step 8. Develop spatial scenarios
Explorative backcasting



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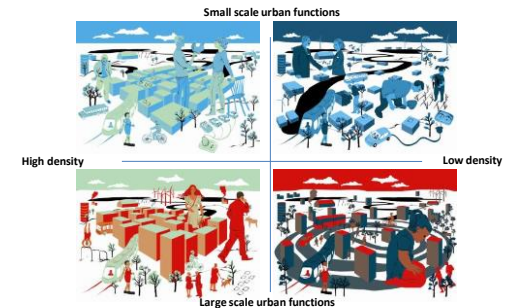
Step 8. Develop spatial scenario, explorative approach
Scenario matrix, strategic choice methodology



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Four Scenarios for a Sustainable Borås

The scenarios are used as a basis for innovative energy solutions



UR Rankin & Mads Johan Lundström, FFSKTH, Dec 2015

Step 8: Develop spatial scenarios

Structural and general planning for Luodian Town, Shanghai, China

Source: SWECO

FÖRETAGET FÜR SAMHÄLLIG PLANERING

UR Rankin & Mads Johan Lundström, FFSKTH, Dec 2015

Step 9. Evaluate future images from a sustainability perspective

Structural and general planning for Luodian Town, Shanghai, China

Criteria	Location North	Location South	Location East	Location West
Possibilities to integrate the new town with the two existing towns	0	-	-	+
Connections to the existing radial motorway (Shale Road)	0	0	-	+
Connections to existing principal street (Yue Luo Road)	+	-	-	0
Connection to Yu Jing road (planned motorway)	-	+	-	0
Location of green areas and integration of rivers and streams in the townscape (especially Di Jiang River and Ma Lu River)	0	0	-	+
Conflicts with existing areas (industrial, housing, store houses and public facilities)	-	0	+	0
Investments in new infrastructure (new connecting roads and technical utilities)	+	0	-	+
Location of town centre in relation to the new town and the two old towns	0	-	-	+
Environmental aspects (noise, fresh air etc)	-	-	0	0

Source: SWECO

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Coordinated planning of existing towns and new town

Source: SWECO

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UR Rankin, FFSKTH, Dec 2015

Step 8: Develop spatial scenarios, explorative approach

Workshop in Nyköping municipality, sustainable mobility

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UR Rankin, FFSKTH, Dec 2015

Step 9. Evaluate future images from a sustainability perspective (various tools)

VALUE ROSE / SPIDER CHART

RANKING		RANKING	
Environmental	Energy consumption	1	2
	Renewable energy	1	A
	Closed cycle	1	A
Spatial	Walkability	1	A
	Balance green/developed	A	1
	Variation	1	A
Economic	Business development	A	1
	Implementation by phases	A	1
Social/Cultural	Municipal budget	1	1
	Safety	1	A
	Equality	A	1
	Integration	1	A

Main criteria	Sub-criteria	Weight	Criteria 1				Criteria 2			
			Points	Weight points	Points	Weight points				
Environmental	Energy consumption	5	5	25	4	20				
	Renewable energy	5	3	15	1	5				
	Closed cycle	2	3	6	4	8				
Spatial	Walkability	5	2	10	4	12				
	Balance green/developed	3	4	12	3	9				
	Variation	2	2	4	5	10				
Economic	Business development	3	3	9	3	9				
	Implementation by phases	3	3	9	4	12				
	Municipal budget	1	4	4	1	1				
Social/Cultural	Safety	3	3	9	4	12				
	Equality	3	4	12	4	12				
	Integration	5	3	15	5	25				
Total				100		104				

FÖRETAGET FÜR SAMHÄLLIG PLANERING

UR Rankin, FFSKTH, Dec 2015

Step 10. Develop, present and visualize selected future image for the planning area

Ulricehamn new rapid train station

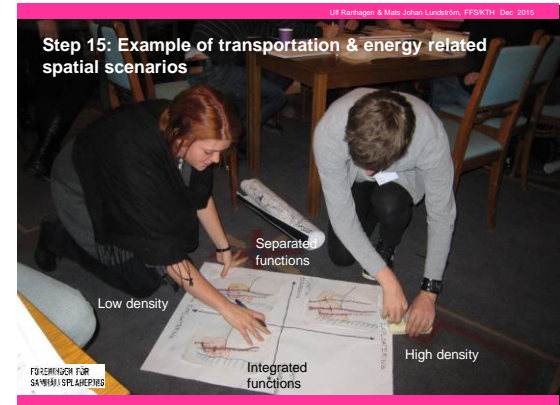
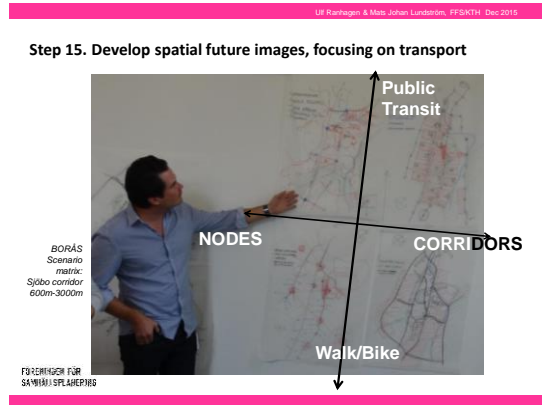
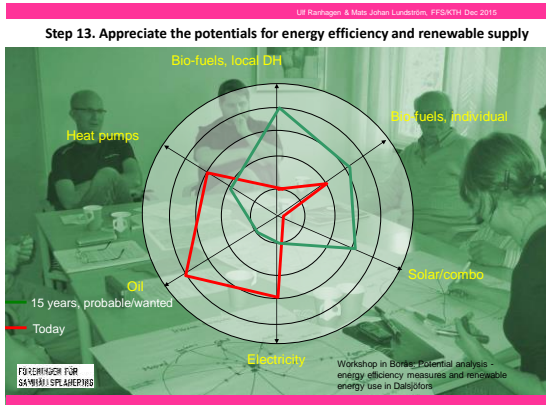
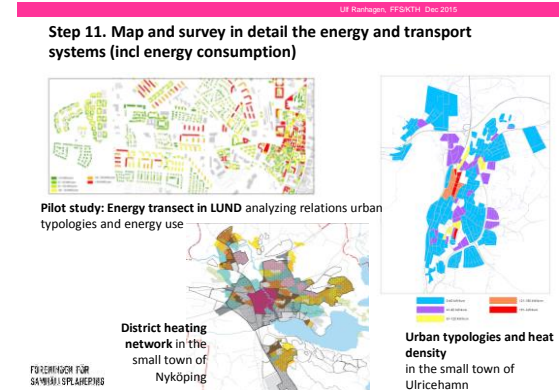
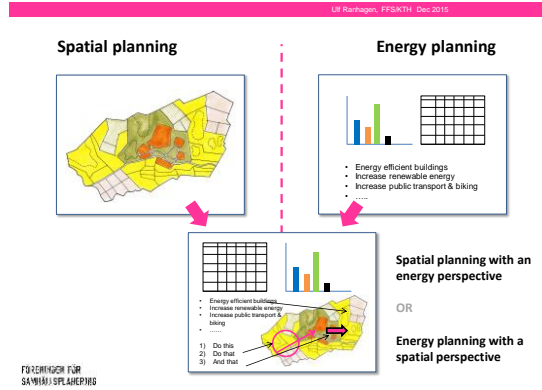
Hand- and computerdrawn perspective for illustration of the holistic view but also energy aspects

Uppsala - new city district - underground location of a power-line

FÖRETAGET FÜR SAMHÄLLIG PLANERING

Leap 3

Integrate energy issues in spatial planning



UF Rørhagen & Mats Johan Lundström, FFSKTH May

Step 11. Map and survey in detail the energy system
Example: Canton of Geneva, CH

Spatial planners and energy experts - a concerted strategy

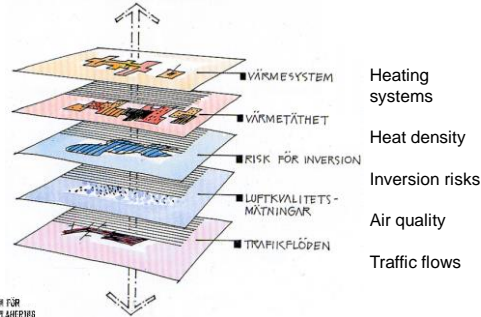
- Target**
- To develop joint strategies and coordinate energy and spatial planning among participants from different professions and industries;
 - To develop a shared vocabulary and joint tools in order to integrate energy within the territory;
 - To assert energy as a structuring component of spatial planning;
 - To integrate energy experts into the steering committees of the big urban planning projects



FÖRENINGEN FÜR SAMHÄLLISPLÄNING

UF Rørhagen, FFSKTH Dec 2015

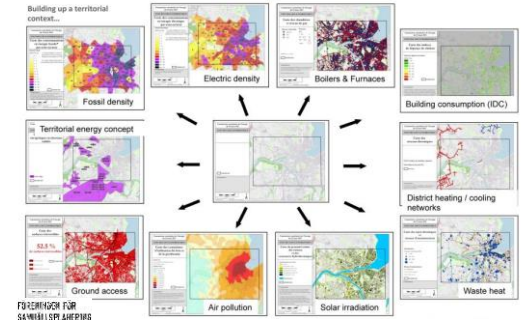
Step 12. Document the micro-climate and local environmental effects of heating/cooling/electricity and transports)



FÖRENINGEN FÜR SAMHÄLLISPLÄNING

UF Rørhagen & Mats Johan Lundström, FFSKTH Dec 2015

Step 11. Map and survey in detail the energy system
Example: Canton of Geneva, CH



FÖRENINGEN FÜR SAMHÄLLISPLÄNING

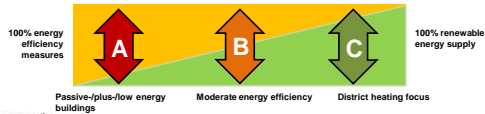
UF Rørhagen, FFSKTH Dec 2015

Step 14: Develop scenarios for sustainable energy in built environment & transports

Transport scenarios



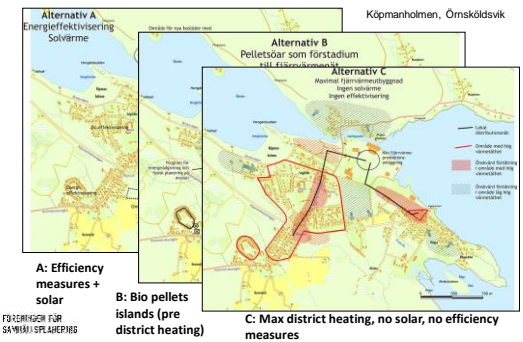
Energy scenarios



FÖRENINGEN FÜR SAMHÄLLISPLÄNING

UF Rørhagen, FFSKTH Dec 2015

Step 15: Future images/alternatives focusing on energy use and supply



FÖRENINGEN FÜR SAMHÄLLISPLÄNING

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Step 15: Example of energy related spatial scenarios



FÖRENINGEN FÜR SAMHÄLLISPLÄNING

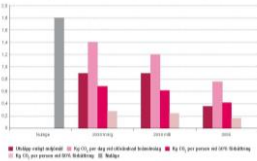
Ulf Rauhagen, FFSKTH Dec 2015

Step 16. Evaluate and assess the consequences of the spatial energy scenarios- quantitative tools



TranScen and EnScen

Calculation Models adapted to planners to estimate total energy use and emissions of CO₂ for different energy and transportation scenarios based on ModalSplit for transportation and Energy Resources Split for heating,cooling and electricity



TOOL: SCENARIO MATRIX

Exercise 1 Conceptual spatial energy scenarios

Energy and transportation related spatial scenarios

- Tool: scenario matrix
- Groups: 6 persons/group
- Task: Produce a scenario matrix using various scenario axes
- Time: 30 minutes

Ulf Rauhagen & Mats Johan Lundström, FFSKTH Dec 2015

Group exercise 1: Energy and transportation related spatial scenarios

The purpose of the exercise is to look at the future spatial development for Clomburris Strategic Development Zone. Different options of future spatial development concerning the urban structure (concentrated/polycentric development etc) should be related to different energy options, for example centralised and decentralised solutions for energy production using renewable resources.

FÖREHÅEN FÖR SAMMÅ/SPLÅEPMS

Ulf Rauhagen & Mats Johan Lundström, FFSKTH Dec 2015

Group exercise 1: Scenario matrices axes

Centralised/large scale – decentralised/ small scale energy system versus polycentric – monocentric (“fewcentric”) spatial structure

Centralised/large scale – decentralised/ small scale energy system versus dense and coherent – medium dense and coherent spatial structure

Centralised/large scale – decentralised/ small scale energy system versus public transport oriented – walking and cycling oriented mobility pattern

Centralised/large scale – decentralised/ small scale energy system versus private sector management – public management

FÖREHÅEN FÖR SAMMÅ/SPLÅEPMS

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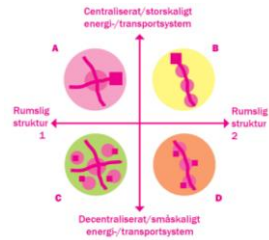
Group exercise 2: Ranking/evaluation

Goals	1	2	3	4
Encourage locally generated renewable and low emission energy – meet a proportion of total space / water heating needs and electricity needs from locally / local sources	Yellow	Red	Green	Blue
Optimal quality of life conditions – considering sustainability issues from the outset	Green	Blue	Red	Yellow
High Quality Built Environment – High quality streets, public spaces and buildings that are arranged in a legible way				
Effective and sensible design of buildings – use the design, orientation and layout of the built environment to reduce energy use				
Transport and Connectivity – create well-connected communities with good public transport services				

FÖREHÅEN FÖR SAMMÅ/SPLÅEPMS

UF Ranbagen, FFSKTH Dec 2015

Exercise 1: Scenario Development



Exercise 2: Ranking/evaluation of scenarios

RANGORDNING

	1	2	3	4
Nyckelfråga 1	Yellow	Green	Orange	Blue
Nyckelfråga 2	Green	Yellow	Blue	Orange
Nyckelfråga 3	Blue	Orange	Green	Yellow
Nyckelfråga 4	Orange	Blue	Yellow	Green
Nyckelfråga 5	Green	Blue	Yellow	Orange

SPECIAL^{FFS} advanced



Training workshop in the municipality of Kungälv (May 2015)
Key issues, scenarios and evaluation

FÖRENINGEN FÖR SAMVÄRNSPLANERING

Leap 4

Formulate an implementation & evaluation strategy

UF Ranbagen & Mats Johan Lundström, FFSKTH Dec 2015

Step 17. Document hard and soft control measures for implementing planning measures



FÖRENINGEN FÖR SAMVÄRNSPLANERING

UF Ranbagen & Mats Johan Lundström, FFSKTH Dec 2015

Step 17 Document hard and soft measures for implementing planning measures



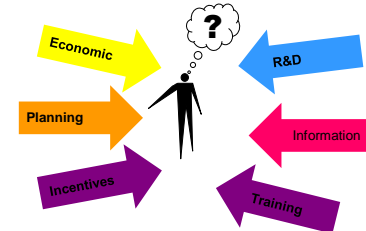
Workshop to generally analyse and prepare pros and cons of various control measures.

"It's useful to structure the various control measures to allow everyone in the group to also see the elements that they are not working with/have as a priority. This is also a way of learning new methods to utilise and possibly for changing the work on the various control measures."

Kil municipality

UF Ranbagen & Mats Johan Lundström, FFSKTH Dec 2015

Step 18. Develop forms of interaction between various actors in all stages (PBA+)



Combination of hard and soft steering instruments

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Step 19: Develop physical and digital arenas for planning, experience feed-back and follow-up



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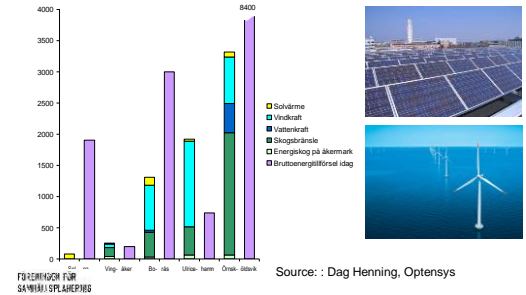
Step 19. Develop physical arenas (fora) for planning, experience feed-back and follow-up
 Orangeriet in Borås – an arena for sustainable production, consumption and citizen dialogues



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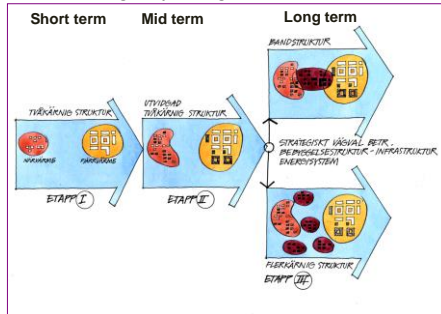
Step 20: Develop a model for implementing and monitoring the planning case

Indicators: Estimated potential of renewable energy resources in relation to the present energy supply (KWh renewables / KWh total, ha renewables/ha total etc)



UF Ranken & Mats Johan Lundström, FFSKTH Dec 2015

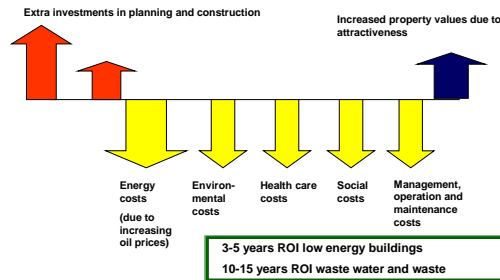
Step 20 Develop a model for implementing and monitoring the planning case



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PERFORMANCE Life Cycle Costs

The SymbioCity approach - applied in transdisciplinary collaborations - reduces the ecological footprint and contributes to favorable economic and social impacts



To reduce the ecological footprint by 80 percent in order to achieve "One Planet Living"



Swedish experiences, summing up

- Collaborative and communicative processes
- Cross-disciplinary co-operation
- Consensus at early stage
- Systems thinking
- Monitor and evaluate
- The City leads the way – a forerunner
- Planning is more than regulating



Have fun!

Develop a fantastic dialogue and creative communication that will lead to sustainable and energy-efficient plans and societies

Sustainable cities – an issue of responsibility for our and future generations...

"We haven't inherited the world from our ancestors, we have borrowed it from our children and grandchildren"



Thank you for your attention!