

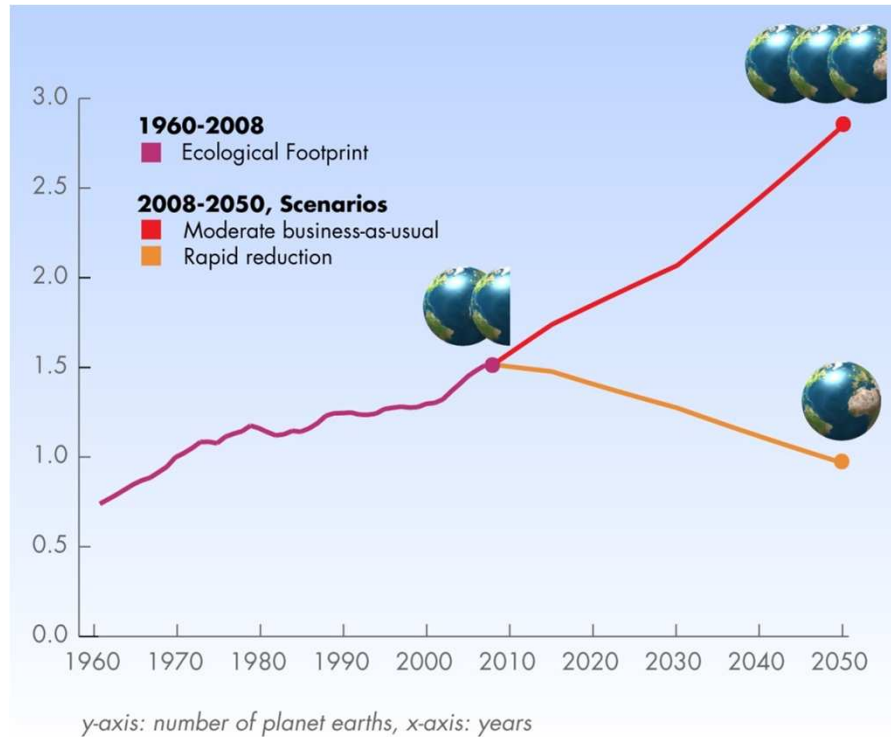
An architectural rendering of a modern green city development. The scene features a central cluster of multi-story, glass-walled buildings with flat roofs, surrounded by lush green lawns and walkways. A winding river flows through the development, with several bridges crossing it. In the background, there are large, curved, green-roofed structures and a tall, modern skyscraper. The sky is a mix of blue and light orange, suggesting a sunrise or sunset. The overall atmosphere is clean, modern, and environmentally conscious.

**DREES &
SOMMER**

Advanced Building Technologies

GREEN CITY DEVELOPMENT

Background



Quelle: Global Footprint Network

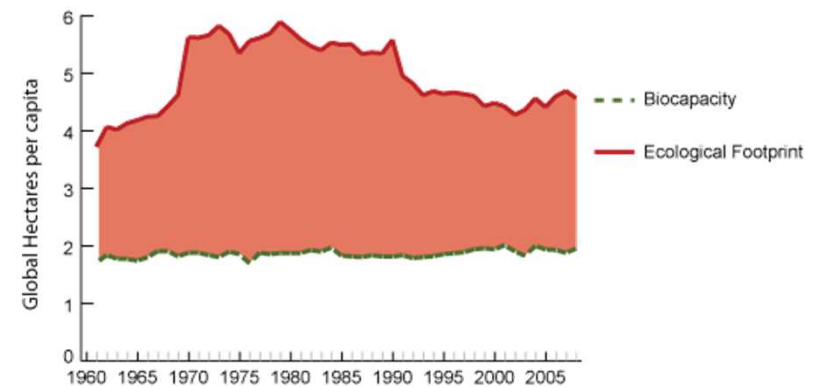
Why is sustainable neighborhood development important?

We only have one earth!

The human demand for raw materials is nowadays grown far beyond what the earth can provide. Currently, we consume about 50% more than are present in natural resources.

This global transgression means that we more and more waste and destroy the biological capital on which our society is built, while around us the mountains of garbage grow. The painful reality will catch us in the coming decades and the impact of our global wastes will get more and more impact on our daily lives.

Although Germany has taken a leading role in sustainability around the world, we Germans still consume more than twice of our natural biocapacity.



Quelle: Global Footprint Network

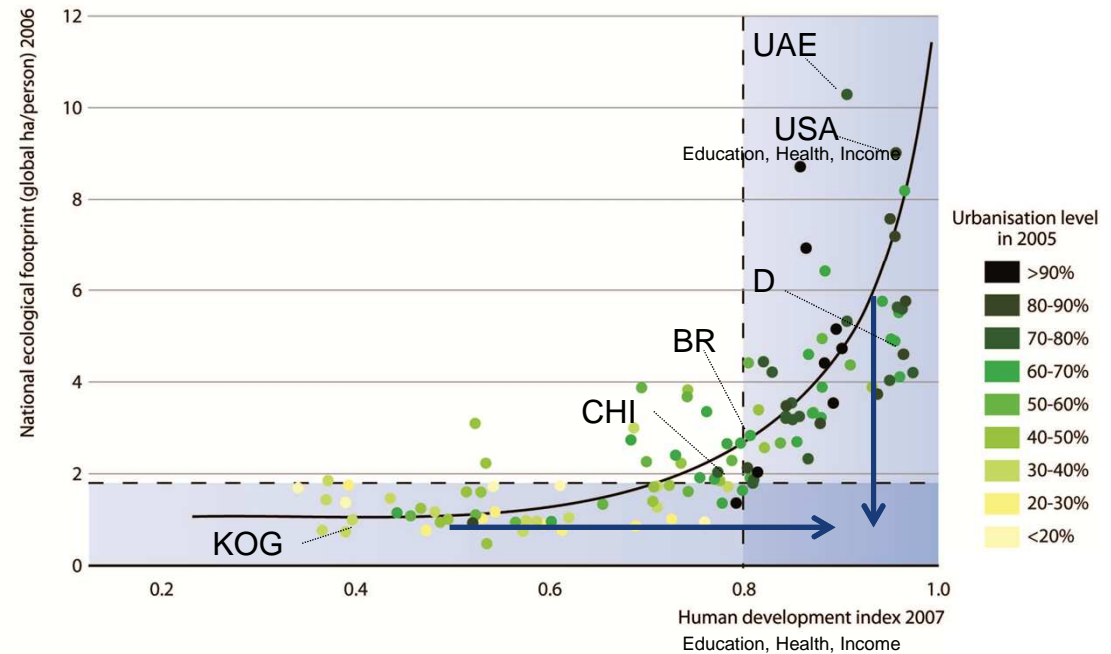
Where we stand today

Challenge for cities

- Positive correlation between urbanization, ecological footprint & wealth
- Decoupling this correlation is only possible by creating sustainable cities.
- Global resource scarcity
Increasing stress on environment and human health
- Cities develop big demand for sustainable solutions

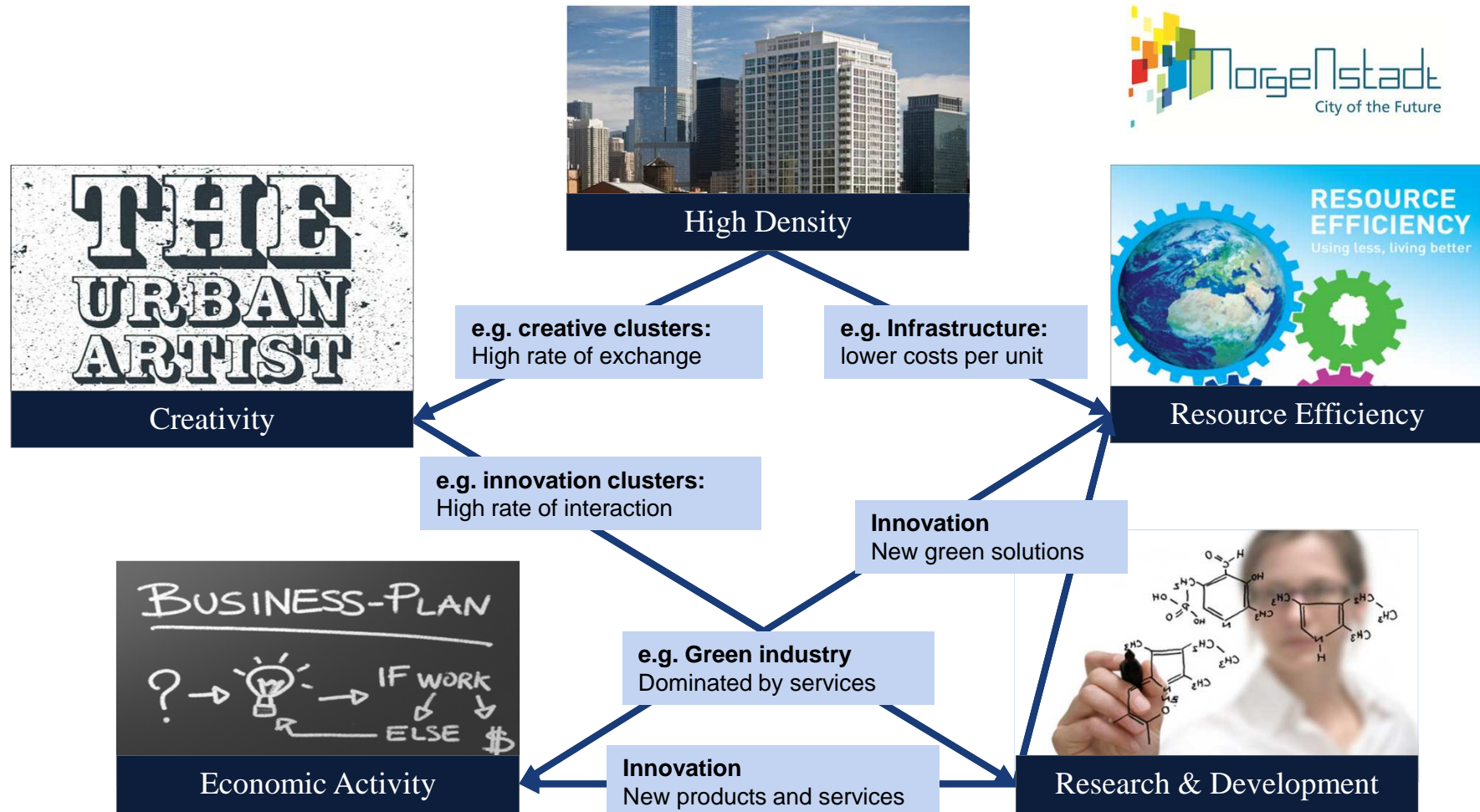
Ecological footprint, HDI and urbanisation level by country

Source: LSE Cities based on multiple sources



Quelle: UNEP Green Economy Report






Why cities are the solution:
5 essentials of sustainable societies

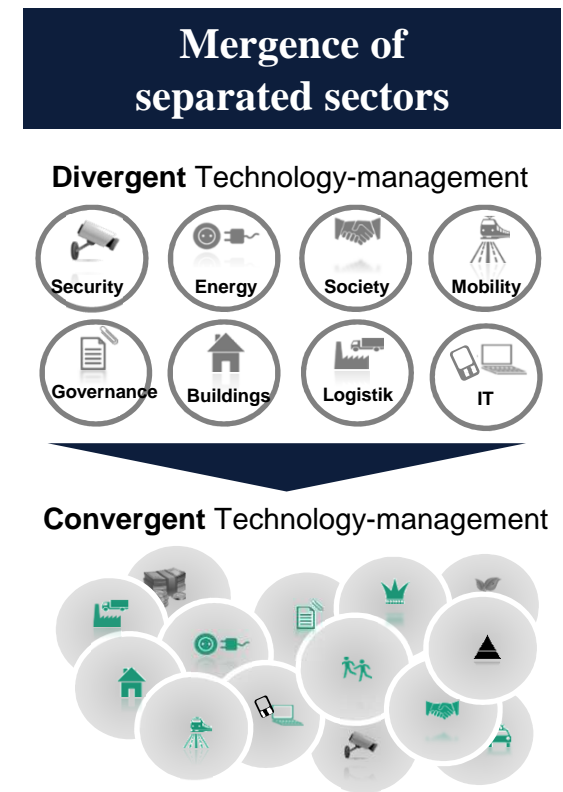
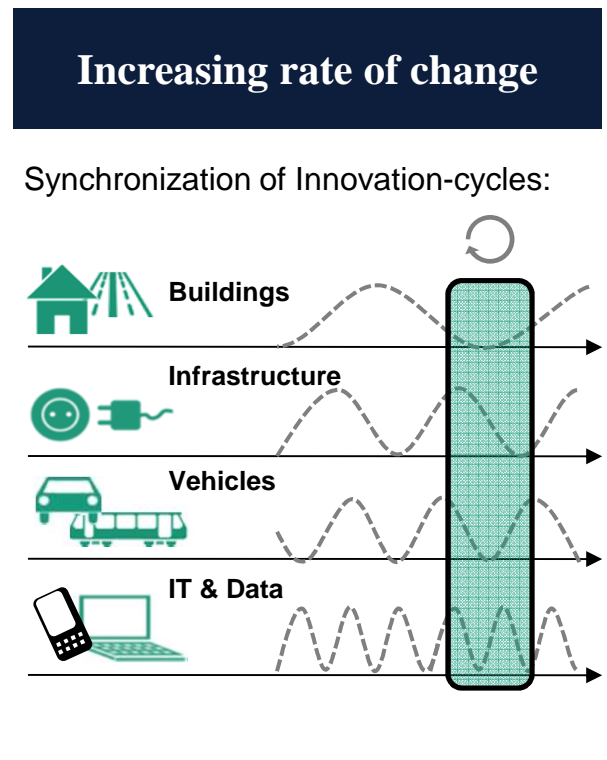


What is happening in the cities at current...
Transformation of technical systems...

3 great transformations of technical systems are currently impacting upon our cities:

Technological change in multiple sectors

-  Decentralized Energy Systems
-  Urban production & logistic systems
-  Ubiquitous communication
-  Electric Mobility, Shared mobility
-  Individual plus-energy houses...



Visions: Audi Urban Future Award



Quelle:
Höweler + Yoon

Visions: Audi Urban Future Award



***"Problems can not be solved
with the same mindset by
which they were created."***

Albert Einstein

What is sustainability?



ecology



economy



socio-cultural



location



process



technology

Chongming Sports Park, China



New Ways

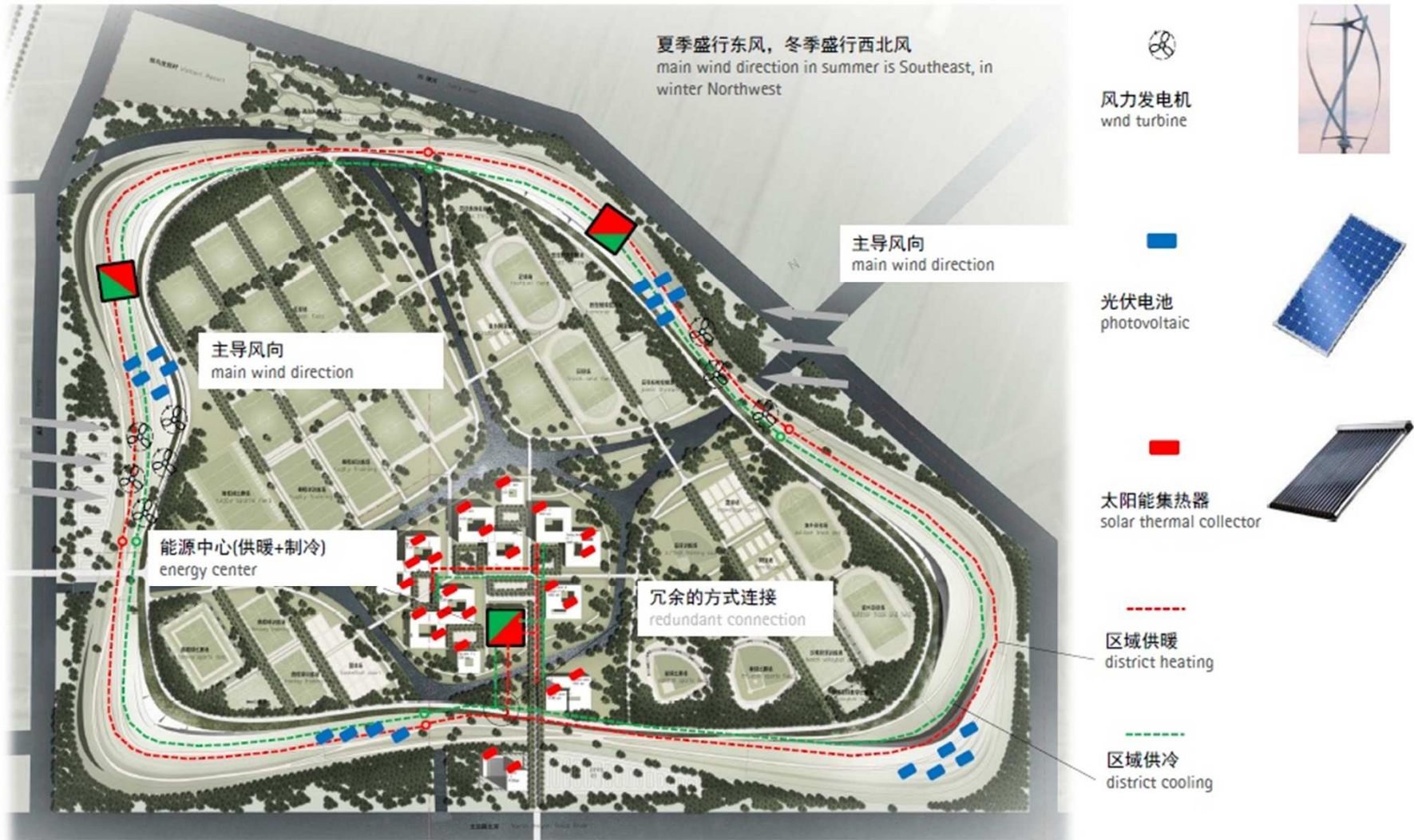
Chongming Sports Park, China



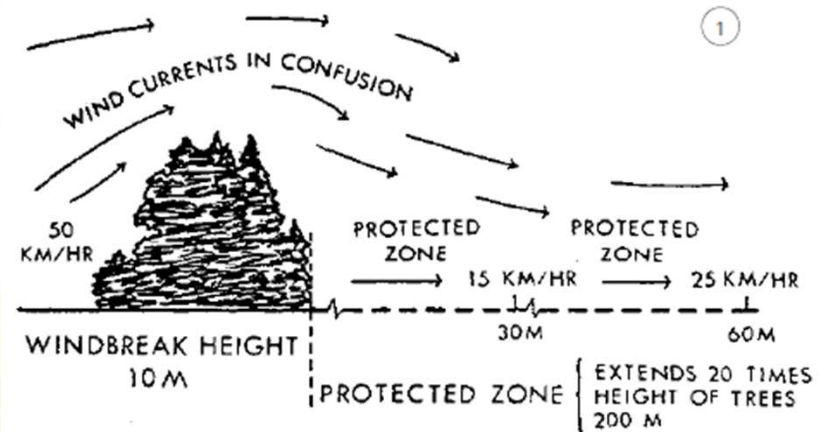


Chongming Sports Park, China

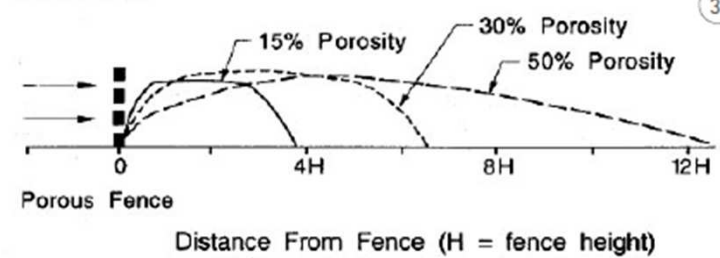
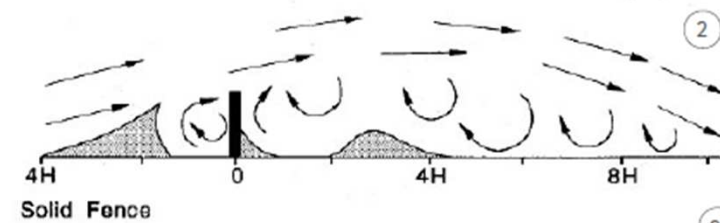


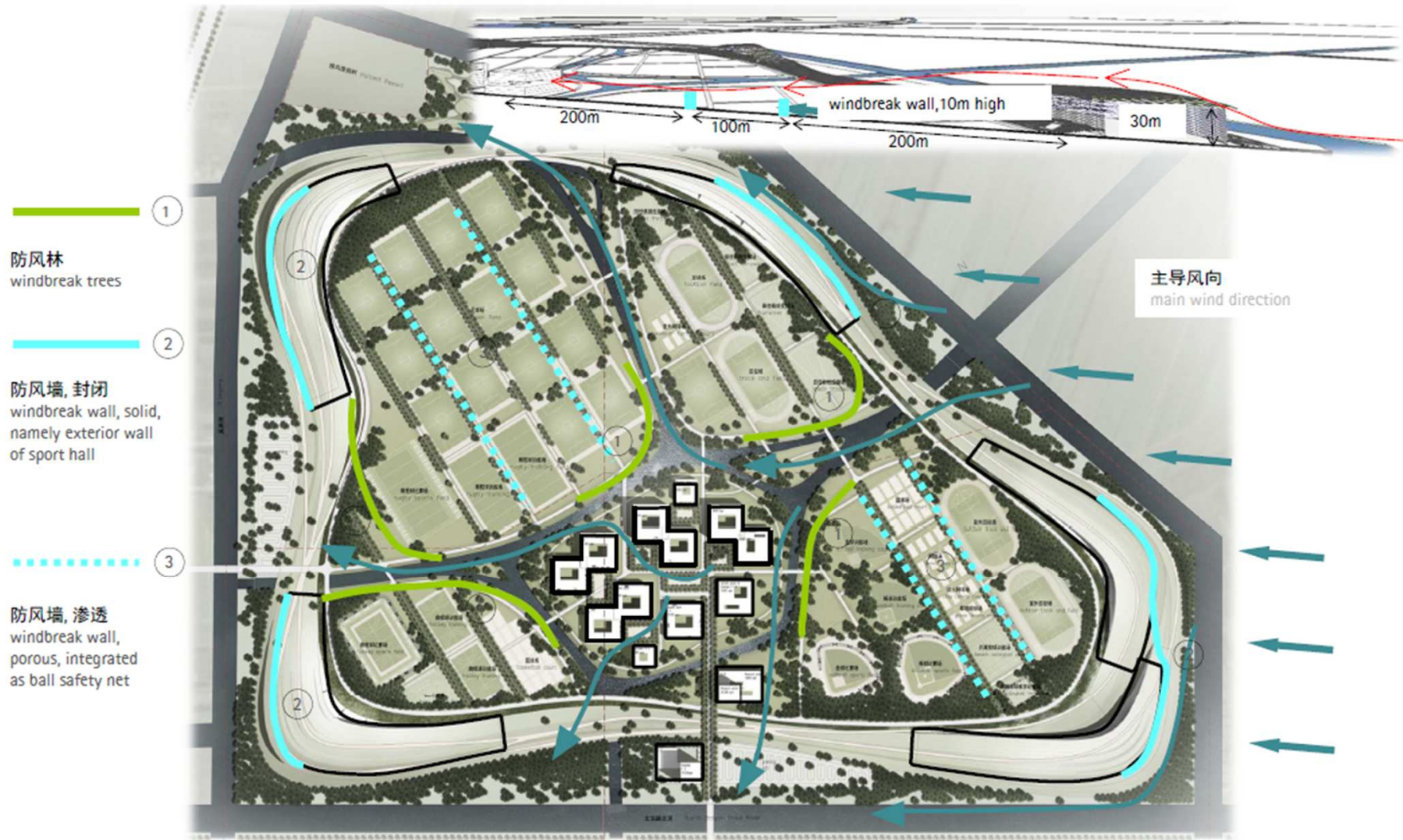


防风林
windbreak trees



防风墙
windbreak wall





Urban Tech Republic, Berlin



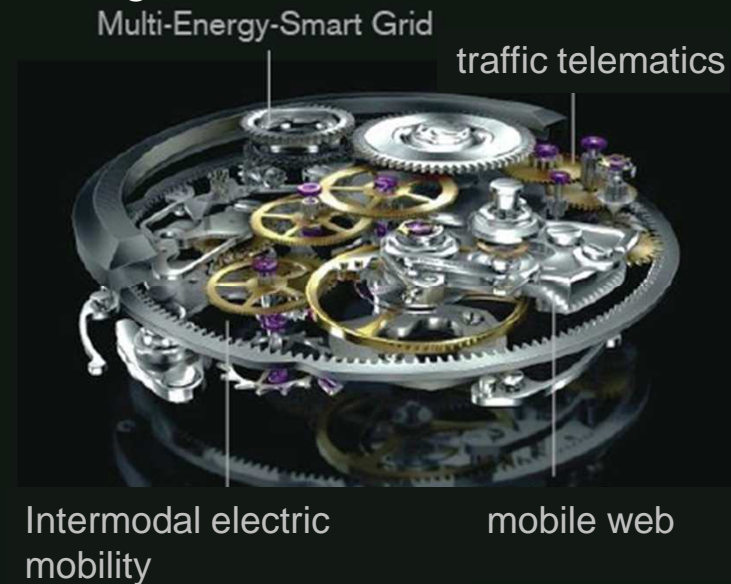
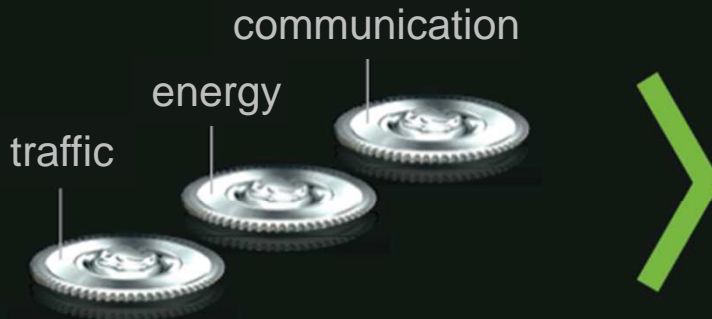
Green Development



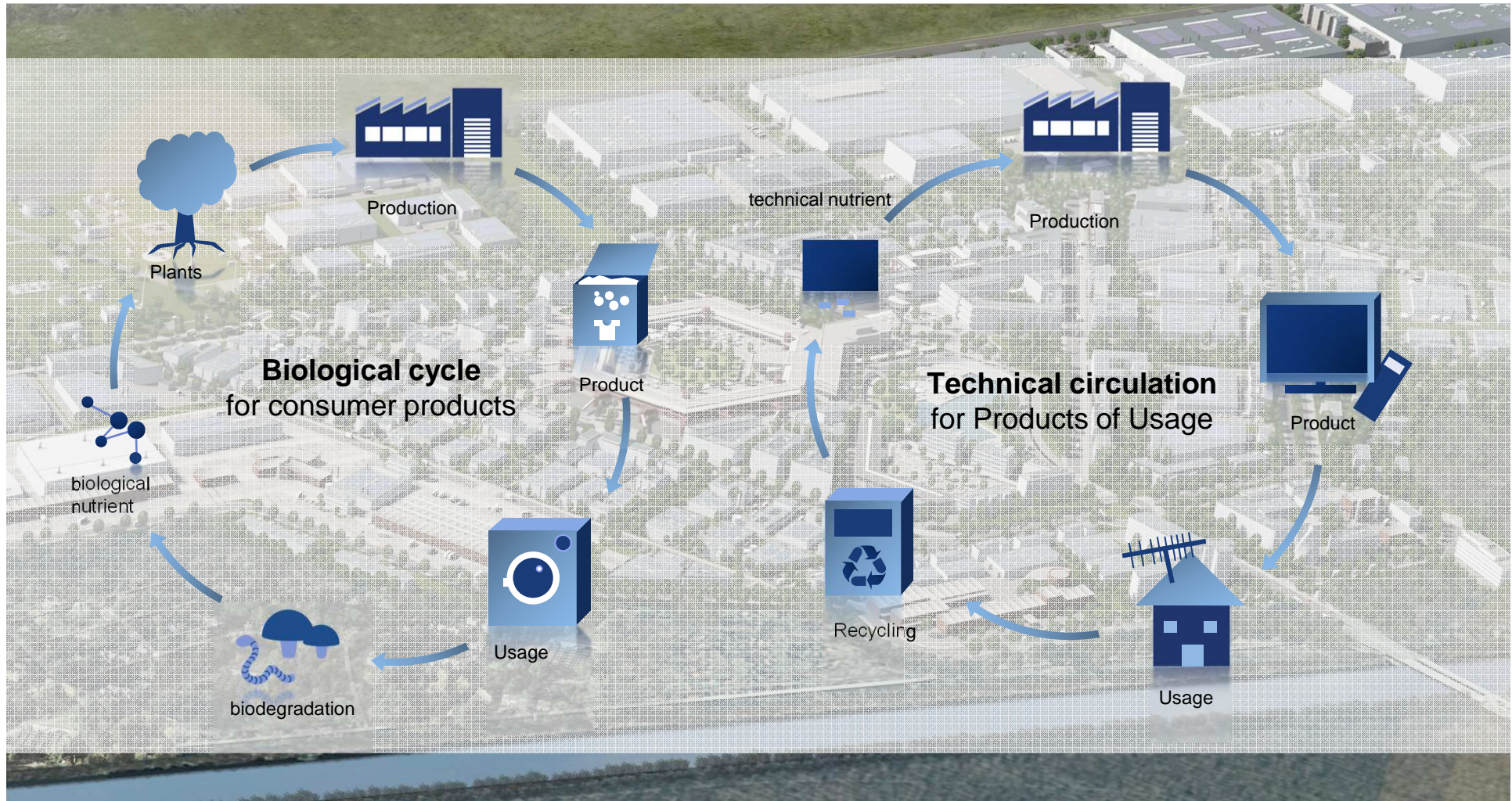
THE GOAL: NETWORKED CITY

From...
the use of individual stand-alone technologies...

To...
demand based, multidisciplinary and intelligent integration of cross-cutting technologies



Quelle: Projekt Berlin-TXL



Urban Tech Republic, Berlin
The "DNA" of TXL

inspiring

local and peripheral

academic

Low-Exergie

circular

innovative

practical

success oriented

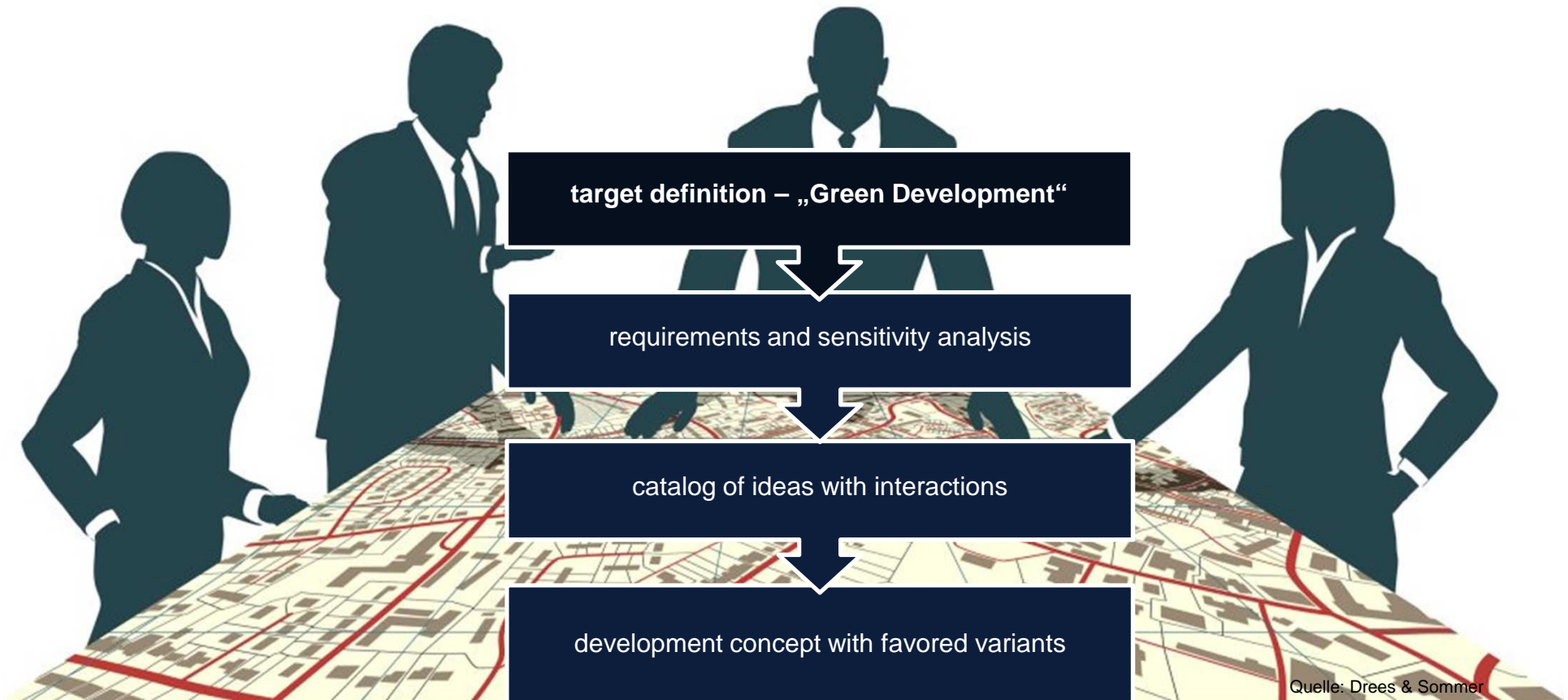
unique



Quelle: © Adrian Hillman - Fotolia.com



Quelle: © Adrian Hillman - Fotolia.com



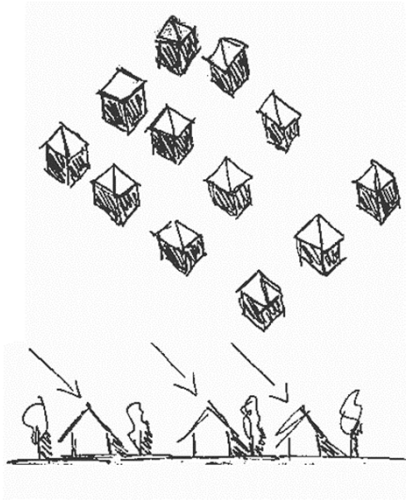
blue_village_franklin



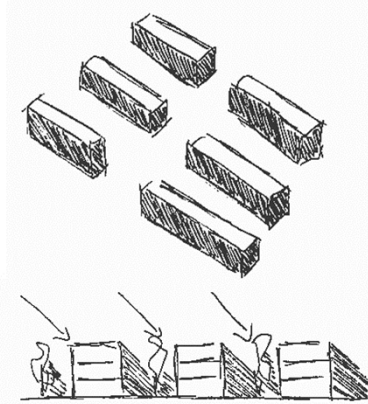


urban planning

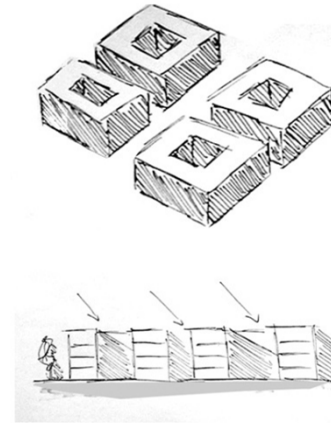
Basis for energy, green, sealing, transport, etc.



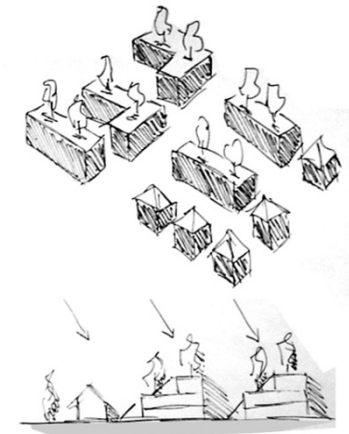
urban sprawl



compact
line construction



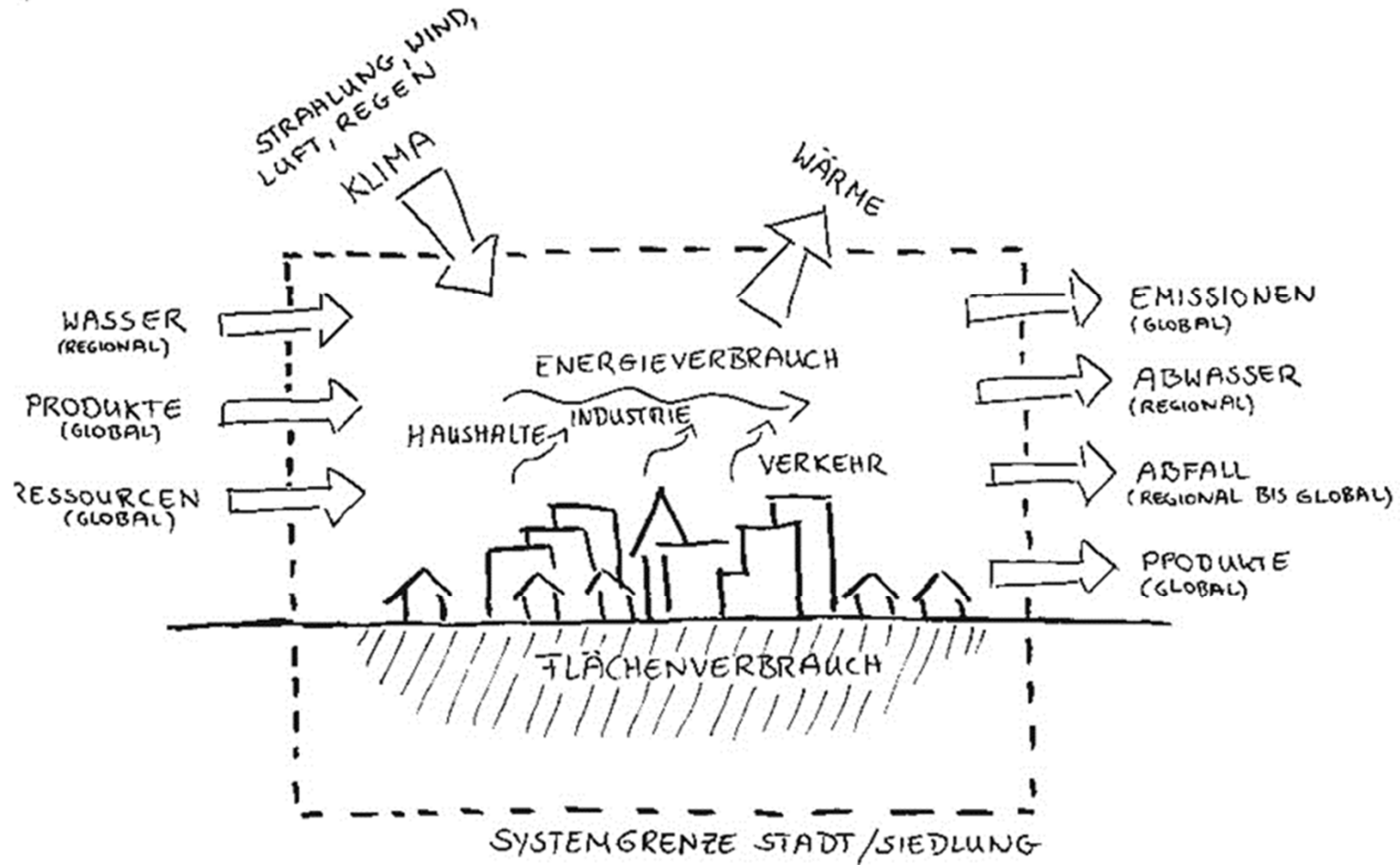
dense block
development



loosened, mixed
neighborhood

city system

Complex network between man, nature and technology

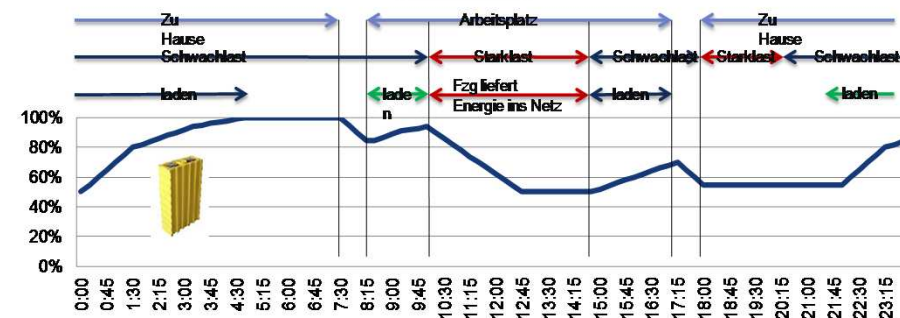


energy transition & Smart Cities

Using synergies! Example Sino-German Eco-Park, Qingdao



- transport and specifically e-mobility is an important part of future urban developments. Only holistic approaches are effective.



potential of smart grid
for example: Vehicle-to-Grid (V2G) - Electric vehicles as virtual power plants

the blue way[®]



Blue Village Franklin