

# STOCKHOLM ROYAL SEAPORT



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# Challenges

- The climate challenge
- Efficient use of resources
- Population growth
- A city on the water
- Lacking institutional integration
- Resistance to change
- Create the liveable and attractive city



# Third major phase

1



1900-1920

2



1950-1970

3



2000 -

# Hammarby Sjöstad – Stockholm's first green city district

**11,000** housing units

**25,000** residents

- A symbol for the future of Stockholm
- The Hammarby model – a closed ecocycle for waste and energy



# Stockholm Royal Seaport – the next generation of green city districts

**12,000** housing units

**35,000** workplaces

- Fossil-fuel free by 2030
- Local energy production
- Circular systems



# Why sustainability profiling?

If we don't change our way of living –  
how can we expect others to?

- Test-ground to apply BAT and best processes + evaluate results => how far do we get?
- International model for sustainable urban planning
- Consolidating Stockholm's position as a leading sustainable capital city
- Support marketing of Swedish clean-tech solutions

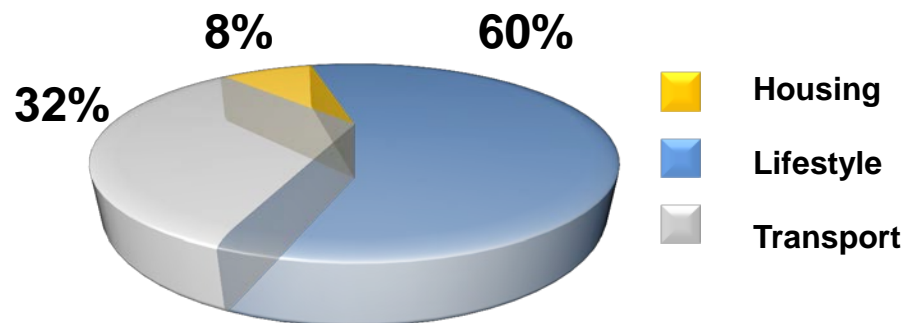




# The Sustainable City

It should be easy to:

- Live in a sustainable environment
- Be resource efficient
- Understand the supporting techniques
- Walk, bike or use public transport
- Be healthy and enjoy



Share of CO<sub>2</sub>-emissions per capita

Source: ARUP Urban Design Studio 2012

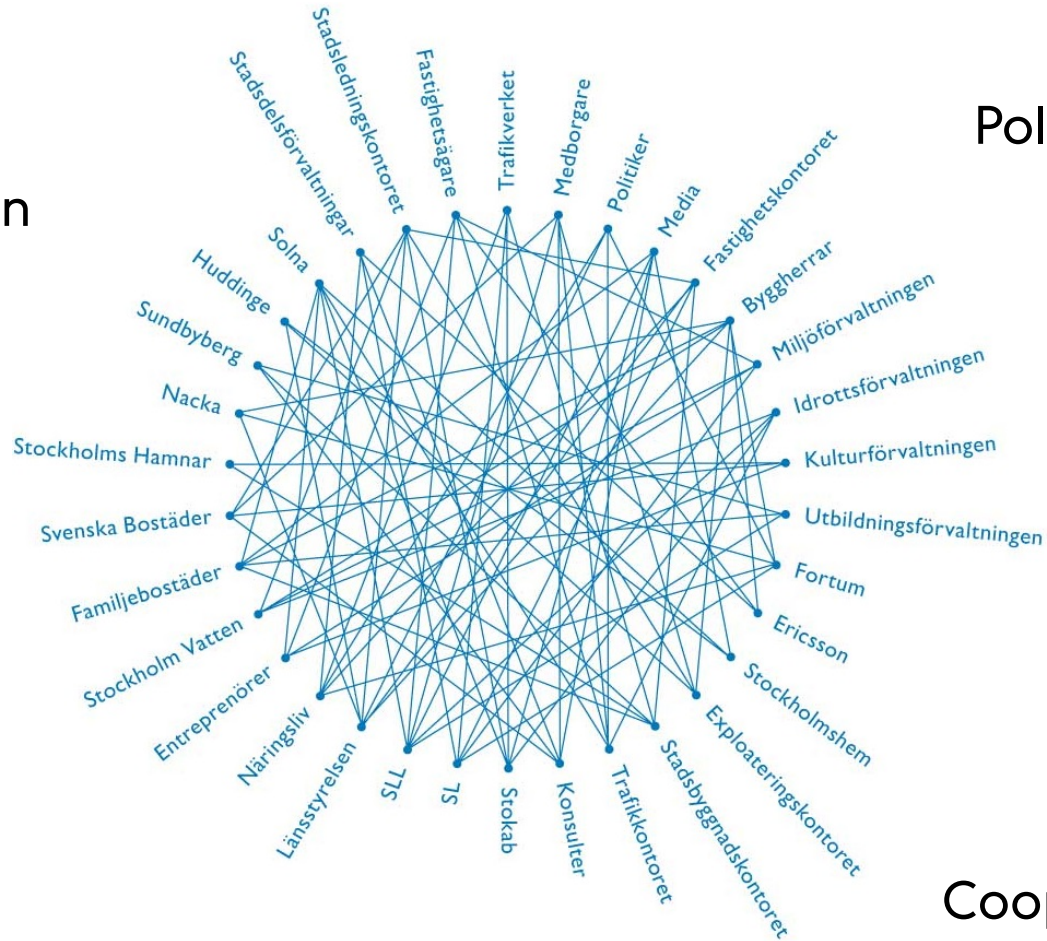
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# Important principles

Common vision

Political support



R & D

Land owner

Cooperation & Integration

Dialogue





# Our process

## 1. Decentralised decision-making

## 2. Dialogue

- Cross departmental collaboration
- Cooperation with investors
- Public participation

## 3. Tools

- Requirements on developers
- Capacity development
- R&D
- Continuous monitoring
- Publish results



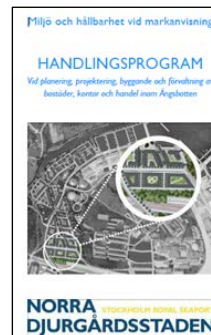
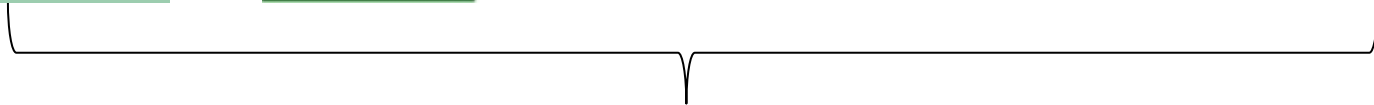
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# Meeting the Challenges



Visions and goals



Action plans

# Vibrant City



*Mixed use*

*Make use of natural flows*

*Intense spots – interesting destination*

*Active and open ground floors*

*Welcoming for all*



# Availability and proximity



*Mixed use – reducing the need to travel*

*Connect – walk ways, bike lanes, etc*

*Concentrate – high degree of exploitation supports attractive public transport*

*Available to all – the child's perspective in transport planning*

*Traffic hierarchy – prioritise walking, biking and public transport*

*Efficient supply to the city – consolidation of goods*

*Construction Consolidation Centre*



# Let nature do the job



*Eco systems services – develop and quantify the value*

*Multi functional green spaces –biodiversity + stormwater management + recreation*

*Strengthen biological structures – connect and expand (Green Space Index)*

*Greenery for climate adaptation – local stormwater management*



# STADSNATURENS SAMHÄLLSVINSTER



# Participation and Learning



*Test-ground for a growing Stockholm*

*R&D – industry, academia and public sector in close cooperation*

*Capacity development for the City, investors and contractors*

*Extended community participation – public meetings, exhibitions and social media*

*Meeting places – outdoors and indoors*

*Community activities – urban farming, bee keeping, thematic workshops*

*Easy to do the right thing – bike and car pools, concepts for sharing economy*



# Responsibility for climate and resources



*Fossil fuel free by 2030*

*Energy efficiency – energy efficient buildings and transport,*

*Circular systems – recycling of resources (energy, material, water)*

*Local production of energy – requirements on investors*

*Limit the use of hazardous substances in building materials*

*Lifecycle perspective*

*100-year perspective on infrastructure*





+ energy buildings



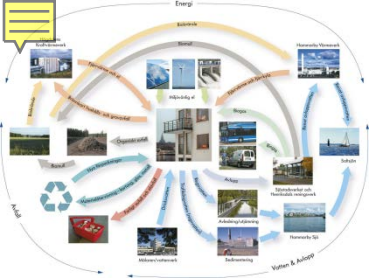
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# Recycling systems

## Principles

- Increased reuse
- 0% waste to landfill
- Collect /reuse of nutrients from organic waste





**ENERGI**

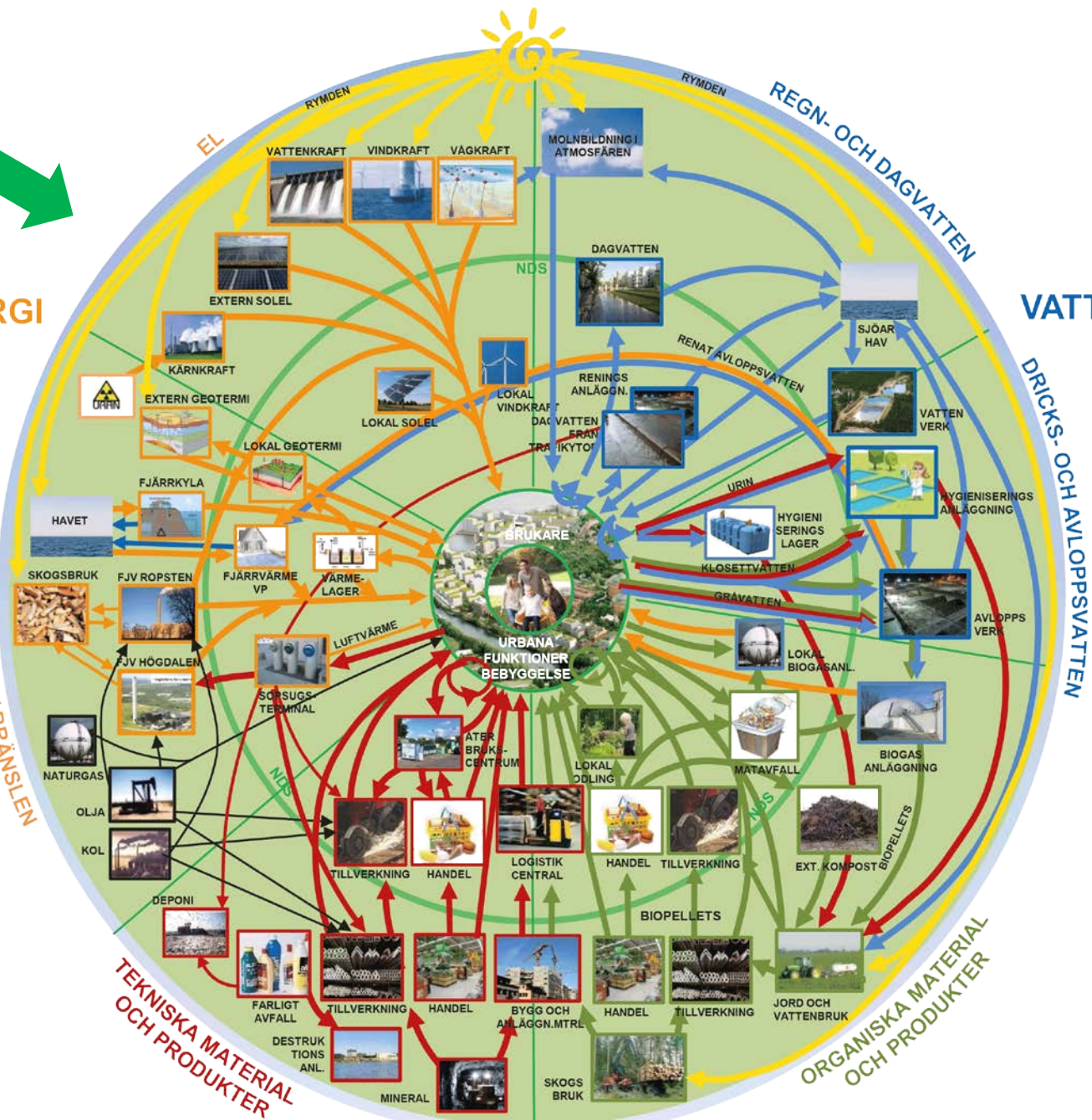
**VATTEN**

**VÄRME KYLA / BRÄNSLEN**

**TEKNISKA MATERIAL OCH PRODUKTER**

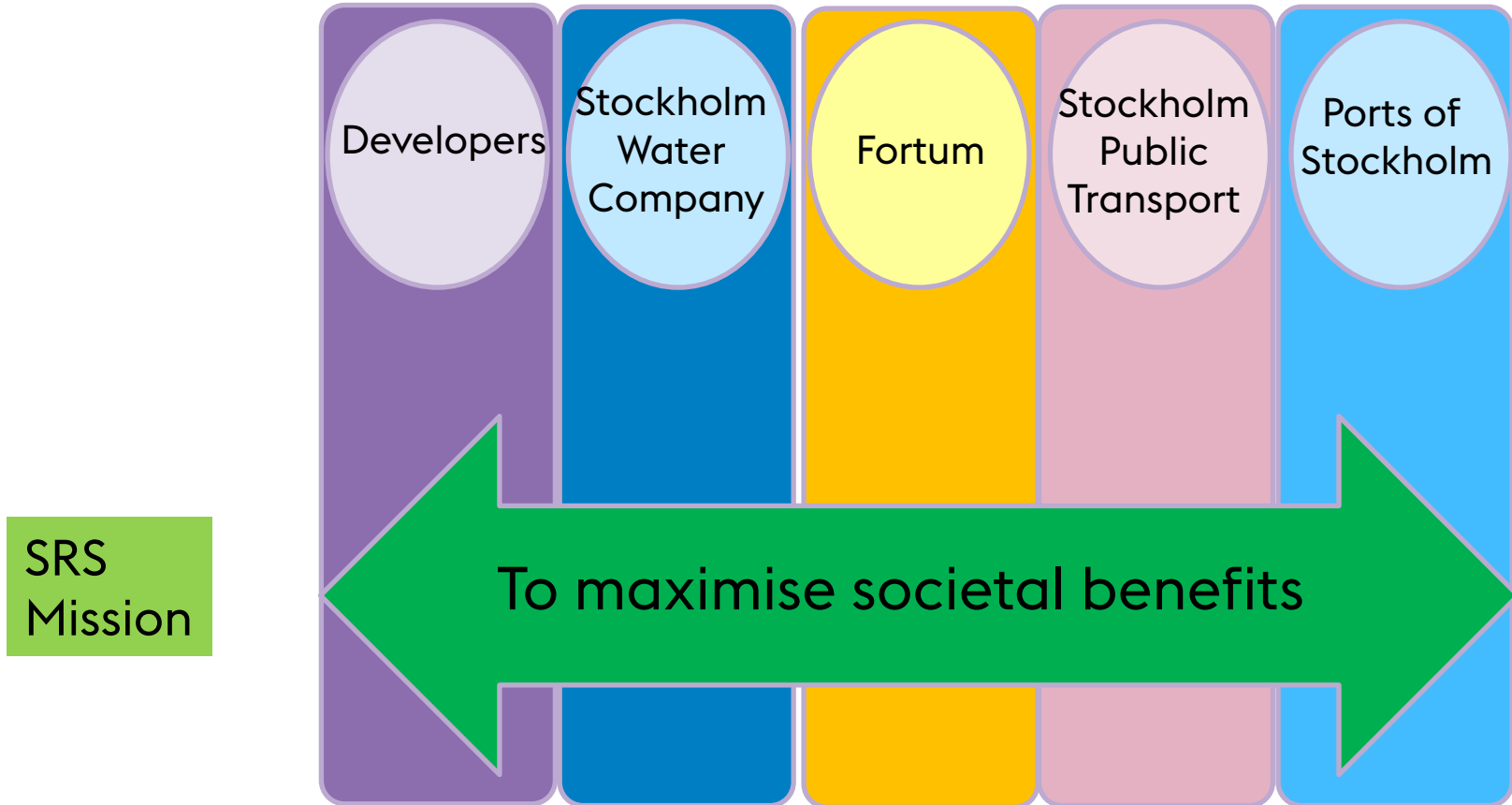
**ORGANISKA MATERIAL OCH PRODUKTER**

**MATERIAL**



**Stockholms stad**

# The Importance of Integration



# Stockholms wastewater systems

## **Stockholm has one of the most efficient wastewater management systems in the world**

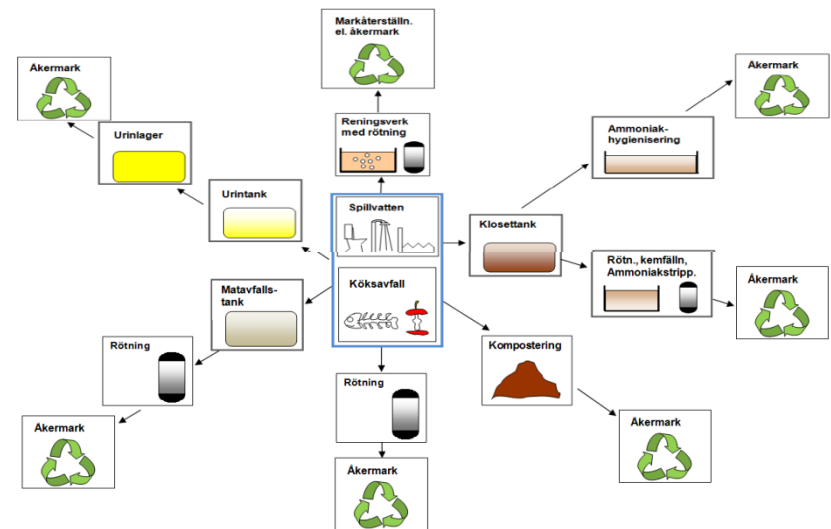
- 100 % coverage
- Extremely efficient reduction (P=96%, N=77%, BOD<sub>7</sub>=98%)
- Energy efficient treatment (0,34 kWh/m<sup>3</sup>)
- Biogas production replacing fossil fuels in the public transport (15,8 Nm<sup>3</sup> annually)
- Heat recovery from wastewater (1 100 GWh annually)
- Residue sludge certified for use in agriculture

## Why change the system?

# Why change the system in the SRS?

For the purpose of

- taking in the agricultural perspective
  - To produce fertilisers of higher quality
  - To increase the environmental sustainability by closing the cycle of food production (nutrients)
  - To strengthen the urban – rural connection
- reducing the resource use from affluent societies
- gaining experience by scaling up systems that have been tested and proved in smaller developments
- demonstrating that the principles of sustainable sanitation is applicable in dense urban areas



Source: *Urban Water 2011*



[www.stockholm.se/norradjurgardsstaden](http://www.stockholm.se/norradjurgardsstaden)  
[www.stockholmroyalseaport.com](http://www.stockholmroyalseaport.com)