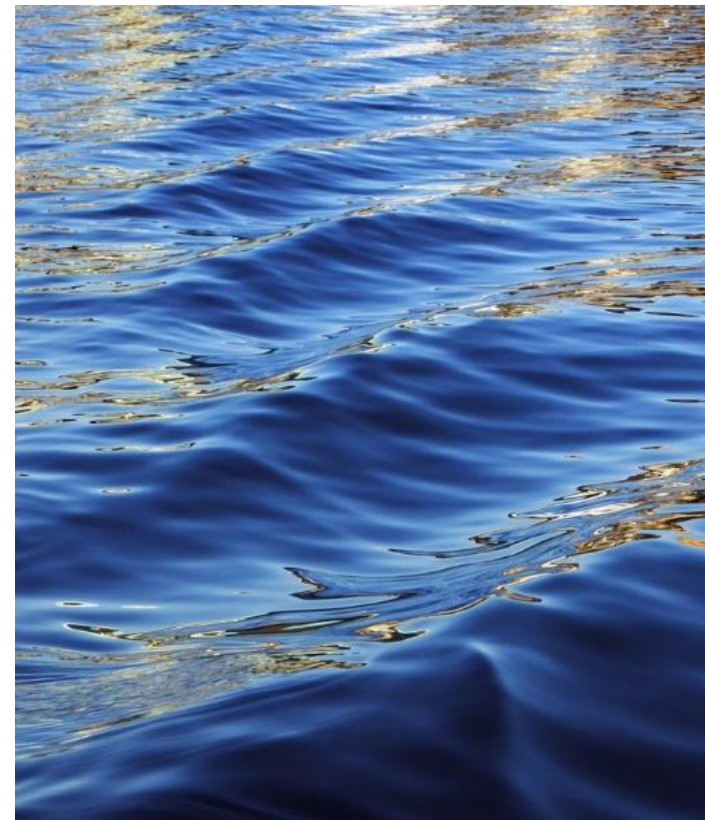




Sustainable Communities



Main themes

- Sustainable transport
- Waste management
- Water sustainability
- Sustainable housing
- The Green city tool
- Ecovillage – an example of sustainable community
- Class discussion

SUSTAINABLE TRANSPORT



New York Community Mobility



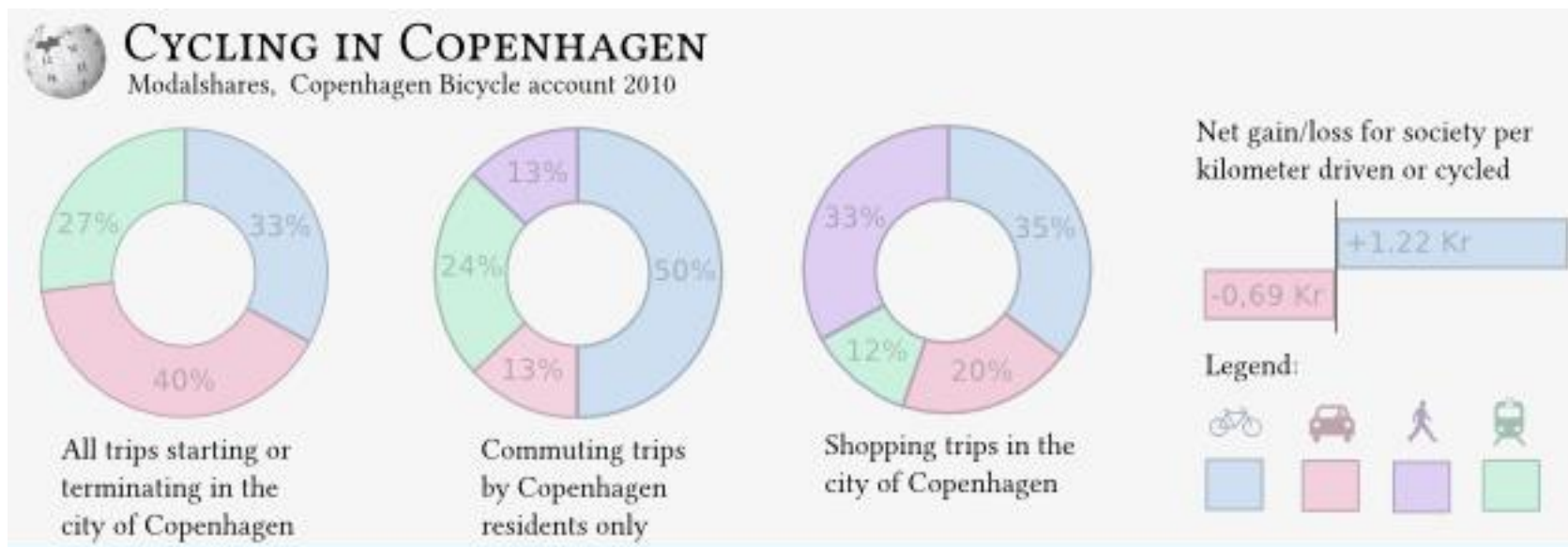
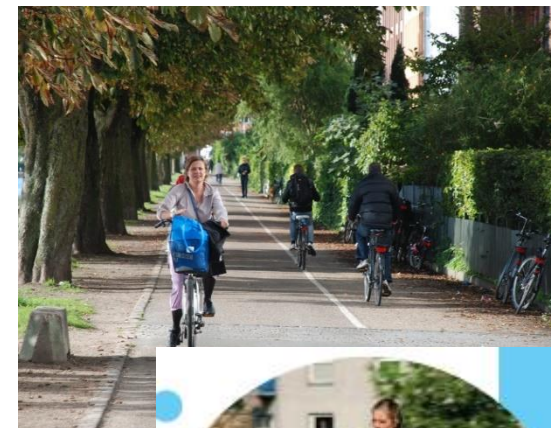
- Community Carpooling, since 2009
- Sponsored by the New York State Department of Transportation with the goal of reducing traffic congestion and improving air quality in New York.
- New York State's home for ride matching, commuter and traveller services
- In NYC, around 10% carpool, compared with only 2% who take taxis
- <http://www.mytwintiers.com/news/local-news/rideshare-program-extends-to-schuyler-county/689964813>



<https://511nyrideshare.org/web/arc-of-rockland/carpool>

Copenhagen Bicycle Network

- Copenhagen (referred to as a city of cyclists) has a target that 75% of all movement will be on foot, by bike or by public transport
- 44% bike to work & school in Copenhagen
- 1 in 4 families with 2 children own a cargo bike



Copenhagen Bicycle Network (ctd)

- Improved networks, bike storage
- Innovation eg. footrests at intersections
- Maintenance stations
- Improved safety



Copenhagen – Bike Share

- Bike Share System – Bicyklen
- Electric bikes with a touchscreen tablet for navigation, payment and guidance to points of interest in Copenhagen.



Singapore – Electronic Toll System (ERP)

- Singapore is the first city in the world to implement electronic road tolling system to address road congestion
- Congestion-based pricing
- Road pricing is an effective economic instrument to reduce congestion, and to limit the growth in private vehicle travel demand.
- <https://www.youtube.com/watch?v=kFO7wdqUoIA>



BOGOTA - TRANSMILENIO

- Lines and stations like a metro system, but with buses
- Buses are electric
- Reduced carbon footprint
- Lower construction footprint and cost than a metro system
- <https://www.youtube.com/watch?v=SRGoketbIZE>



Waste Management



San Francisco – Zero Waste

- San Francisco is ranked 1st in USA for waste management
- 80% of waste currently diverted from landfills
- Reuse, recycling and composting
- Community based activities - reuse and backyard composting
- Municipal recycling and organics collections
- Aiming for Zero Waste by 2020
- <https://youtu.be/Cg3OA1s8-SI?list=PL6CoBDD897A497CF6>



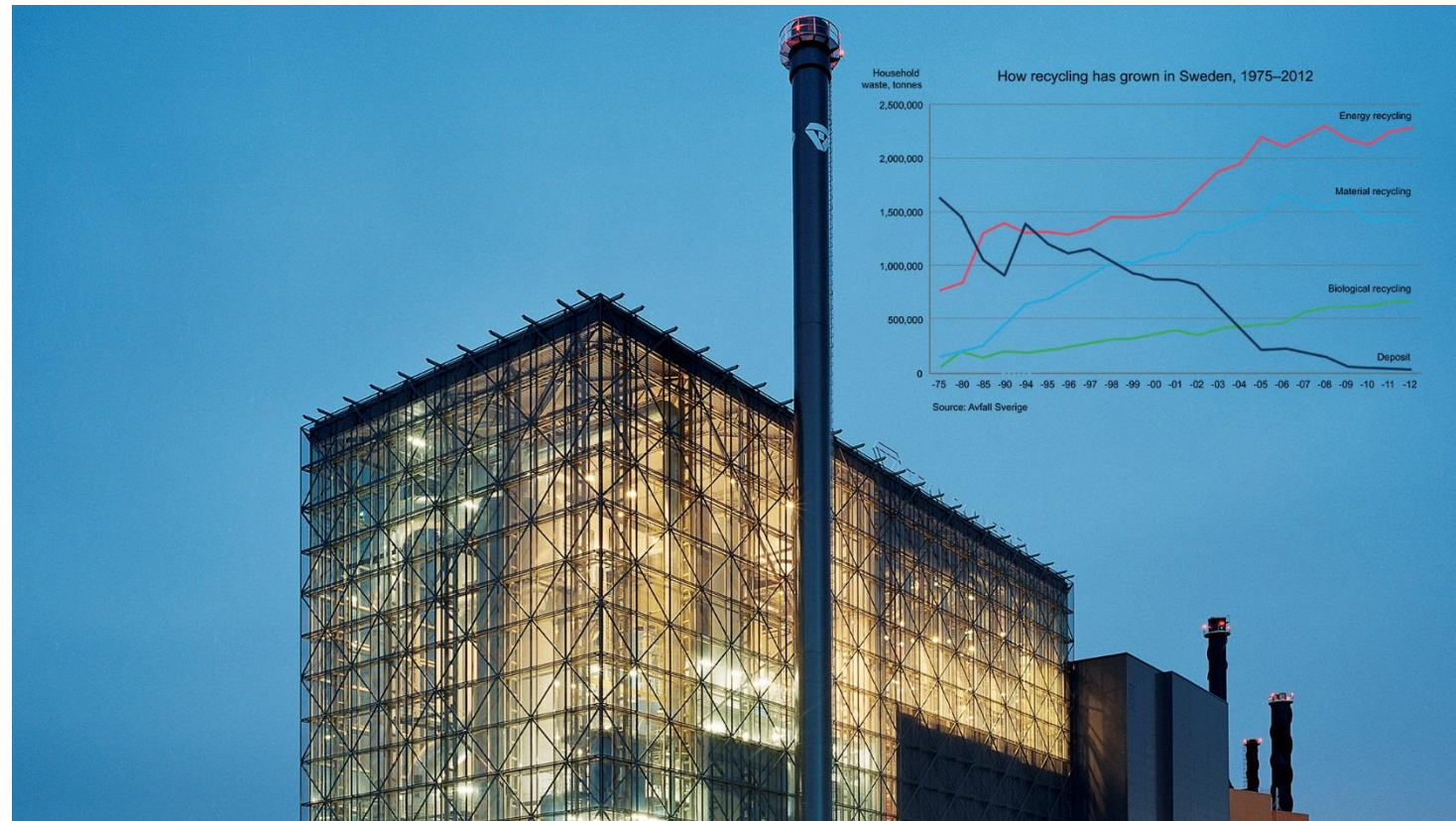
THE SWEDISH RECYCLING REVOLUTION

- Swedes recycle nearly 100 per cent of their household waste
- Recyclables are separated in the home (newspapers, plastic, metal, glass, electric appliances, light bulbs and batteries) and then left in special containers at the end of the street for collection.
- <https://vimeo.com/103801887>



Sweden – Waste to Energy

- 50% of household waste gets burnt to produce energy (“waste to energy”)
- They often have to import waste to have something to burn, to turn waste into energy.



WATER SUSTAINABILITY

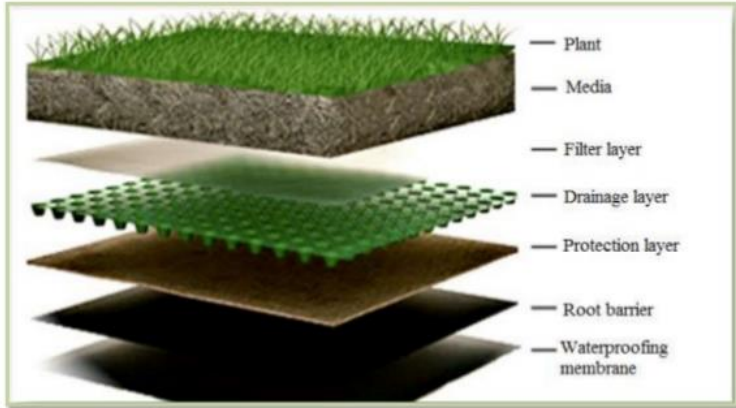


ROTTERDAM

- Green roofs (rainwater harvesting) – reduce runoff and pressure on pipe networks
- Water plazas – public open spaces designed to be control-filled with stormwater to prevent flooding of surrounding areas
<https://www.youtube.com/watch?v=kujf4BTL3pE>



Anatomy of a green roof



ROTTERDAM

- Multifunctional carparks – large underground storage to temporarily store rainwater to protect the cities sewage system in heavy rain events
- Museumpark- underground water capacity around 10000 m³



CURITIBA (BRAZIL) – GREEN CITY

- 52m² green space per capita – “greenest city in the world”
- Parks double as stormwater management facility
- Citizens empowered to keep the city clean through trash & recycling programs in exchange for bus tokens, food and cash – encourages population to respect and care for their city
- https://www.youtube.com/watch?v=TeBRWrYeb_g



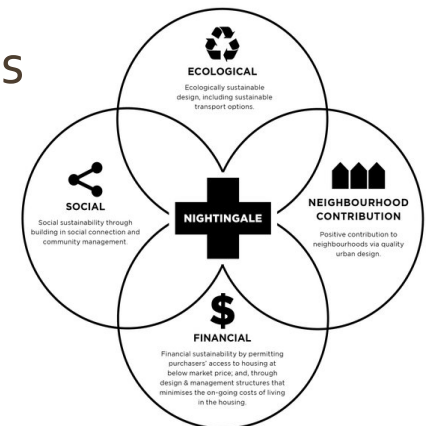
Nightingale Project

What is it?

- High quality multi residential housing
- Fosters environmental & social sustainability
- Strengthens community
- Not all based on a 3-bed house

Reason behind the project

- Australia's population will grow from 22 to 36 million by 2050, which means that 6.5 million new housing units will be required in the next 35 years



Nightingale Project

Solution



Objective

New housing will be required which integrates access to

- Transport
- Employment
- Services
- Sustainable living

It's designed to meet the needs of Australia's ageing society and families who want to be located close to the CBD.

Classification



Intense Housing(Nightingale)

Support housing in urban environment that encourages healthy well being, community and liveability



Hobsonville Point



- Hobsonville Point is a peninsula that extends out into the Waitemata Harbour
- 20min drive northwest of Auckland's CBD
- Until recently it was a defence base but it is now being developed into a sustainable community project

Hobsonville Point

Reason behind the project

- New Zealand's towns have traditionally grown organically.
- The problem with organic growth is that the facilities are always one step behind.
- The Hobsonville Land Company has been given the go ahead by the New Zealand government to take the opposite approach and build a master planned community

Hobsonville Point

Solution – A sustainable approach

Create a well designed Urban Plan

What that means is that by the time the houses are all built the community will already have everything it needs to thrive, purpose-built to the right scale and located in the right place.

- Parks
- Well-planned roads
- Schools
- Community hall
- Jobs in the neighbourhood
- Access to public transport to the CBD
- Shopping centres a short drive away and local restaurants, bars and cafes;
- Family homes
- Apartments by the water

Classification



Diverse Housing

- 167 hectares of land
- Located 11km from Auckland CBD
- Heat pump/solar hot water
- Insulation levels above the building code and double glazing
- North facing homes
- Energy efficient lights
- A tank that catches rainwater from the roof to be used in toilets, laundry and garden
- Water efficient showers, toilets and taps
- Fold away washing lines so that you don't have to use the dryer as much

Green city tool

This tool is both a simple self-assessment and benchmarking tool for cities, and a source of information and advice for anyone wanting to learn more about how we can make cities greener and more sustainable. This tool is all about city governance and the approach taken to sustainable urban planning – it is not about quantitative indicators of sustainability, although it will guide you to the best places to find such information.

- <https://webgate.ec.europa.eu/greencitytool/topic/>



European Green capital

Starting in 2010, one European city is selected each year as the European Green Capital of the year.

Criteria for selection:

- ✓ Has a consistent record of achieving high environmental standards;
- ✓ Is committed to ongoing and ambitious goals for further environmental improvement and sustainable development;
- ✓ Can act as a role model to inspire other cities and promote best practices to all other European cities.

[Stockholm in 2010](#), [Hamburg in 2011](#), [Vitoria-Gastiez in 2012](#), [Nantes in 2013](#), [Copenhagen in 2014](#), [Bristol in 2015](#), [Ljubljana in 2016](#), [Essen in 2017](#), [Nijmegen in 2018](#), [Oslo in 2019](#), [Lisbon in 2020](#) and [Lahti in 2021](#).

http://ec.europa.eu/environment/europeangreencapital/index_en.htm



The Global Liveability Index 2017 – 2019

2017

Sl	City	Country
1	Melbourne	 Australia
2	Vienna	 Austria
3	Vancouver	 Canada
4	Toronto	 Canada
5	Adelaide	 Australia
	Calgary	 Canada
7	Perth	 Australia
8	Auckland	 New Zealand
9	Helsinki	 Finland
10	Hamburg	 Germany

2018

Sl.	City	Country
1	Vienna	 Austria
2	Melbourne	 Australia
3	Osaka	 Japan
4	Calgary	 Canada
5	Sydney	 Australia
6	Vancouver	 Canada
7	Tokyo	 Japan
	Toronto	 Canada
9	Copenhagen	 Denmark
10	Adelaide	 Australia

2019

Sl.	City	Country
1	Vienna	 Austria
2	Melbourne	 Australia
3	Sydney	 Australia
4	Osaka	 Japan
5	Calgary	 Canada
6	Vancouver	 Canada
7	Tokyo	 Japan
	Toronto	 Canada
9	Copenhagen	 Denmark
10	Adelaide	 Australia

Ecovillage – Awaawaroa Bay Eco Village

- Began in 1994 with a group of people interested in ecological restoration and community
- The land comprises a restored wetland ecosystem, now a sanctuary for NZ's indigenous long-finned eel/tuna and other native fish
- Home to a variety of native birds including Bittern, Ruru, Kereru, Banded Rail, Dotterels, Spotless Crake, Brown Teal and Kaka
- Currently about 40-50 adults and children who live in the village, from four to 73 years of age
- The village is governed through monthly meetings and working bees, with decision-making process through consensus
- To protect the native wildlife, there are no cats or dogs on the properties
- Limited mobile phone coverage, an off-the-grid home and a composting toilet.



Ecovillage – Earthsong Eco-Neighbourhood

- A model of socially and environmentally sustainable urban living.
- Purpose is to address the isolation and high resource use of conventional settlement patterns
- Applies the principles of green architecture and services on a neighbourhood scale
- Cohousing design – a form of collaborative housing where residents actively participate in the design and operation of their own neighbourhoods.
- Sustainable practices have been incorporated in the various design: water supply, stormwater, wastewater, energy and solid waste.

(Read more on <https://www.earthsong.org.nz/design-development>)



Discussion

In what ways can you contribute to improving sustainability on campus or at home?

References

- <http://snohetta.com/project/188-zeb-pilot-house>
- <http://nightingalehousing.org/nightingale2/>
- <http://scholarship.sha.cornell.edu/cgi/viewcontent.cgi?article=1102&context=crer>
- <file:///C:/Users/aniumata/Downloads/Nightingale+Housing+Constitution+-+Final.pdf>
- http://www.hobsonvillepoint.co.nz/images/library/Panorama_9.jpg

Thank you!



for listening 😊