BA URBAN STUDIO TEMPELHOFER FREIHEIT:

SMART SPACES

FACHGEBIET FÜR NACHHALTIGE STADTENTWICKLUNG UND STÄDTEBAU
PROF. RAOUL BUNSCHOTEN

A **smart space** is a space where different processes are combined intelligently in such a way that enery behaviour is enhanced.

SMART SPACES

1. How can you amplify/modify a process?

2. How do you combine one or more processes?

3. How can the amplification and combination of processes lead to smart spaces?

SMART SPACE

SMART PLANET

SMART SYSTEMS

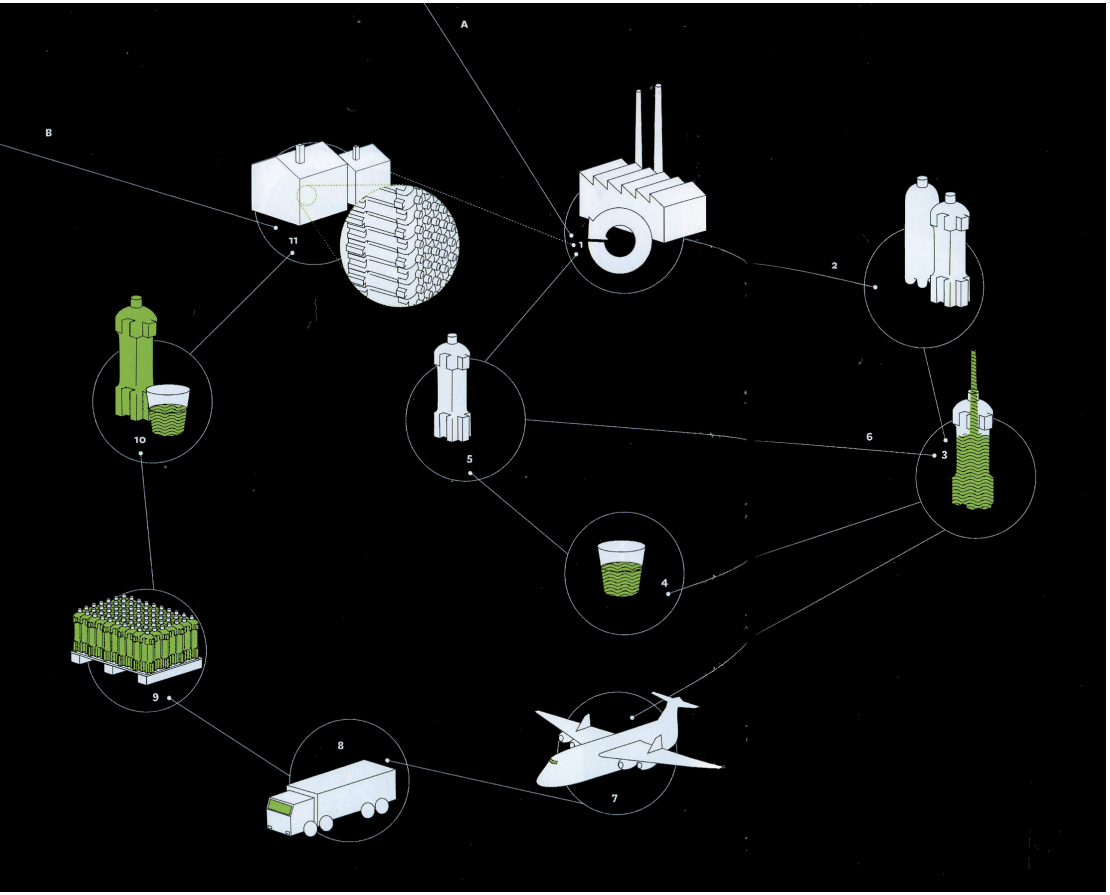
SMART CITY

SMART PHONE

Welcome to the Decade of Smart

ADAPTATION LABORATORY: DETROIT TREE OF HEAVEN WOODSHOP
Kunstwerk im Stadtraum Berlin, 2004
www.treeofheavenwoodshop.com

LOCAL RIVER: HOME STORAGE UNIT FOR FISH AND GREENS
Mathieu Lehanneur with Anthony van den Bssche



Regulärer PET-Kreislauf

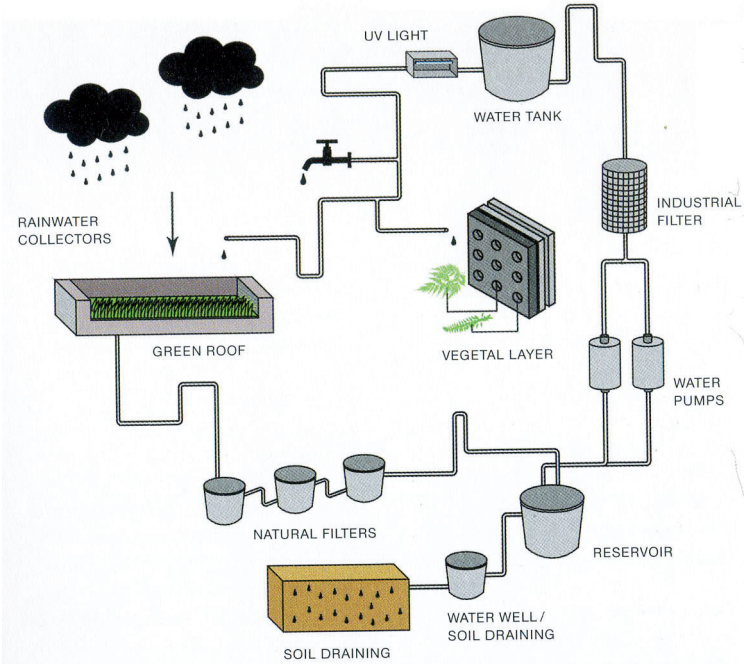
1. Fabrik und Recycling
2. Flaschen
3. Abfüllen
4. Trinken
5. leere Flasche
6. Reinigen

Krisenszenario

7. Wasserversorgung, Erste Hilfe
8. Verteilen
9. Europalette
10. Trinkwasser
11. PET-Flaschen als Baumaterial

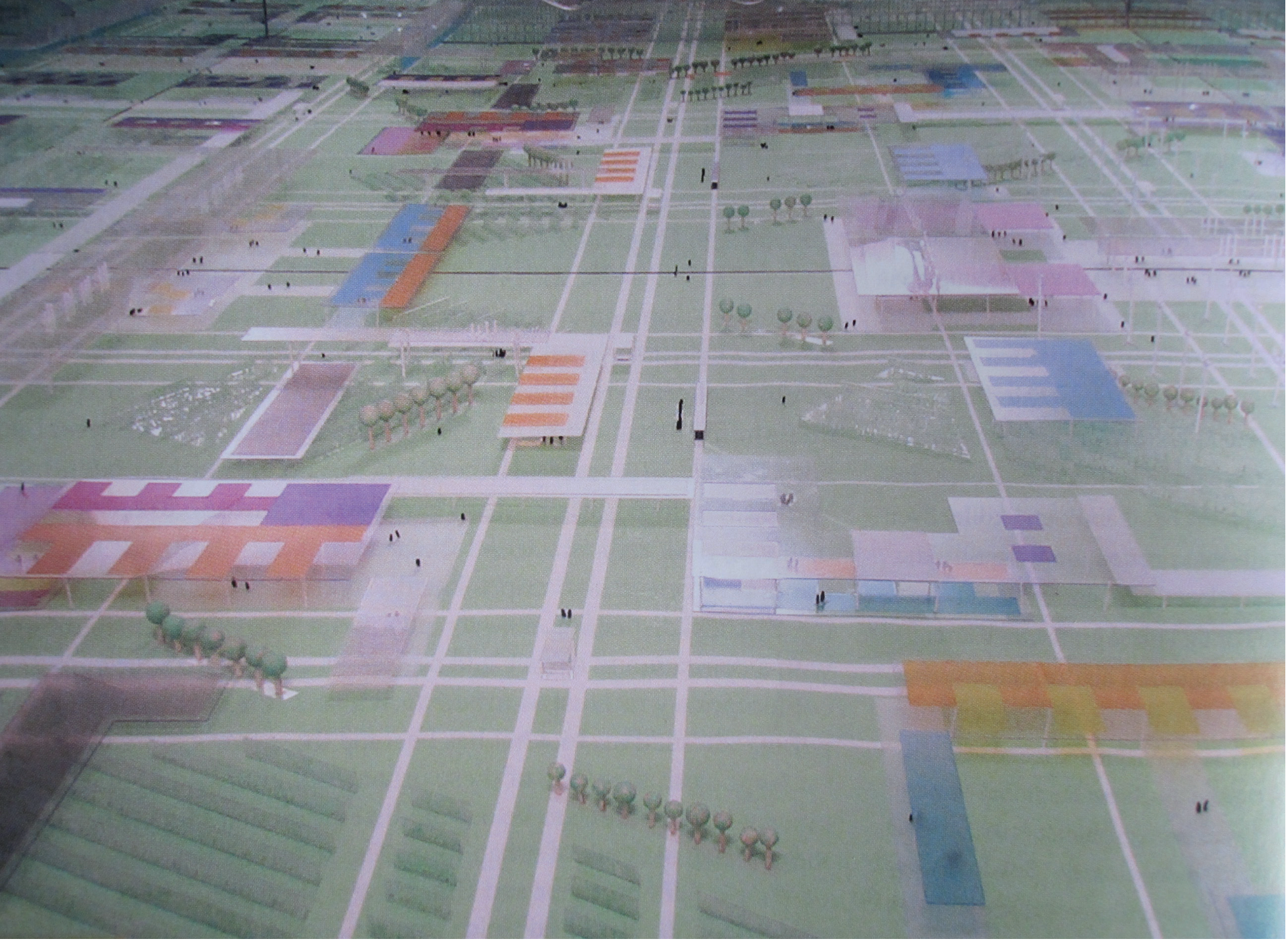
A) Rohmaterial
B) regionales Know-how

INSTANT ARCHITEKTEN: UNITED BOTTLE
Prototyp, 2007
www.instant-arch.net

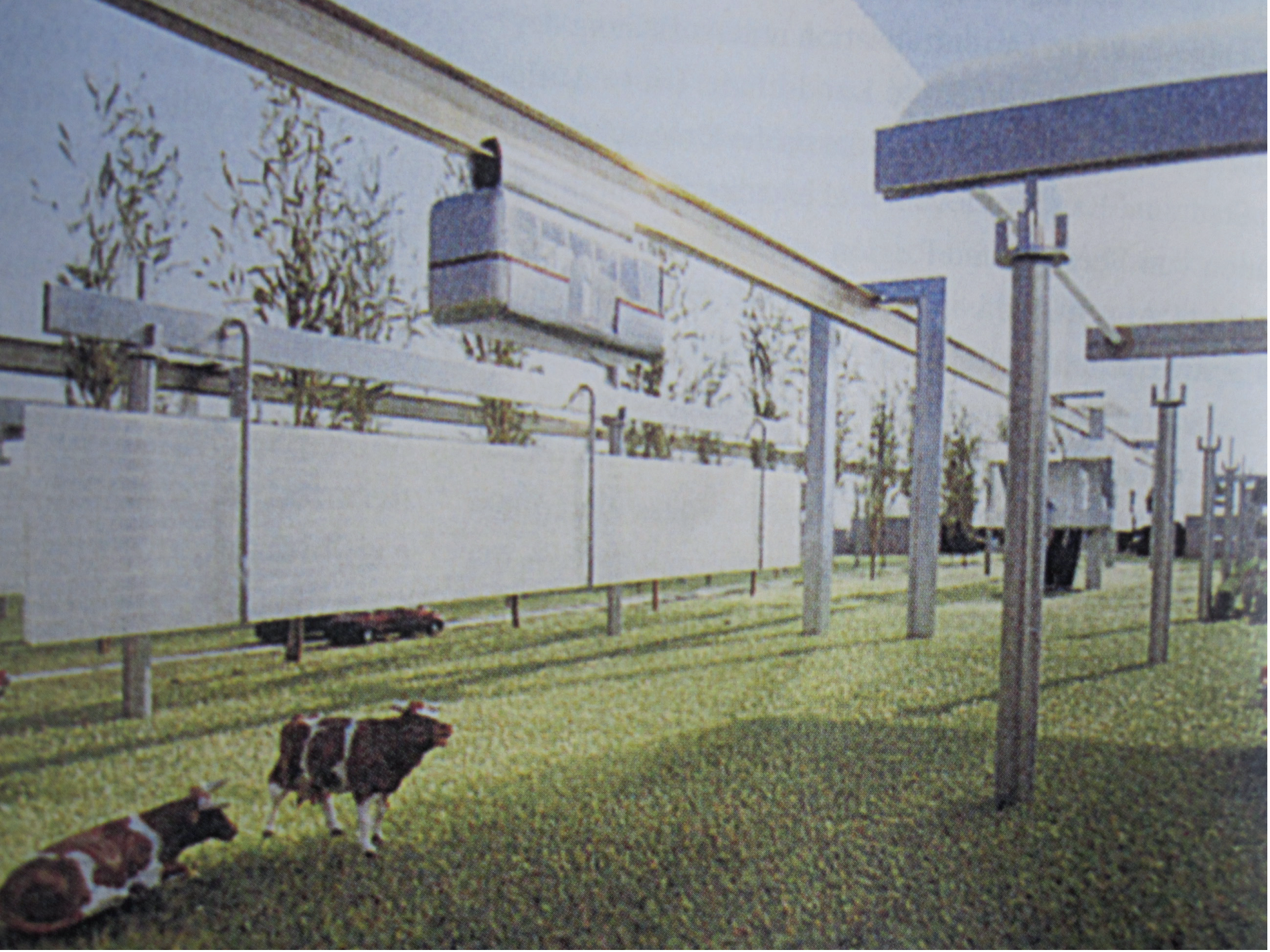


HARMONIA 57
Triptyque

ECOBOX/ SELF MANAGED ECO-URBAN NETWORK
atelier d‘architecture autogérée (AAA)



MASTERPLAN STRIJP PHILIPS, EINDHOVON, 1999-2000
Andrea Branzi



MASTERPLAN STRIJP PHILIPS, EINDHOVON, 1999-2000
Andrea Branzi

Welcome to
TheSmarterCity
Cities are complex systems of systems. As our planet becomes instrumented, interconnected and intelligent, we have the opportunity to connect these systems and make our cities smarter. See how in TheSmarterCity.

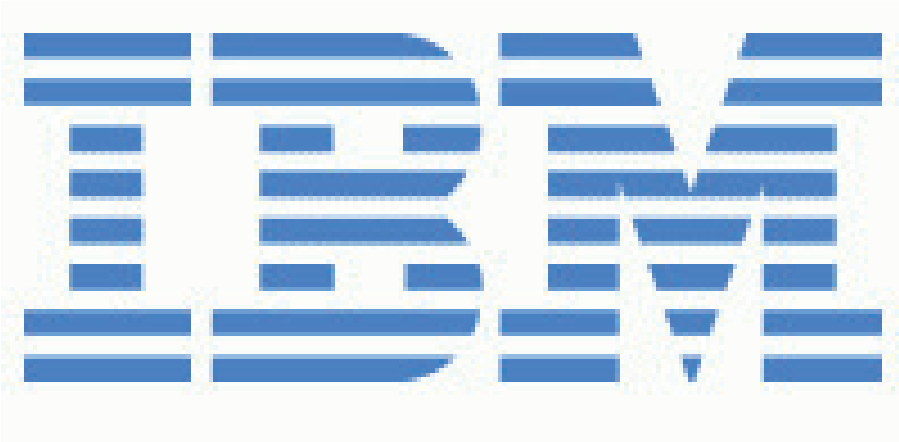
SMART CITY

将城市能耗降低30%?
Cities that consume 30% less energy?
当然能实现。
Naturally.
www.abb.com.cn/betterworld
ABB
0532-80979700
机场动量 JCDecaux

SMART CITY

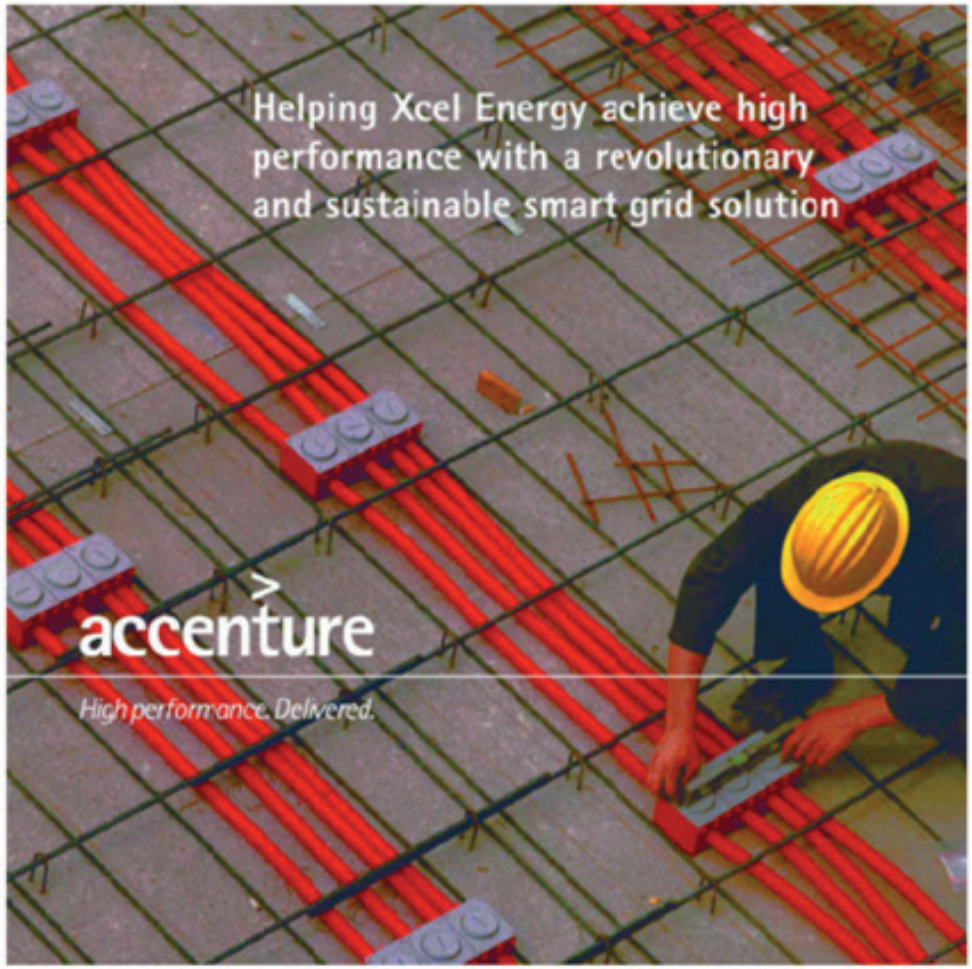
每年减少1.8亿吨二氧化碳的排放量?
Cut CO_2 emissions by 180 million tons a year?
绝非妄言。
Certainly.
ABB
www.abb.com.cn/betterworld
0532-80979700

SMART CITY

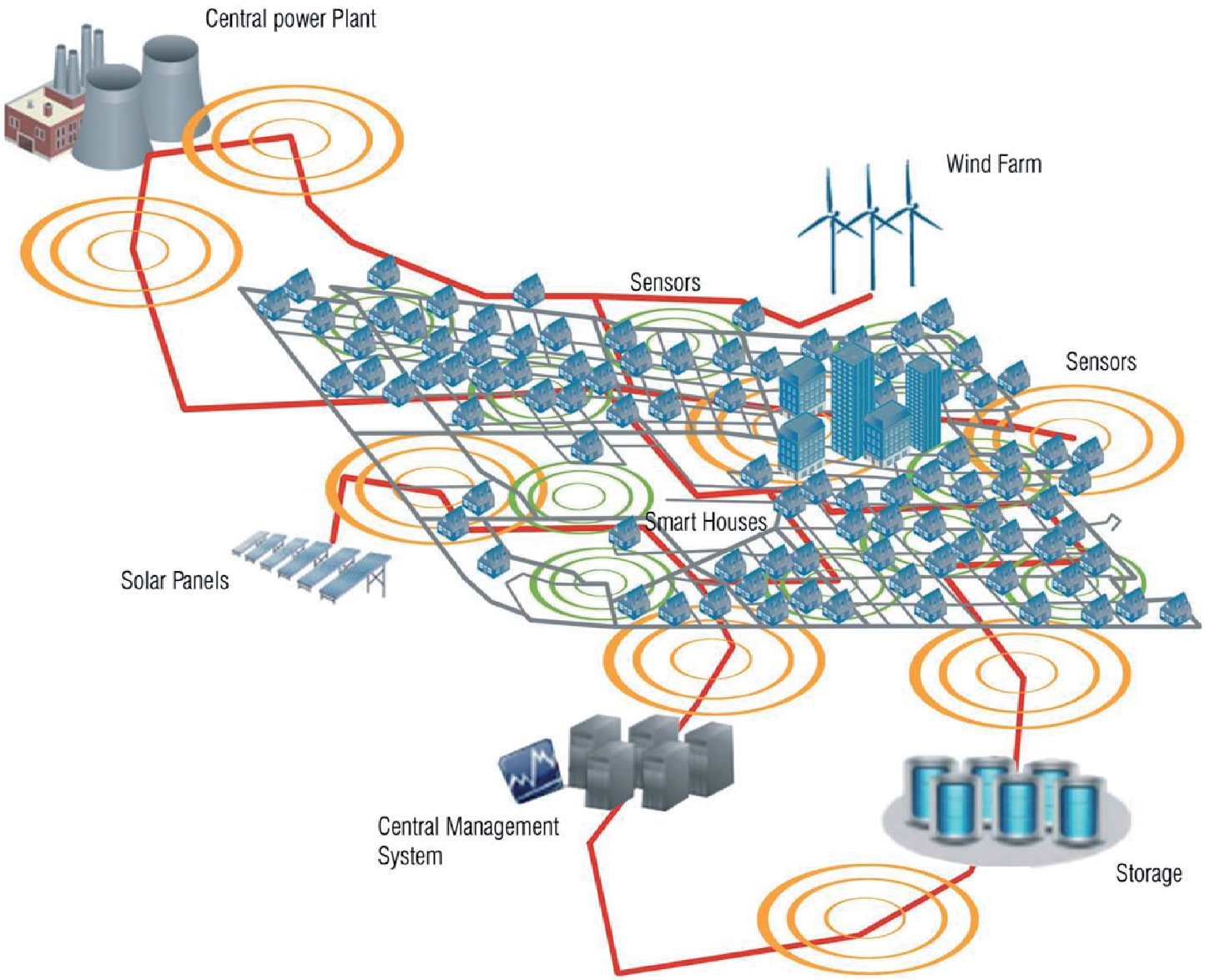


SMART CITY

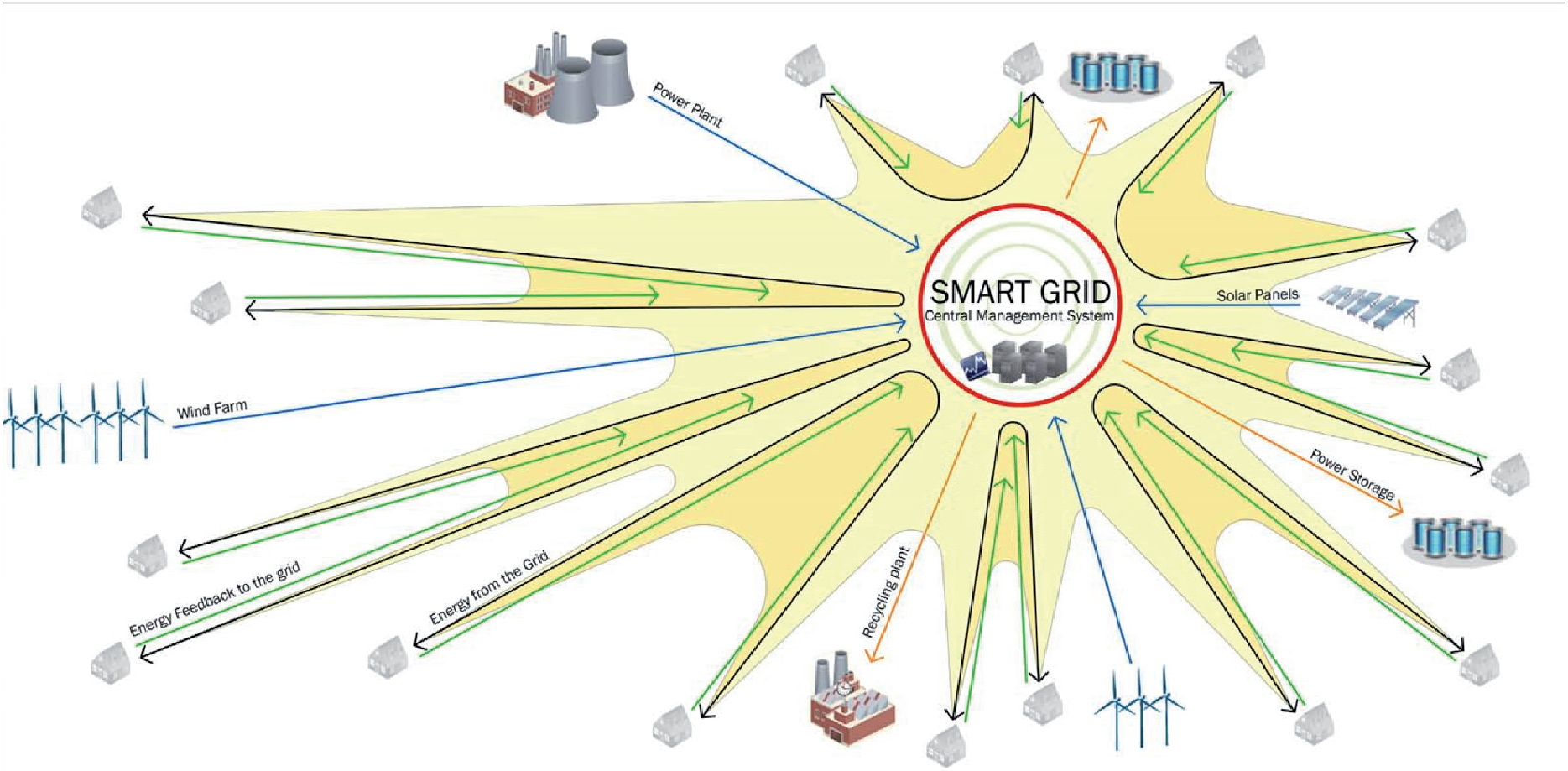
Branding
renewable energies
sustainable elements
green
blue
"sustainable", "smart", "high performance"
I am sterdam
AMSTERDAM: A SMART CITY GOES LIVE
smarter grid
Accenture Intelligent City Network
accenture
accenture
accenture


Helping Xcel Energy achieve high performance with a revolutionary and sustainable smart grid solution
accenture
High performance. Delivered.

SMART CITY

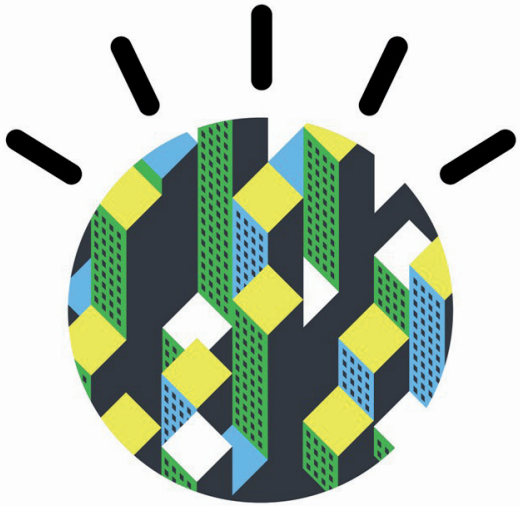

Central power Plant
Wind Farm
Sensors
Sensors
Smart Houses
Solar Panels
Central Management
System
Storage

SMART CITY


Power Plant
SMART GRID
Central Management System
Solar Panels
Wind Farm
Power Storage
Energy Feedback to the grid
Energy from the Grid
Recycling plant

SMART CITY

Building a Smarter Planet, City by City.



A planet of smarter cities.

In 1900, only 13% of the world's population lived in cities. By 2050, that number will have risen to 70%. We are adding the equivalent of seven New Yorks to the planet every year.

This unprecedented urbanization is both an emblem of our economic and societal progress – especially for the world's emerging nations – and a huge strain on the planet's infrastructure. It's a challenge felt urgently by mayors, heads of economic development, school administrators, police chiefs and other civic leaders.

The challenges these leaders face – educating the young, keeping citizens safe and healthy, attracting and facilitating commerce, and enabling the smooth flow of planes, trains, cars and pedestrians – are compounded by the global economic downturn.

Thankfully, help is at hand. Around the world, intelligence is being infused into the way our cities work.

Transport officials in Singapore, Brisbane and Stockholm are using smart systems to reduce both congestion and pollution. Public safety officials in major cities like New York are able not only to solve crimes and respond to emergencies, but to help prevent them. City managers in Albuquerque have achieved a 2,000% improvement in efficiency in sharing information across agencies, keeping citizens informed and providing critical municipal services, from residential and commercial development to water to public safety. A large hospital organization in Paris is implementing an integrated patient-care management solution to facilitate seamless communication across its business applications – enabling them to track every stage of a patient's stay in the hospital.

Italy, Malta and Texas are applying smart meters and instrumentation to make the power grids in their cities more stable, efficient and ready to integrate renewable energy sources and electric vehicles. A large US city built a transparent management system that helps identify and restructure low-performing schools and increase academic achievement for students. Smart water management in the Paraguay-Paraná River Basin of Brazil is helping to improve water quality for São Paulo's 17 million residents.

These solutions, and many more, are making a real impact today. But they are just the first step toward a true smart city.

For a glimpse of what that might look like, consider Masdar City, which is being built from scratch near Abu Dhabi, in the United Arab Emirates. Planners there are working with top scientists, engineers and innovators to create interconnected systems and manage them through an integrated city dashboard.

Masdar City's leaders want to be able to fine-tune their metropolis in real time – and thus shape what could be the world's first economically and environmentally sustainable city, with zero carbon emissions, as they go.

The lessons they learn – both technological and in terms of citywide collaborative management – can be spread around the globe.

If someone could have observed the Earth from space two centuries ago, he or she would have seen the light from just two concentrations of a million or more people – London and Beijing. Today, there are 450 such shining cities – and they are the economic, governmental, cultural and technological power plants of a global urban age. Our future depends on keeping them running and growing brightly. Let's build a smarter planet, city by city.

ibm.com/smartercities

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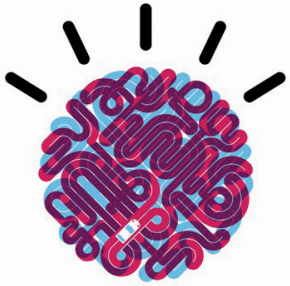
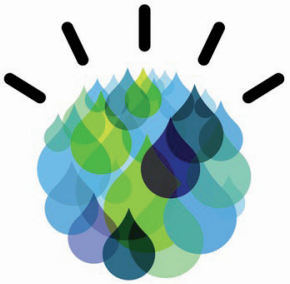
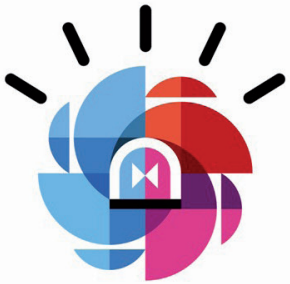


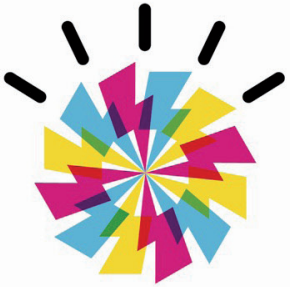
Stockholm has smarter traffic.



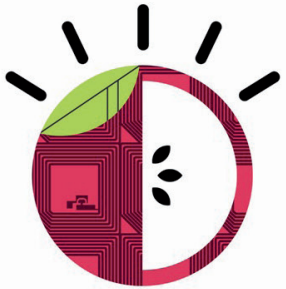
Galway has smarter water.



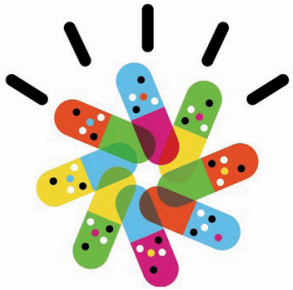
NYC has smarter crime fighting.



Copenhagen has smarter energy.



Oslo has smarter food.



Hannover has smarter healthcare.

SMART PLANET

Intelligente Städte

Sichere Stadtviertel. Funktionierender Verkehr.
Erstklassige Schulen. Günstige Wohnungen.
All dies ist möglich.

In den nächsten zwanzig Jahren werden jede Minute 30 Inder aus ihrer ländlichen Heimat in Ballungsräume ziehen.

Indien benötigt rund 500 neue Städte. Darum ist jetzt der Zeitpunkt gekommen, den Fokus auf intelligentes Wachstum unserer Ballungszentren zu richten.

Gesprächsreihe über eine intelligentere Welt

Smarter Planet TV-Spot - Baby

Sehen Sie sich das Video an

Was ist ein smarter Planet?

3 bedeutende Ideen den Planeten smarter zu machen

1. Instrumentieren der bestehenden Systeme
2. Diese miteinander verbinden
3. Und intelligenter machen

→ Wie wir es umsetzen

Intelligente Nahrungsmittelversorgung

Jetzt wissen Lebensmittel selbst, wie frisch sie sind

→ 25 % der Nahrungsmittel weltweit verderben. In Norwegen sorgt eine smarte Lieferkette dafür, dass alles frisch ankommt.

Ein intelligentes Jahrzehnt

IBM Chairman Sam Palmisano macht deutlich: „Die Welt wird tatsächlich intelligenter."

→ Erfahren Sie mehr

Smarter Planet Referenzen

→ Individuelle Bausteine mit weltweiter Tragweite. Bauen Sie mit an einer intelligenteren Welt!

Ein smarter Planet Blog

Treten Sie in die Diskussion ein (US)

Intelligente Energieversorgung

Übersicht
Analytics
Arbeit
Banking
Bildung
Cloud-Computing
Commerce
Computing
Energie
Gebäude
Gesundheit
Handel
IT-Infrastruktur
Kommunikation
Konjunktur-programme
Nachhaltigkeit
Nahrung
Öffentlicher Sektor
Ölfelder
Produkte und Dienstleistungen
Schienenverkehr
Sicherheit
Städte
Transport
Verkehr
Wasser

Intellige

Sichere Stadt
Erstklassige S
All dies ist mö

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Gesprächsreihe über eine intelligentere Welt

SMART SPACES - global facebook links

SMART CITY CHENGDU
THE 5TH RING AS LOW CARBON INCUBATOR
CHENGDU BIENNALE, 2011
CHORA ARCHITECTS AND URBANISTS

SMART CITY
CHENGDU
THE 5TH RING AS
A LOW CARBON
INCUBATOR

智能城市—成都
SMART CITY
CHENGDU
成都五环作为低碳城市孵化器
THE 5TH RING AS
A LOW CARBON

新农村建设
VILLAGE CONSTRUCTION
市级战略功能
MUNICIPAL-LEVEL
2009：世界现代田园城市
SINCE 2009-WORLD MODERN GARDEN CITY

ENERGY EFFICIENCY PROTOTYPES

- Home Improvement Kit
- Openable Shading Devices
- LowImpactConstruction
- Efficient Coal Power
- Greywater Recycling
- Passive Building
- Photovoltaiv Cells
- Reed Beds
- Solar Water Heater
- Solar Concentrator

ENERGY NETWORKS PROTOTYPES

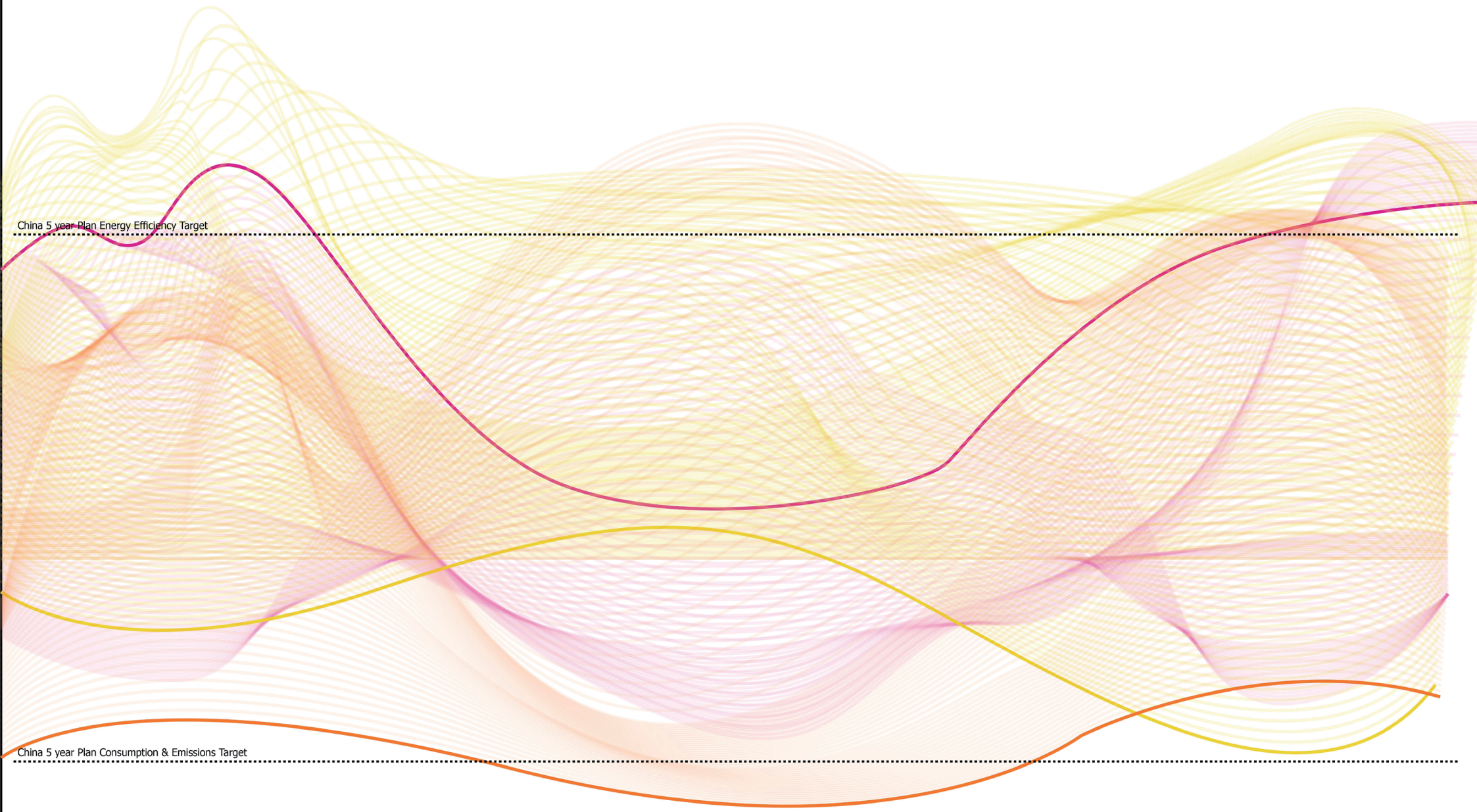
- Clean Transportation
- District Cooling
- Local Smart Grid
- Green Technologies
- IntelligentInfrastructure

PILOT PROJECTS

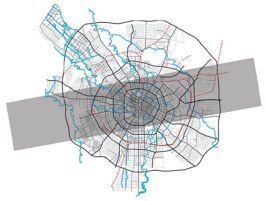
- Waste Treatment
- Urban Agriculture
- Industrial Headquarters
- Zero Carbon Row House
- Commercial Building
- Garden Tower
- Energy Road

RENEWABLE ENERGY

- Algae Farms
- Biomass
- Combined Energy Tower
- Energy Island
- Large Scale Energy Storage
- Geothermal Energy
- Energy Producing Facade
- Small Scale Energy Storage
- Solar Power Plant
- Wind Farms
- Solar Concentrator Station
- Wave Turbines
- Waste Recycling



Composite Section Line Through the City



Energy Efficiency & Renewable Energy Production

Energy Consumption

Greenhouse Gas Emissions

1. A concept for a smart space

2. A diagram that shows how the smart space is spatially organized

3. A graph that shows the improvement over time

4. Plans and sections of the smart space

5. Two perspectives of the smart space, one close up, one further away

DELIVERABLES

EXERCISE 03

EXERCISE 03 / SMART SPACES

A smart space is a space where different processes are combined intelligently in such a way that energy behaviour is enhanced. In the third exercise we will design examples of such smart spaces where a new and prototypical use of resources is proposed. The smart spaces are based on one or more locations of the miniscenarios and on one or more processes. In order to develop a smart space a selection of processes analyzed in the operational fields are combined and amplified. In the choreography workshop with the London Met students in the fifth week the smart spaces will be tested within programmatic animations the London Met students will bring. Your smart spaces will flesh out their animations, while they in turn will help you to proliferate your smart spaces on a wider urban scale.

The exercise includes the following steps:

1. How can you amplify/modify a process?

2. How do you combine one or more processes?

3. How can the amplification and combination of processes lead to smart spaces?

Every group works on the design of one smart space and draws up plans and sections, as well as a close by perspective and a view from further away (for example a bird's eye). Graphs and diagrams will be used to demonstrate the enhancement in energy behaviour.

Deliverables

1. A concept for a smart space
2. A diagram that shows how the smart space is spatially organized
3. A graph that shows the improvement over time
4. Plans and sections of the smart space
5. Two perspectives of the smart space, one close up, one further away

There will be a compact work session in the studios on the 3rd and 4th of November (10am - 6pm) with an internal pin up of the work on Friday afternoon. For the choreography workshop the material of the smart spaces has to be formatted so we can overlay it onto the Tempelhof animations of the London Met students.