

## panel # 2

Areti Markopoulou  
Andreu Ulied  
Pierre Alain Trèvelo  
Jorg Schroder

International Forum

# MED.NET 3 RESILIGENCE

Intelligent Cities /  
Resilient Landscapes



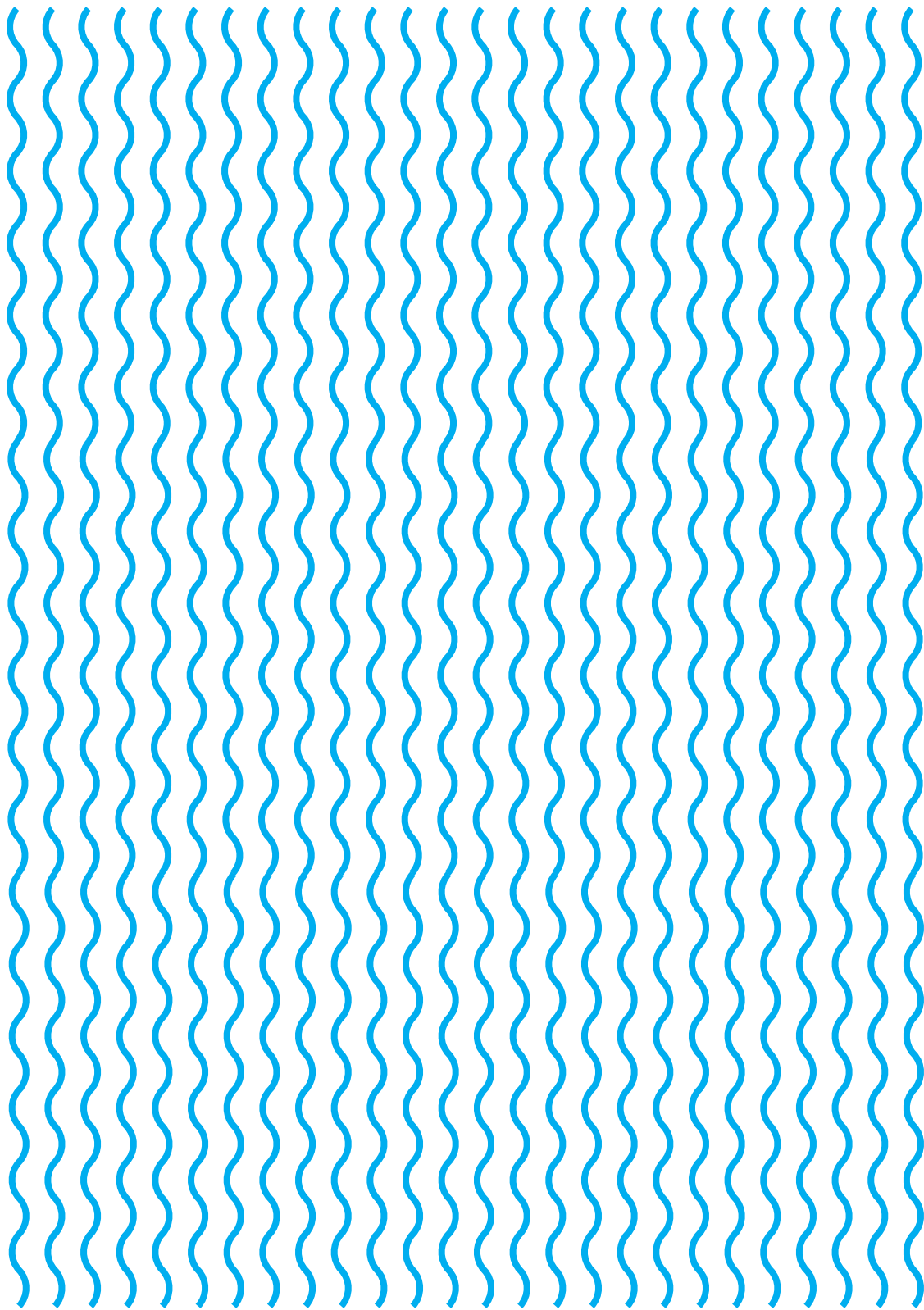
## MED.NET.3 Resili(g)ence INTERNATIONAL SYMPOSIUM

*The Student's Survey*

PANEL #1

October, 27<sup>th</sup> 2016

Areti Markopoulou  
Andreu Ulied  
Pierre Alain Trèvelo  
Jorg Schroder



**STUDENTS:**

Davide Bottaro

Pietro Clavarino

Lorenzo Damonte

Alexandre Major

Noemie Prevost

## PLANNING/LANDING

### Introduction

The neologism “resili(G)ent” aims to combine a new “**intelligent city**” (information, knowledge, projection) with a **resilient city** (resistance and recycling, reaction and recovery, renovation and adaptation) in a new responsive and sensory condition, sensorized at the same time.

Resilient cities are understood as living urban contexts with capacities to **absorb** (and redirect) shocks and stresses, weaknesses and threats, in their social, economic, and technical structures (and infrastructures), being able to maintain essentially their own functional, environmental and sociocultural conditions, values, and identities.

To increase their capacities for resilience, the cities will need to adapt new **urban planning** and **building design** strategies.



## ARETI MARKOPOULOU

IAAC

Greek Architect, educator and urban technologist working on the intersection between architecture and digital technologies.

Accademic Director at IAAC in Barcelona.

Co-editor of Urban Next (global network) and co-founder of StudioP52.

Curator of international exhibition (Pavillon of Innovation, MyVeryOwnCity, Fabrication Laboratory).

Bachelor in Architecture and Engineering from DUTH, March from IAAC and a Fab Academy diploma on Digital Fabrication offered by the Fab Lab Network.





## RE MEM BRANE

During the industrial revolution, the adaptation of the environment to human necessities was the principal idea. If the urban development had continued to evolve in this direction, we would have reached the collapse of planet resources and its equilibrium, worse than the actual one.

In the Sixties with the introduction of technology, a more evident attention to the bound between man and environment, in quantitative but not in qualitative terms of the urban space, was reached.

Today technologies differ from the past aspectatives because of the way in which they develop in space: from microchips to interactive walls.

In a future reality, the use of dynamic materials, realized thanks to 3D printers, will allow the creation of new urban infrastructures able to interact with city otherwise.



An Assembly Line  
of the  
Ford Motor Company



## PIERRE ALAIN TRÈVELO

TVK

French Architect from the 2000's, teacher at l'Ecole d'Architecture of the city and territory of Marne-la-Valée. He worked for the Institut d'Etudes Politiques de Paris from 2006 to 2010. Master's in Urban Planning at the Harvard University.

Co-founder with Antoine Viger-Kohler of TVK studio in 2003.

Today TVK studio works on architectonic and urban complex projects both public and private.

The studio is part of the Conseil Scientifique de l'Atelier International du Grand Paris.





## INFRA STRUCTURE

The great ancient architectures belong for the most to the category of structures, such as the Ur's ziqurat, the french castle of Chenonceau or the artificial island of Hong Kong's airport.

The main turning point in urban transformations is marked by the passage from the structure to infra-structure.

In fact, infrastructures have been playing a more important role in the transformations of both rural and urban landscape.

In order to explain the big complexity of infrastructure's theme, we can mention:

- Boulevard Periferique for its capacity to change the intended use and also keeping the structure as a part of it (senarisation).
- Place de la République for its task to managing at the same time two different intended uses.



## ANDREU ULIED

MCRIT

Spanish expert in planning, foresight and policy evaluation.

Doctor Engineer from the Polytechnic University of Catalonia in 1996, and Master's in Planning from Harvard University in 1994, with international experience in planning and foresight studies related to European territorial policy.

MCRIT Partner since the foundation of the company and then Director since the 1994.





## SIX MEMOS

The six words for “Advanced Litterature” of 21th century, by Italo Calvino, adapt perfectly to various facets of the word “Resilience”

*Lightness*

*Quickness*

*Exactitude*

*Visibility*

*Multiplicity*

*(Consistency)*



## JÖRG SCHRÖEDER

Liebniz Universität Hannover

Architect and urban planner, focus his work on rural areas, suburbia, suburbs, new settlements and metropolitan regions.

He works on projects of cooperation and development between the urban and rural by focusing on concept of mobility, infrastructure and tourism.

Degree in Architecture at TUM (Technische Universität München), educator of Planning and Design of Rural Areas at TUM from 2001 to 2008, member of the Scientific Commission of Bavarian Academy for Rural Areas.





## URBAN & RURAL

The continuous development of new technologies has influenced our culture drastically, switching from an analog language to a digital one and from a material space to a virtual one; this has surely influenced the relationship between urban and rural spaces.

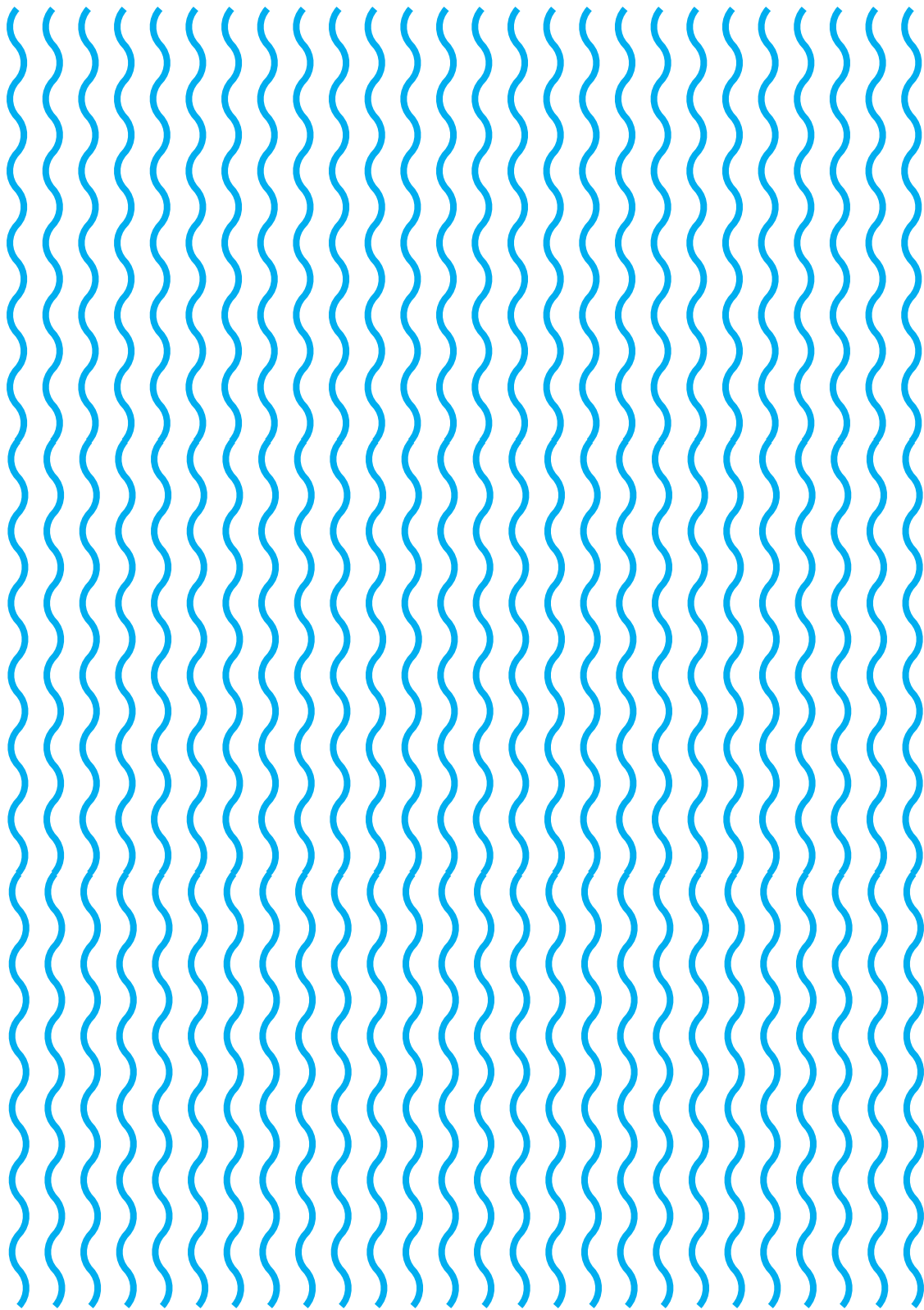
The rural and urban spaces relate each other on the base of our society's demands made of the creation of markets, which consecutively need good infrastructures and an efficient logistic system.

In urban terms, this is shown through the development of a network whose branches are represented by infrastructure and knots by cities; on a little scale as Bavaria Munich and on a bigger scale as the German north-south axis.

New common spaces, which grow up between bigger cities and smaller centers, represent a new opportunity in order to intervene in an efficient and innovative way on the quality of citizens' life.







**STUDENTS:**

Francesca Protopapa

Cristina Calcagno

Simone Peroni

# Areti Markopoulou

## IAAC

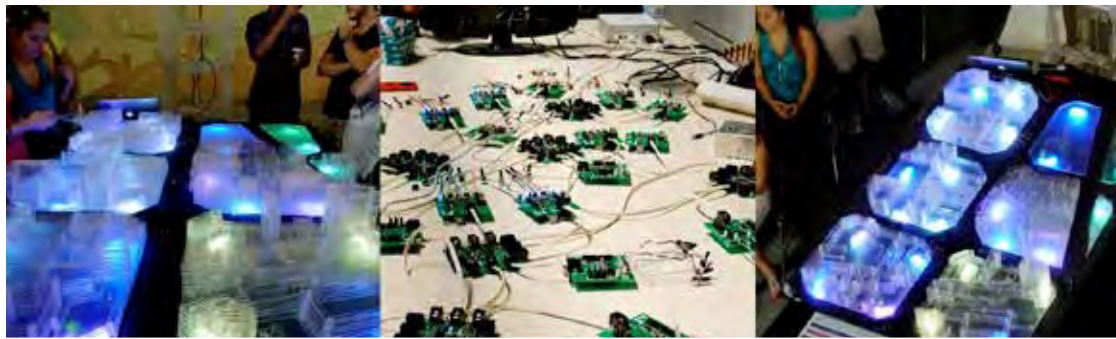
Areti Markopoulou is a Greek architect, educator and urban technologist working on the intersection between **architecture** and **digital technologies**.

She is currently the Academic Director at IAAC in Barcelona, one of the leading international platforms for education.

Her research and practice design explores new architectural models that incorporate the application of **ICTs** (Information and Communication Technologies), Material Intelligence and Fabrication, allowing built and public space to dynamically adapt to behavioural and environmental changes over time.

She has been developing urban projects and guidelines for the implementation of ICT in the public space and the implementation of **renewable Energy technologies** in buildings and open spaces.





## Intelligent Cities “NetworkedCITY”

NetworkedCITY city is a project based on a physical simulation model of a continuously **transformed city** and a real time data visualization that allows understanding the interconnection between the environment that surrounds us, the energy we consume and produce, the water we consume and the geographical data of **our habitat**.

The aim of the project is to create an **urban tool** for planners and city managers as well as to stimulate processes of **citizen’s** awareness, promoting and testing that everything is interconnected, and that networks of people, technology, information and city infrastructure are affecting the way we interact, produce and behave.

NetworkedCITY Project debates on how we can think about the cities of the future, not in terms on new construction, but on how we can optimize the **constructed environment** into the city.

NetworkedCITY consists on two different electronic boards: the **Hub** (Master) is located in the centre of each urban block and the **Building** (Slave) is located in each building of the urban block.

This two boards are able to interchange **informations** that are based on sensors measuring Energy and Water consumption, levels of CO2 emissions, amount of light, temperature and sound.



## Intelligent Cities "Smart Citizen"

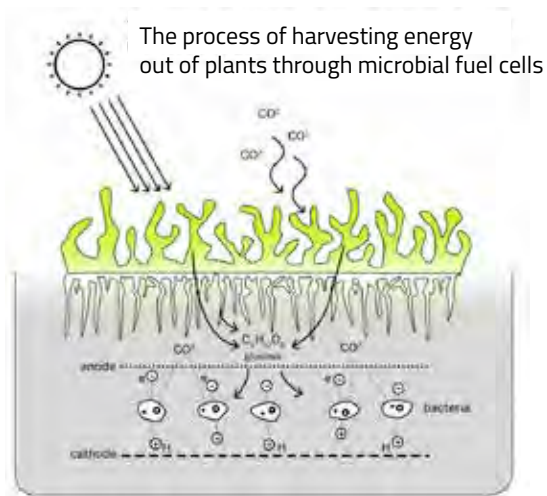
Smart Citizen is a platform for the generation of **social participatory** processes in urban areas. Connecting data, people and knowledge, the objective of the platform is to serve as a **node** for building productive and open indicators, and distributed tools, bringing thereafter to the collective construction of the city for and by its own **inhabitants**.

The Smart Citizen project is based on geolocation, Internet and free hardware and software for data collection and sharing; it connects people with their **environment** and their city to create more effective and optimized **relationships** between resources, technology, communities, services and events in the urban environment.

What are the real levels of air pollution around your home or business? and what about noise pollution? and humidity?

Now imagine that you could know them, share instantly and compare with other places in your city, in real time ... How could this information help to improve our **environment quality**?





## Self Sufficiency "Moss Voltaics"

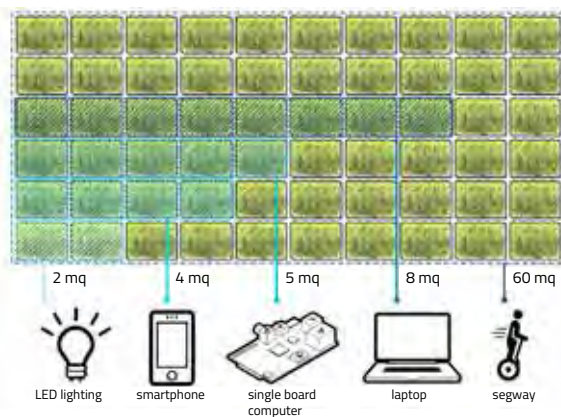
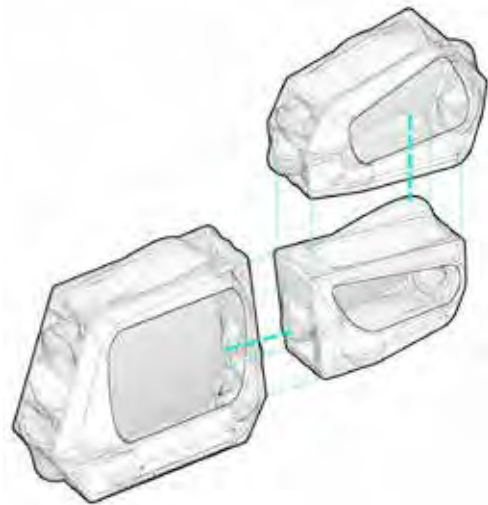
Moss Voltaics is a green façade system that aims to explore how moss might be used as a source of **renewable energy** and how it can be implemented to the **urban scale**.

Mentioned emerging technology is called **bio-photovoltaics** (BPV) which uses the natural process of **photosynthesis** to generate electrical energy.

In this process plants using light energy consume carbon dioxide and water from the environment to convert it into **organic compounds**. Those compounds are required for the vital processes of a plant.

When the moss photosynthesises it releases some of these organic compounds into the soil which contains symbiotic bacteria. The bacteria break down the compounds, which they need to survive, liberating by-products that include **electrons**.

By providing an electrode for the micro-organisms to donate their electrons to, the electrons can be harvested as **electricity**.





# Pierre Alain Trévelo

## TVK

Founded in Paris in 2003 and employing around 35 people, TVK focuses primarily on the question of building the **city** and the **metropolis**.

Educated in **architecture** and **urbanism** mainly in Paris and Harvard, Pierre Alain Trévelo pursues a research that aims to capture the complexity and paradoxical nature of the **contemporary city**.

This research crosses therefore essential topics, which are sometimes neglected in the contemporary city: such as the potential of **architecture** in locations determined by other factors, the role of large modern **infrastructures**, the status of monumentality, or the **environmental condition** in the metropolitan context.







## Place de la République Public Space + Pavilion

The redevelopment of Place de la République is based on the concept of a scene open to **multiple urban uses**.

The new square makes a large-scale landscape that transforms it into metropolitan equipment: a **platform of evolution** available and suitable.

A **solid axis** associates the statue of Marianne, the mirror of water and the alignment of the trees.

This harmony is amplified by a calm mineral and a **very gentle slope**.

The floor is made of precast concrete slabs used in different **shades of gray**.

Generous by its dimensions and popular by its history, the Place de la République becomes a new **center** of attraction, exchanges, encounters.

The southwest part hosts a pavilion, a unique building, entirely glazed, to keep a continuous reading of this singular space.



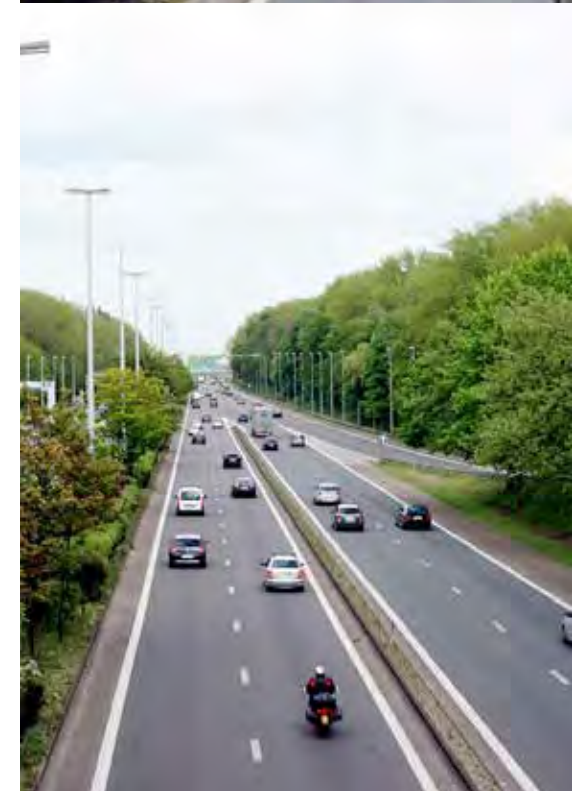
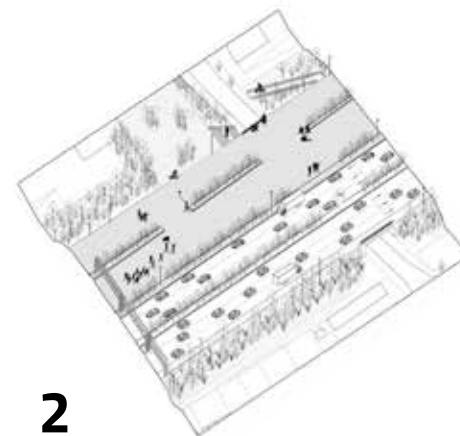
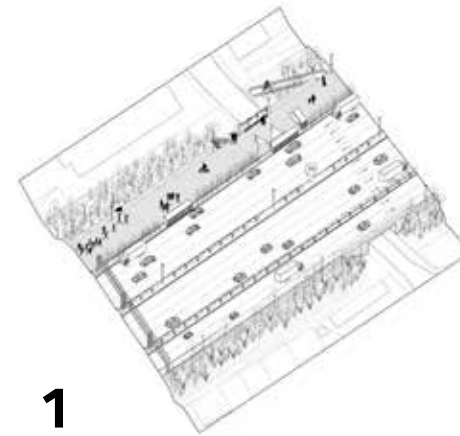
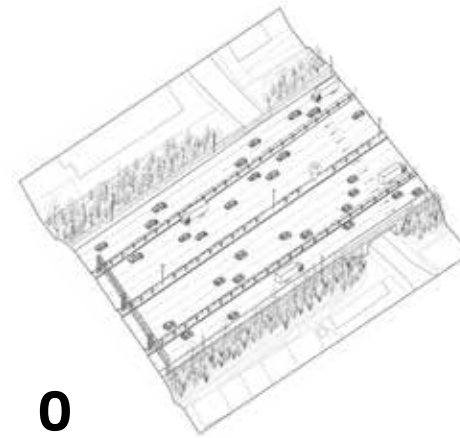
## E40 Highway in Brussels Urban Project

The E40 highway is one of the **main entrances** to Brussels.

The project aims to **upgrade the image** of the eastern entrance of the city through its transformation and urban and landscape **integration**.

Two principles guide the vision of the project. On the one hand, the metropolitan monument **dimension** of infrastructure invites to exploit this "supersurface" as an extraordinary resource. On the other hand, this search for the potential of the highway goes hand in hand with a desire for a radical economy of means and **recycling of infrastructure**.

Once the highway and its mobility are transformed, its **habitability** conditions evolve. These new conditions involve rethinking the E40 as a truly **public place** accessible to all and reconfiguring its **surroundings**.







## Student Residence Arcueil - Paris

The project operates the transformation of an office building.  
The existing structure, freed from its old facade, has been refined, revealing two distinct volumes, composed of **thin floors** and **poles**.

In this way a **visual crossing** of the building links the space of the street with the heart of the island.

The **rhythm** of the facades is chanted by the framework of the modules of elongated housing.

The **connection** of the external circulation to the structure optimizes the built surface: it eliminates any **central circulation** penalizing the surface and assigns the existing floors to the studios exclusively.

The corridors serve both access to dwellings and outdoor spaces, they prolong the cells of life and become their natural continuity.





"I think it's time for us [...] to try to design and understand **good infrastructures**.

But what's it?  
It's a structure that **contains time**.

It's at the same time something that precedes architecture and something that is after, that follows architecture.

So if we're trying to design good infrastructure, we need to think about the structure and about the uses and the people because it's a social act: everything in this matter is a **social act**."

Pierre Alain Trévelo



"We have to go deep in the idea that **public space** is something that leads us to the **essence**, the essence of the place, of being in a place, of being somewhere and looking at not only what is built by man but what man is adding to this Earth."

"The Earth is an **architecture**."

Pierre Alain Trévelo



# Andreu Ulied

## MCRIT

Expert in **planning, foresight** and **policy evaluation**.

Doctor Engineer from the Polytechnic University Catalonia (1996), and Master's in Planning from the University of Harvard (1994), with international experience in planning and foresight studies related to European territorial policies.

MCRIT Partner since the foundation of the company in 1988, and MCRIT Director since 1994.

At local level, he coordinates participatory and scenario-building processes in the frame of **urban development** and **mobility plans** in the region of Barcelona as well as in the rest of Europe (e.g. in Croatia), North Africa (e.g. Bizerte, Tunisia), Latinoamerica and the Caribbean (e.g. Blumenau and Palma, Brazil, Dominique Republic).

He regularly gives conferences and classes in **strategic planning**, foresight and project/policy evaluation at different universities.

He's the Director of the professional course on **Economic and Financial Project evaluation** organised annually by the Association of Engineers and Economists of Catalonia.





## Jörg Schröder

Leibniz Universität Hannover

He's an architect and an **urban planner**.

His works are focused on architecture and urban planning & design in **rural areas**, suburbia, peripheries, new urban constellations, metropolitan regions.

He's interested in projects for rural-urban cooperation, urban and rural development, on spaces connected to mobility, infrastructures and tourism.

Jörg is a researcher in analysis and concepts for territories as **built environments** of city and country.



## Beyond Rural Design “Landraum”

The country is the white spot of contemporary architecture.

Living spaces seem to be urbanising increasingly, while the **country** is blocked out.

Which **spatial structures** and methods prevail in these areas?

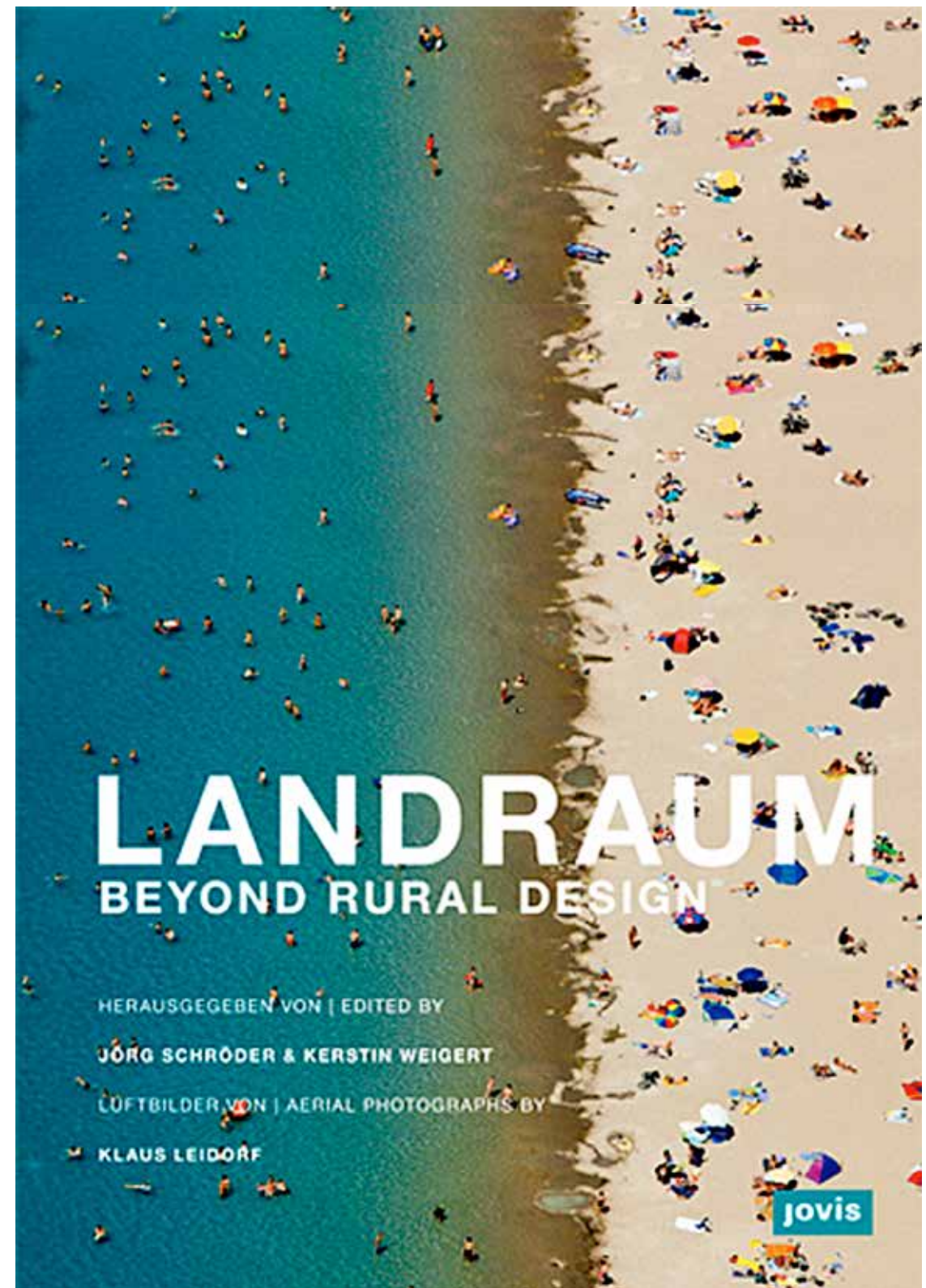
How do rural and urban lifestyles and settlement areas influence each other?

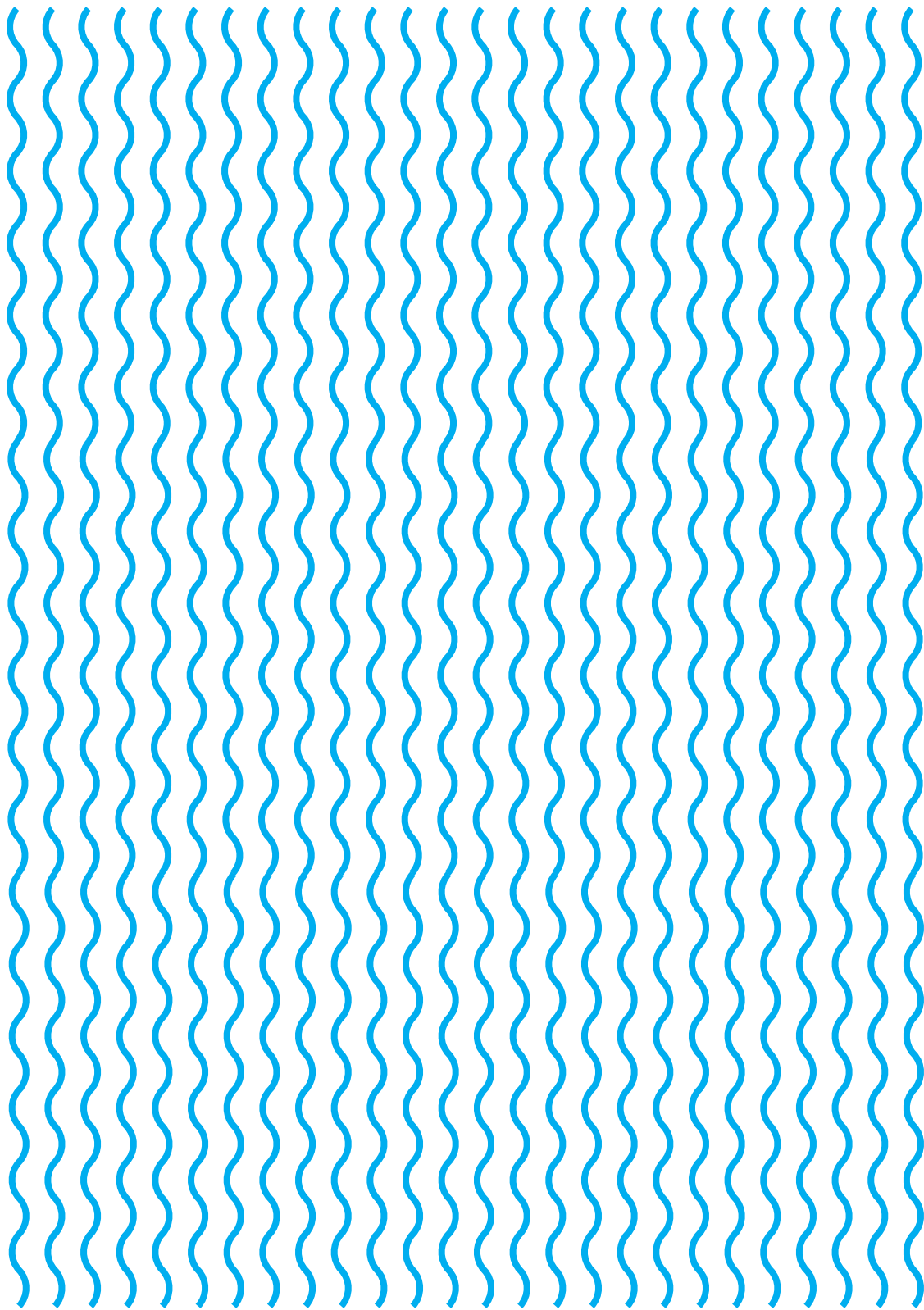
Can a **global back country** develop via rural fringes, country pioneers, and local energies?

What effects does the **increasing awareness** of food production have on architecture and urban development?

By means of a spatial, architectural approach, Landraum tries to accommodate the dynamics of **rural areas** in instruments of perception and design.

It puts large-scale work to discussion from an architectural perspective and calls for a rediscovery of the **periphery** on the basis of student projects, research projects, and artistic interventions.





**STUDENTS:**

Maddalena Boccaccio

Clarissa Casagrande

Chiara Esibiti

Silvia Guerinoni



# ARETI MARKOPOULOU

## Responsive environments

The world is changing, so it is important to have an high ability of adapting, in our activity that means that we have to design systems which relate with their environment.

Design is becoming more about the performance than the design itself. It is extremely important to make it interact with its contest. We are no longer talking about technology, but how do people feel about it, about their perception.

So the difficulty now is combining the space with the technology. It's tough because technology keeps changing and improving.

For example in the 60's computers were huge, they barely fit in a room, but now they can be nanoscope, and the amount of datas they can keep has changed too.

The cities have gone through transitions too. Let's think about the streets, in the past they were narrows, but now they have to be big enough to let cars pass along them, and there are also special structures for the traffic.

The industrial revolution is strictly related with connectivity. Now information and communications are available for everyone, at every time and everywhere. We can say we went over the distance.

The datas have developed, we have both physical and virtuals ones. We can say that technology has modify the physical space.

Now there is the trend of the smart cities, but how can these cities think? There is a great cooperation of everything, all the ideas are shared and everything goes around electronics and science. So all the new projects come out after having pounded all the datas. And all the datas we have nowadays are no more approximated. This is happening because everybody is using interfaces, apps. We have optimized the distance and we are more integrated in the human complexity.

We saw the picture of an interactive path in Barcellona. It was more a game than a design tool. Movements were showed with the use of technology and people really enjoyed it. Areti also pointed the attention on the Programming Buildings. That means consider buildings as organics organisms made with smart materials that change during their existence. Especially they can transform their shape because they had been created with kinetic structures that allow them to move.

Others future goals will be building using growing materials and physical interfaces, as a new membrane which absorb and give energy and keeps heat. It was very interesting discovering new small robots that they behave like a 3d printing and they can build structures bigger then themselves using new or natural materials.

We also saw a solar house which can capture maximum of solar energy and keep it for many months. It has a special shape to capture as many solar rays as possible. To project in a correct way we have to integrate technology in order to let our creations change during the time.



# QUOTES

Areti Markopoulou

"We went over the distance."

"Design is more about the performance than the design."



"Everybody is more integrated in the urban complexity."

"Can cities think?"



## PIERRE ALAIN TREVELO

He explained his vision of earth as a big building, it is our world and heritage that we have.

He showed us pictures of different constructions through the years, from the Ziggurat to the HKG airport, to explain us how mankind has been modified by the time.

It is important to see the signs of the ages on the buildings and preview how they will be in the future.

For this reason the data is very important in the project.

The earth is an infrastructure: it contains time.

The future is technological, we will have different types of technology because we are different people and everyone cooperates using his own interest and experience.

A good infrastructure is a structure which contains time. One where it is possible to see below and to see what has happened before. So it is imperative to show what preceded architecture and what will happen after. Before doing anything on a building we have to design well and give a new use of it. As in the house that Andreu showed us, where he changed the internal structure of the corridor, but still keeping the shape, in order to maximize the space ( in this case using balconies).

The structure is important to understand the role of the building, what that building has been created for.

Everything keeps his old memories, like Paris, where it is still easy to recognize the first two ancient boulevards in its map.

We also saw the project of an highway in Bruxelles where Ulied tried to keep the old scenario and the old story but improving it using an acoustic treatment and adding space.

We saw an intervention of Place de la République. That square is important because it is a symbol, there is a statue in the middle that represents France. The point was to keep the horizontal, the sight, but creating meanwhile a pleasant place .

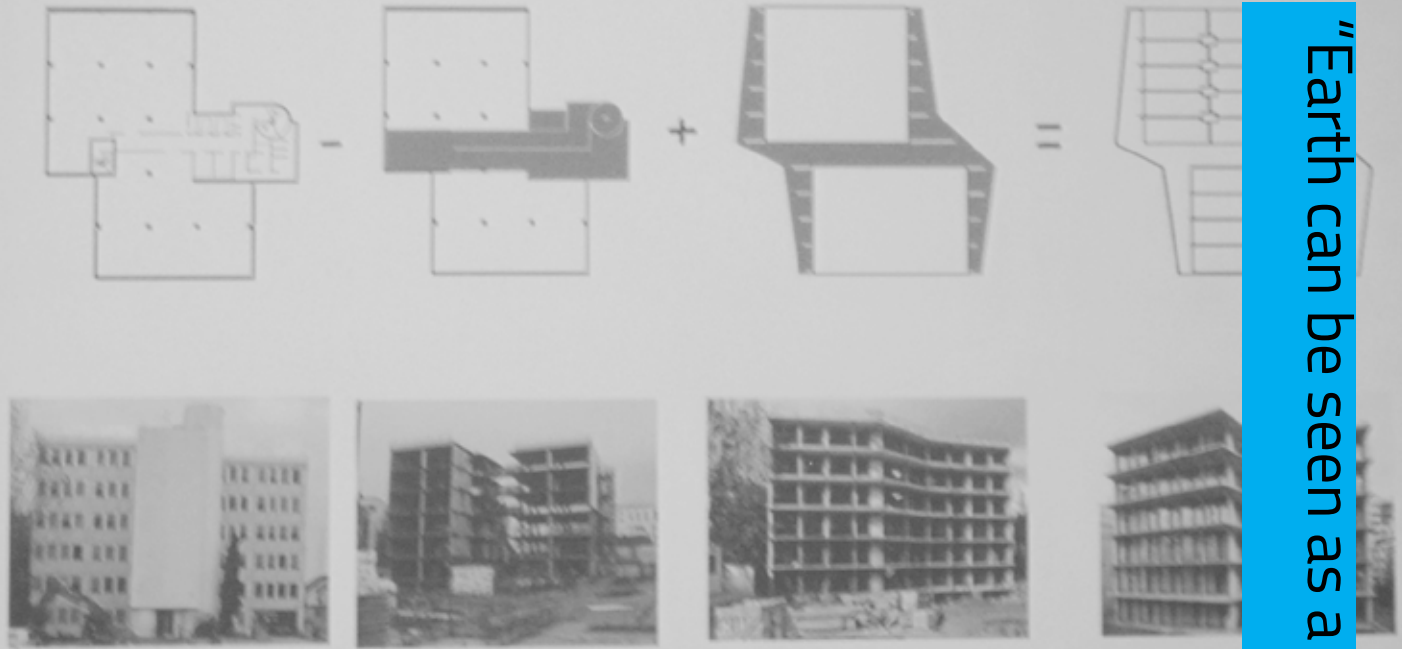
Last example was the space around the metro station of Losanna, it was very important because the public space gives you the essence of the space.



# QUOTES

Pierre Alain Trèveolo

"Earth is our world and our heritage."



Before planning anything you must know the existing conditions."

"Earth can be seen as a big building."



## ANDREU ULIED

He did just a short presentation for problems of time.  
He exposed to us the idea that he shares with the Italian writer Italo  
Calvino about which components art should have:

- LIGHTNESS
- QUICKNESS
- EXACITUDE
- VISIBILITY
- MULTIPLICITY
- ( CONSISTENCY )



# QUOTES

Andreu Ulied

Six memos for 21th Century "Advanced Literature"  
by Italo Calvino (1988)

*Lightness*  
*Quickness*  
*Exactitude*  
*Visibility*  
*Multiplicity*  
...  
(Consistency)

"The challenge is to give consistency to art."



## JORG SCHROEDER

In the last year our society has changed, people moved from the rural areas to the big cities and there the population is still growing. It is estimated that in 2040 75% of people will live in megacities.

So, now more than ever, we need strategies to solve the problems connected with the high density of population, like food supplies and the production of electricity.

A solution can be what is usually called RUBURBAN. That consists in creating rural areas inside the cities.

An example is Munich. It is surrounded by the mountains, so it is placed in the nature, but it has an industrial area with many factories and infrastructures, meanwhile it has many rural areas with waterfront that can produce food and electric energy. It also has agricultural fields inside the city.

An other example about how countryside has been integrated with the metropolitan city is the market of Sao Paulo. This commercial area has been built in the 60's, it is a huge covered market with many infrastructures to help the exchanges.

In Germany it has been created a net of connections between the different regions that goes to the sea. Many metropolitan areas are involved, but they still keep their characteristic, this is what is called Regiobranding.

Something similar has happened in the area around Alps with the EUSALP. Region from different countries, but having in common their location, created a cooperation to help each other with resources and trades.

To create this connection of infrastructure it is very important to diagnosis and mapping.

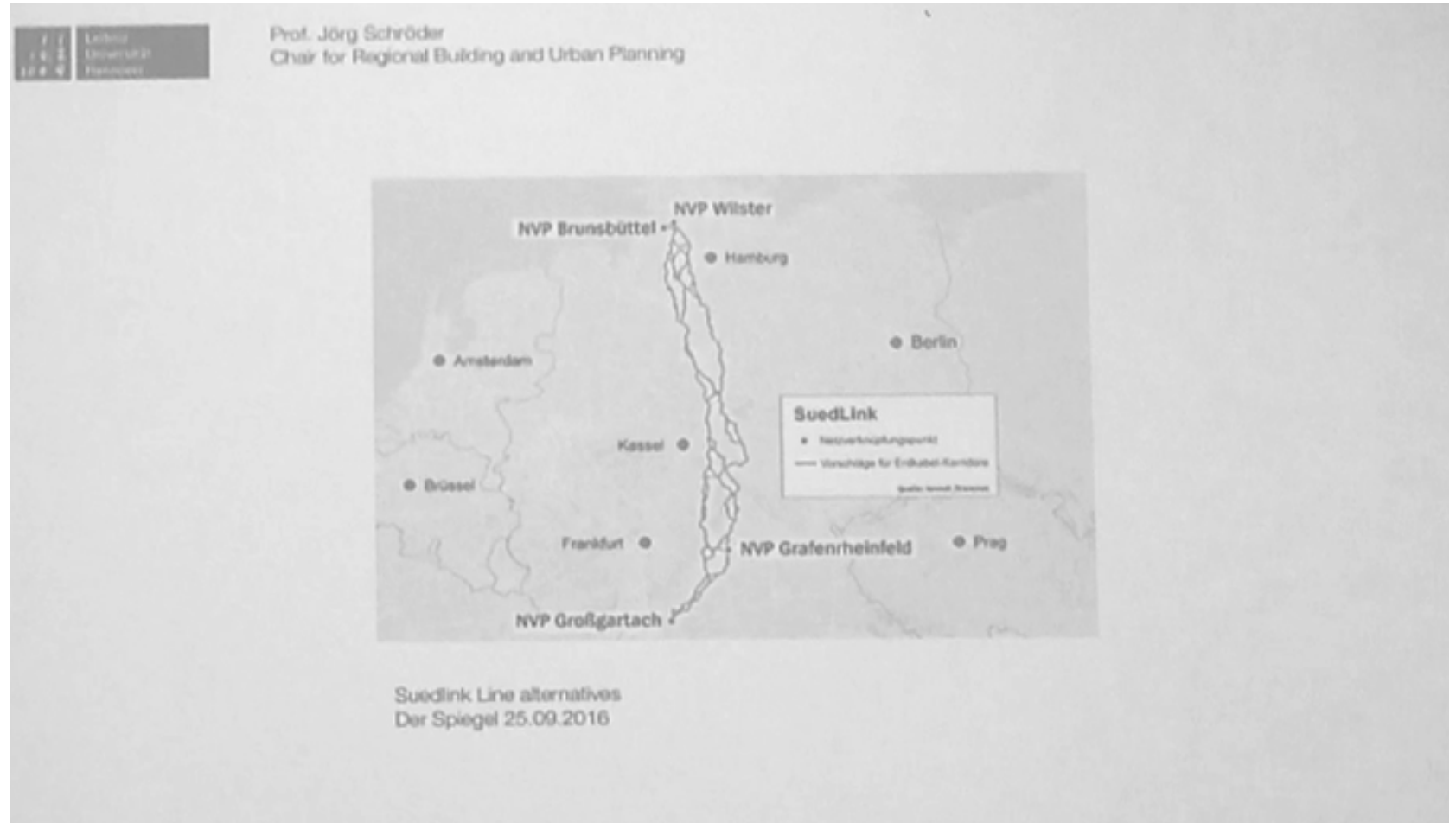
There is a cycling planning process that consist in:

- Plan and project
- Evaluation and monitoring
- Formulation objectives
- Survey and analys
- Concept building



# QUOTES

Jörg Schroeder



It's very important for the architects to do more for the mapping."