



## Sustainability in Urban Planning

### 8 dogmas for sustainable towns and cities

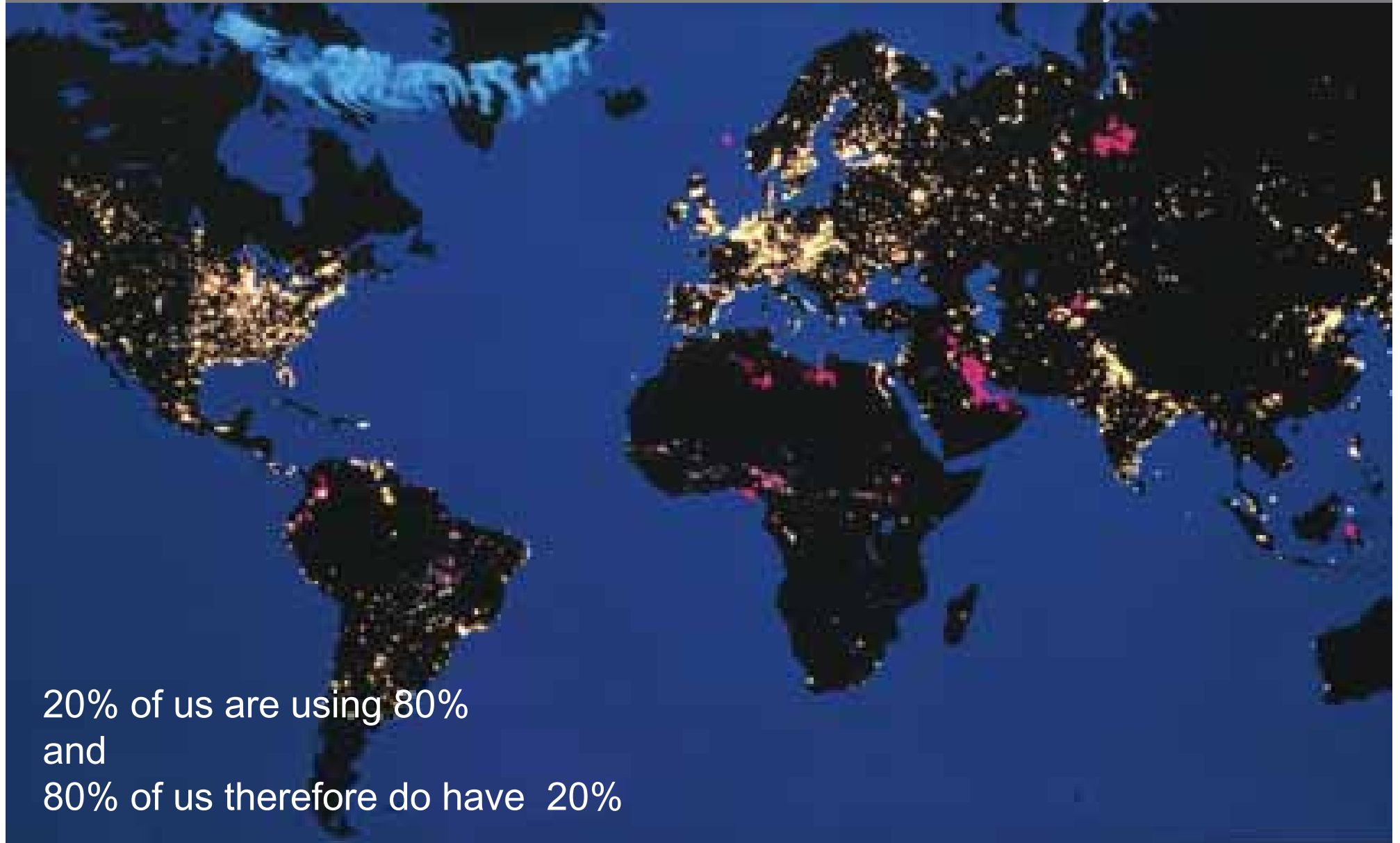
# What is happening on this Planet ?

Living in towns :

Denmark 89%

Europe 80%

Globaly 50%



# Talking about the built environment



"Action plan for a sustainable building sector" 2001 The Danish Building Panel

**1. Energy consumption**

**2. Materials and garbage**

**3. Dangerous substances - for health and environment**

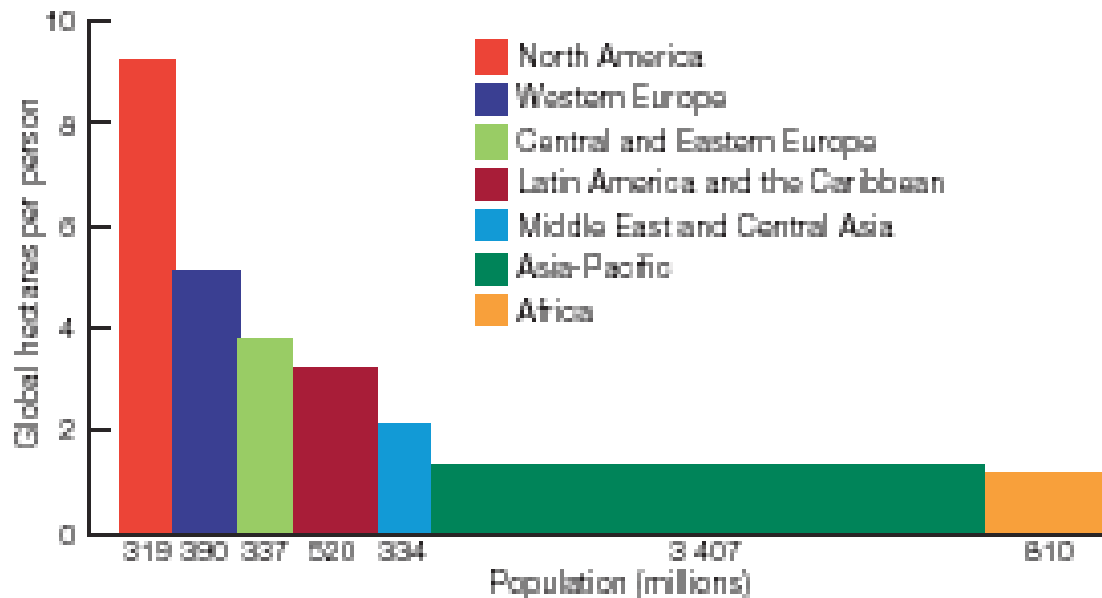
Addition by the Danish Ecocouncil ( [www.ecocouncil.dk](http://www.ecocouncil.dk) )

**4. Protect and improve nature**



# The Ecological Footprint by Region

Fig. 17: ECOLOGICAL FOOTPRINT BY REGION, 2001



Denmark is no. 9 using 6,5 Ha  
USA is no.1 using nearly 10 Ha  
Namibia using only 1,5 Ha

**We do have about 2 Ha**

More than one planet is needed !!!

The area You need to grow your food, and the fibres you need.

And the area needed to absorb your garbage and to give space for your infrastructure



## 8 dogmas for sustainable towns and cities

1. Minimum use of land resources
2. Public transport – less transport
3. Mixed use – living and working in short distances
4. History of the place to be alive
5. Healthy towns and cities
6. Green urbanity
7. Local cyclus
8. Energy neutral communities





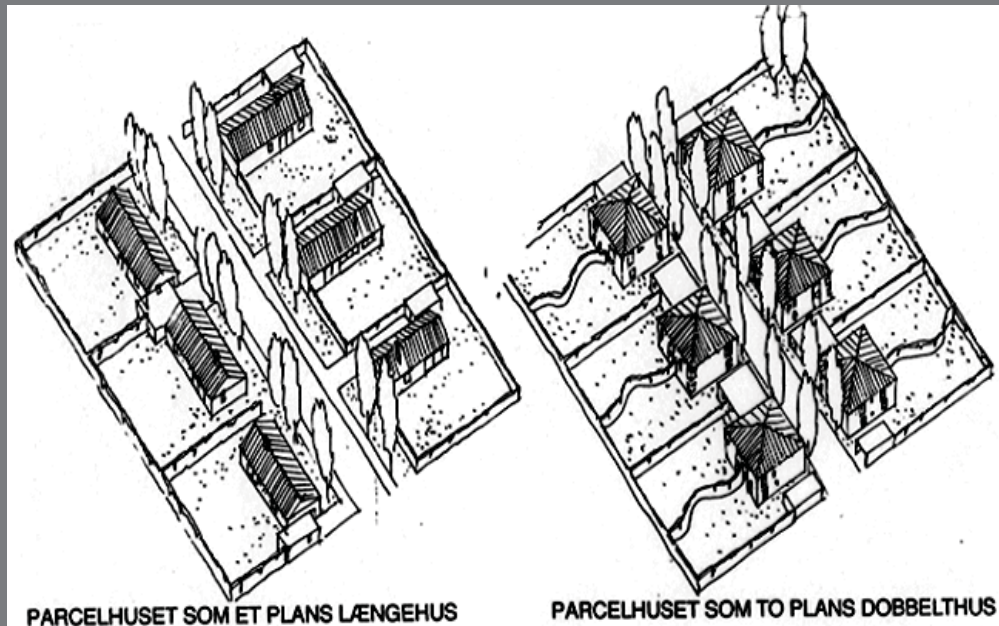
## The compact and green urbanity

Urban areas to be more intense, full of life and experience, dense - using less energy, needs less transport





# Dogma 1: Minimum use of land resources



6 or 12  
one family  
houses





## Private housing in Wolfurt, Østrig – Gerhard Zweier



- 8 flats in 2 houses
- private garden or terrasses
- Solar panels on the roof
- 13,5 kWh/m<sup>2</sup>/y for room heating
- passive house



# Density in a human scale in Denmark



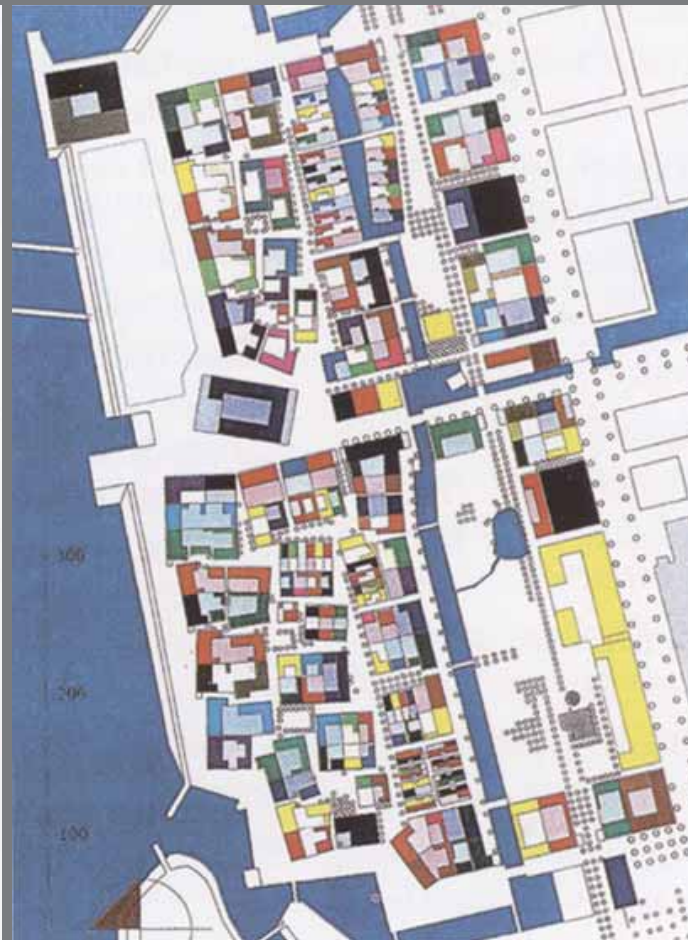
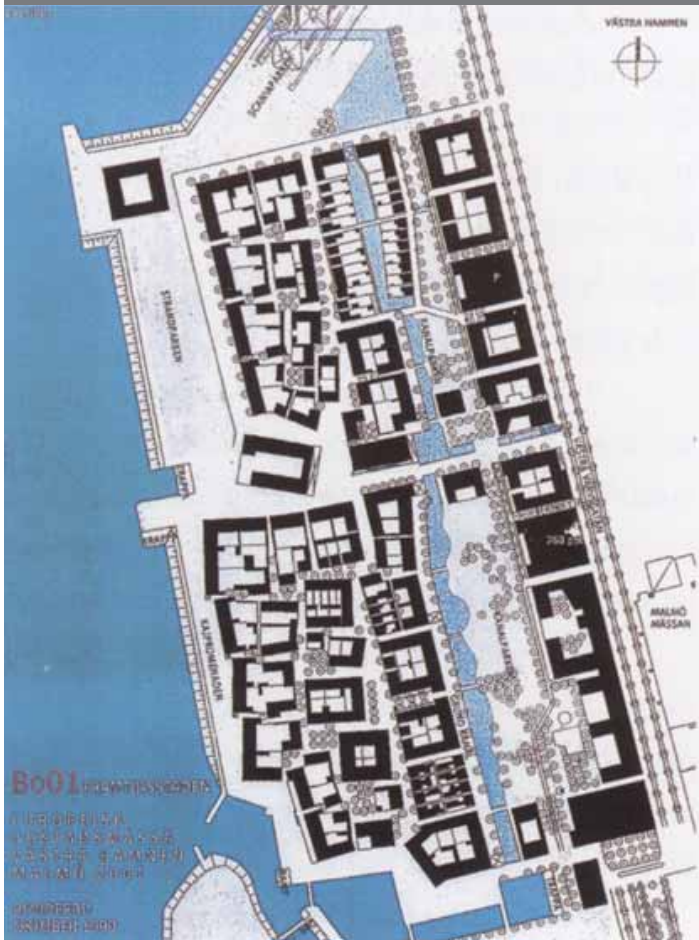
Research city Odense: SLA, CFMT, Alectia 2009, ca 120%



And an Arup vision of Dongtan China – green city for millions



# Bo01 Malmö Sverige



- Minimum land use
- Renewal energy
- Eco index for nature
- Garbage sorting



# Kronsberg Hannover Tyskland



- Passive houses
- High density
- Biodiversity
- Public transport



# Hammarby Sjöstad Stockholm Sweden

- High density
- Renewal energy
- High biodiversity
- Closed cycles





## Dogma 2. Public transport - less transport



In Hammarby Sjöstad  
busses run on biofuel

London are for  
roadpricing



In Hasselt, Belgium the inner  
city is free of cars, busses are  
free of charge



Local shopping  
in Rome

## Dogma 3. Mixed use – living and working in short distances

- Minimum infrastructure
- Flexible use of building structure

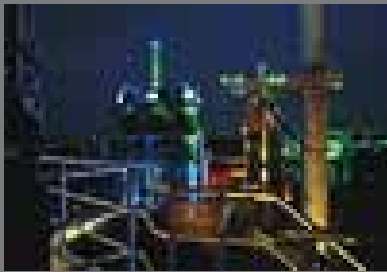


”A city should be the place for a little boy to find his way in life ”  
Louis Kahn, arkitekt



# Dogma 4: History of the place

- continuity and identity





## Dogma 5. Healthy cities and towns



Something green to enjoy



Clean harbour  
Copenhagen



To touch  
to smell  
to hear





## Dogma 6 Green urbanity - infiltration



- Better microclimate
- Physical and mental wellbeing





# Nature in the public space

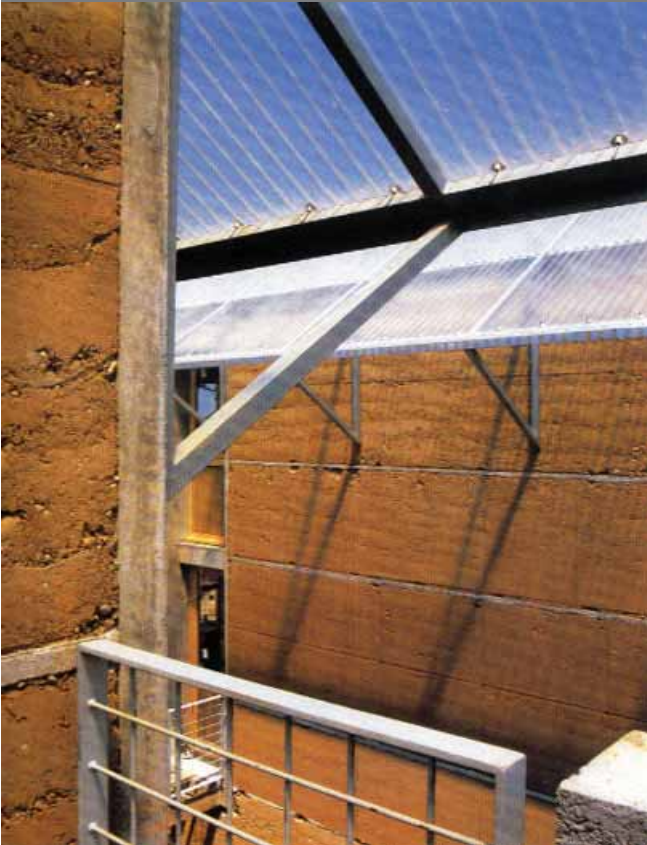


Eco-  
index





## Dogma 7. Local cyclus – resources



Cradle to cradle





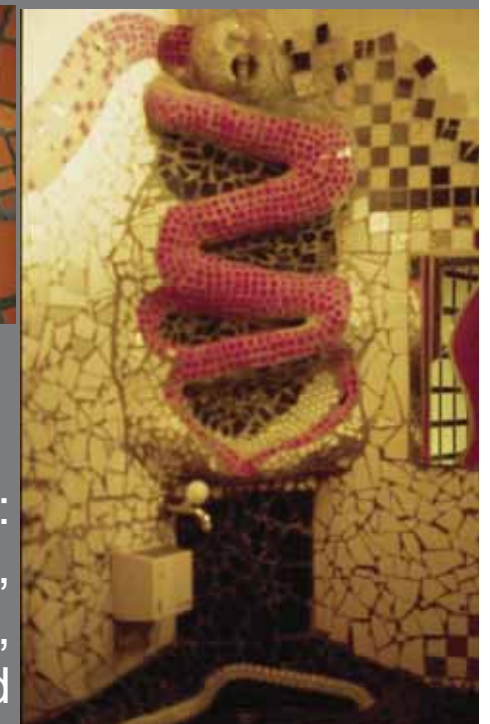
# Recycling

Gaudi:  
Parc Guell,  
Barcelona,  
Spanien



Hundertwasser

Hübner:  
Fritidsklub,  
Stamheim,  
Tyskland





# Recycling urban structures

Student hostel  
Oslo Norway



Green office building



Ship engines factory Altona, Tyskland





## Dogma 8. Energy neutral communities



By 2017 all new building in Europe should be energy neutral (EU parliament 2009)

1. Minimum energy need
2. High efficiency
3. Renewal energy

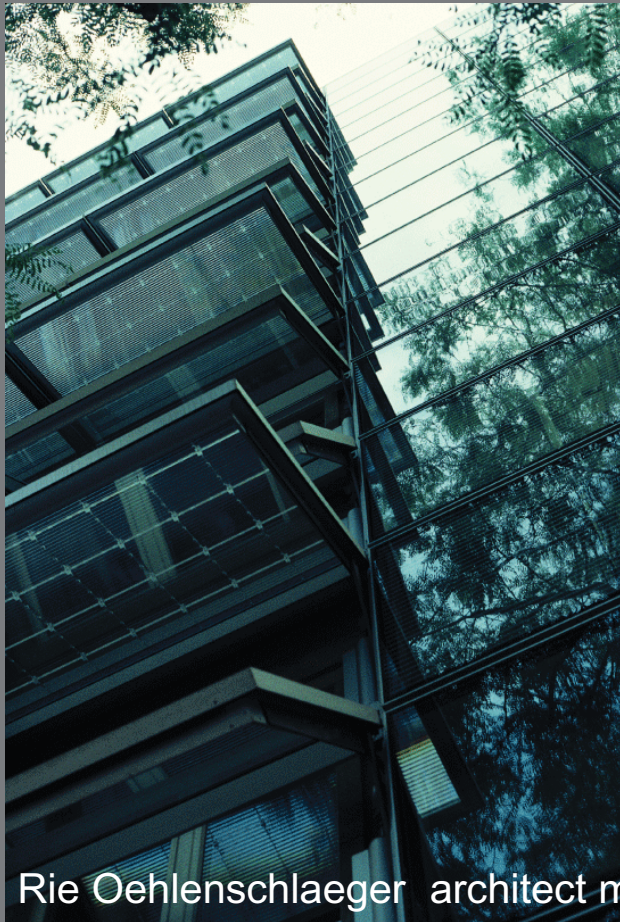




# A Danish building sector initiatives: Energy neutral House, the residential **House+ Concept**



- LE 1-standard total energy frame 40-45 kWh/m<sup>2</sup>
- Energy neutral on a yearly basis incl. 1700 kWh/year private consumption



[www.BoligPlus.org](http://www.BoligPlus.org)



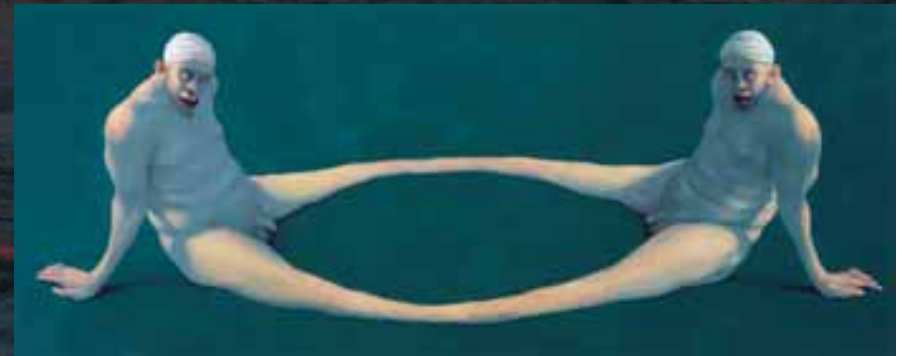
The sun and the wind creates  
power without CO<sub>2</sub> emission





# The compact and green urbanity – yes we can – if:

- Political decisions
- Legislation
- Financial inspiration



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