

**t?f**

The Why Factory

# RESILIENCE

TESTING REGIONS UNDER STRESS

Design Studio

ANCB The Metropolitan Laboratory

Aedes am Pfefferberg

Christinenstr. 18-19

D-10119 Berlin

Nov 9 - Nov 18, 2012

# **RESILIENCE**

TESTING REGIONS UNDER STRESS

### UNIVERSITY DESIGN STUDIO

The Why Factory

Exploring Resilience and Democracy: Urban Regions Under Stress

9 November 2012 - 18 November 2012

### DESIGN STUDIO TUTORS

Prof. Winy Maas (head of The Why Factory)

Felix Madrazo, tutor responsible

Alexander Sverdlov (tutor)

Giovanni Bellotti (teaching assistant)

### PARTICIPATING STUDENTS

Joshua Harrex

Afke Laarakker

Lila Athanasiadou

Trine Bolviken

Paulina Czynczyk

Maciej Wieczorkowski

Linda de Geus

Bram Groeneweld

Mark van den Ouden

Danil Chekushkin

Ouden

Liao, Chi-Yi

Jia, Chen

Chung Heng, Kwong

Hiu Sze, Yip

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Ministry of Infrastructure and the Environment



### Testing the concept of Resilience

Within a context of economic anxieties, environmental concerns on the future, demographic pressures and political unpredictability spatial planning increasingly find itself positioned in the role of speculating scenarios that would map the impacts of these unpredictable drivers in the future cities.

Yet while scenario making is a key method to understand the implications on space of such uncertain futures it certainly lacks a critical position regarding the role cities can do not only to prepare for the difficult moments but also to value the role of existing resources that could be activated in the case of such unwanted events. Cities should be interested beyond surviving targets; they should be able to confront the uncertain futures with the help and support of their own devices. After a degree of pressure they should be able to resist it, and to a great extent they should be able to return to their original state.

Resilience as a concept to explore the qualities and characteristics of cities that make them more robust to resist unexpected events becomes a useful term, an exemplary concept that planners could use to test the capacities of cities and buildings to absorb dramatic change without losing their essential elements and identity, something that is close to resilience original meaning: adjective (of a substance or object) able to recoil or spring back into shape after bending, stretching, or being compressed. The exercise works therefore on thinking and exploring the meaning of resilience in architecture and urban planning.

### Strategies:

There are multiple ways to achieve resilience but the goals should be clarified. The planner Thomas Sieverts

mentions the following:

- Prevention by source longevity
- Ease of reparability by mistake kindness
- Mitigate the discrepancy between the built structure and longevity. Nondurable speed of uses by redundancy
- Terms of openness and space savings due to multiple encodings
- Energy savings from favourable constellations of space and building designs.

The target of this workshop is to explore new methods to test resilience on cities and to contribute for the expansion of concepts that are useful as tools to improve the resilience of cities.

#### **The region of Brandenburg as a case study**

The workshop will test its different application on the region of Brandenburg. The planning authorities have drafted strategies that point out areas of interest and have decided to improve them as a mechanism to make them attractive for citizens and investors alike. This is done following the slogan 'strengthening strengths'. Yet the region is already under stress from several vectors: demography, economy, and environment. It therefore offers challenging cases to speculate on its future. For example, from a demographic perspective while the city capital stays stable in the forecasted scenarios, the immediate city ring (Berlin Umland) seems become stronger and more dynamic. Yet the rest of the region or its outer periphery encounters a likely shrinkage of population from 1.9 million in 1990 to 1.2 million expected for 2030. As economic boom years are questioned, investment meanwhile cannot be evenly distributed if it does want to create change. This means that cities, villages and regions will be either benefited or become more isolated

from the dynamics of the whole. In this sense resilience as a word to inspire the disconnected and potentially isolated places to embrace another type of urbanism is needed. What sort of shortages of labour, deficits and stress in the provision of social services and infrastructure become crucial to remain in the map.

#### **Sketches of a method**

How to achieve resilience requires research of formats: thinking, doing and discussing can be useful. The concept is explored through a varieties of stressful scenarios with different degrees of intensities .The stress tests are a concept borrowed from economy where resilience is proven during crisis scenario planning called 'stress tests'.

#### **The stress tests chosen are:**

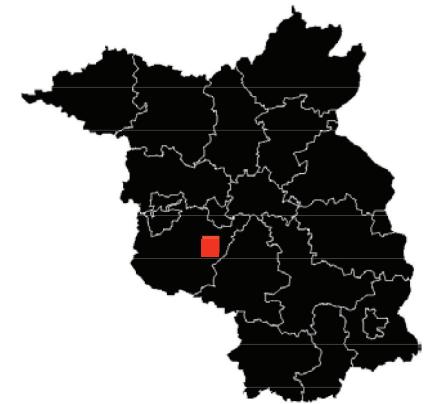
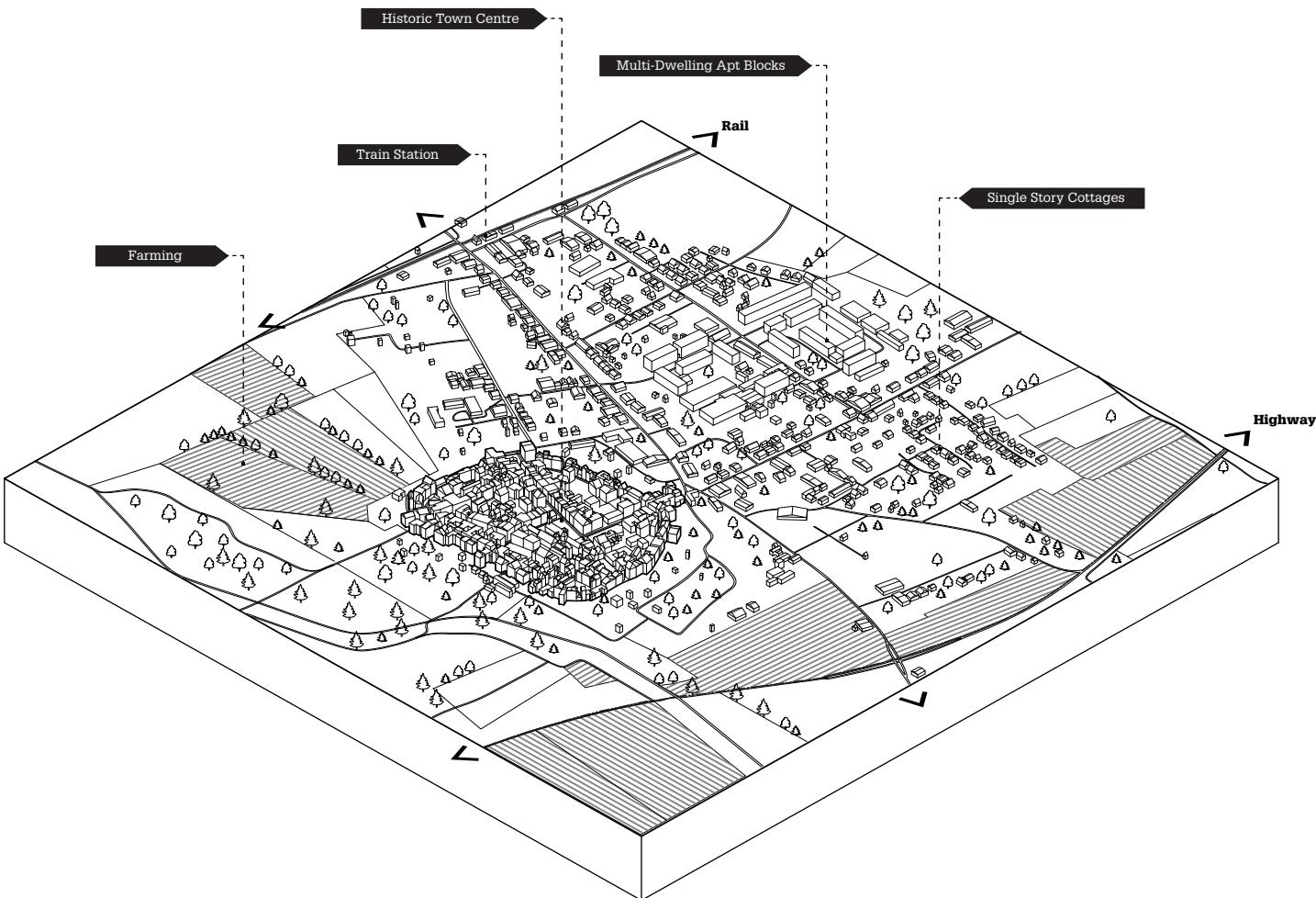
1. Stress Test 1: Demography / Labour Shortage
2. Stress Test 2: Economy / Increased Privatization
3. Stress Test 3: Environment / Climate change

#### **Sites:**

5 cities or villages were chosen including the 5 planning regions of Brandenburg. The test is done within a 1x1 km area.

# Welcome to Beelitz

## *Breaking Ground*



### **Beelitz**

Region: Havelland-Fläming  
District: Potsdam-Mittelmark  
Area: 180.08 km<sup>2</sup>  
Energy Main: conventional  
Alternative: wind and photovoltaics farms  
Demographics Population: 11,831  
Density: 66 /km<sup>2</sup>  
Consistency: Mainly German  
Forecast in 2030: 15% decrease  
Climate Rainfall: 530mm (lowest in region)  
Economy Type: agriculture based (asparagus, pumpkin)

Politics Mayor: Bernhard Knuth

The town of Beelitz, located 50 km south-west of Berlin is famous for it's precious white asparagus farms. Spring months from April to June are the busiest here, with harvesting and festivity, they also bring most of income to the city. After the end of asparagus Beelitz turns into an empty and depressing place.

Beelitz consists of a medieval old city center and a spread of new developments, located mostly north of the historic structure. It is surrounded by grasslands and farms that begin just where the town ends. The edge between urban structure and landscape is very sharp.

# Welcome to Beelitz

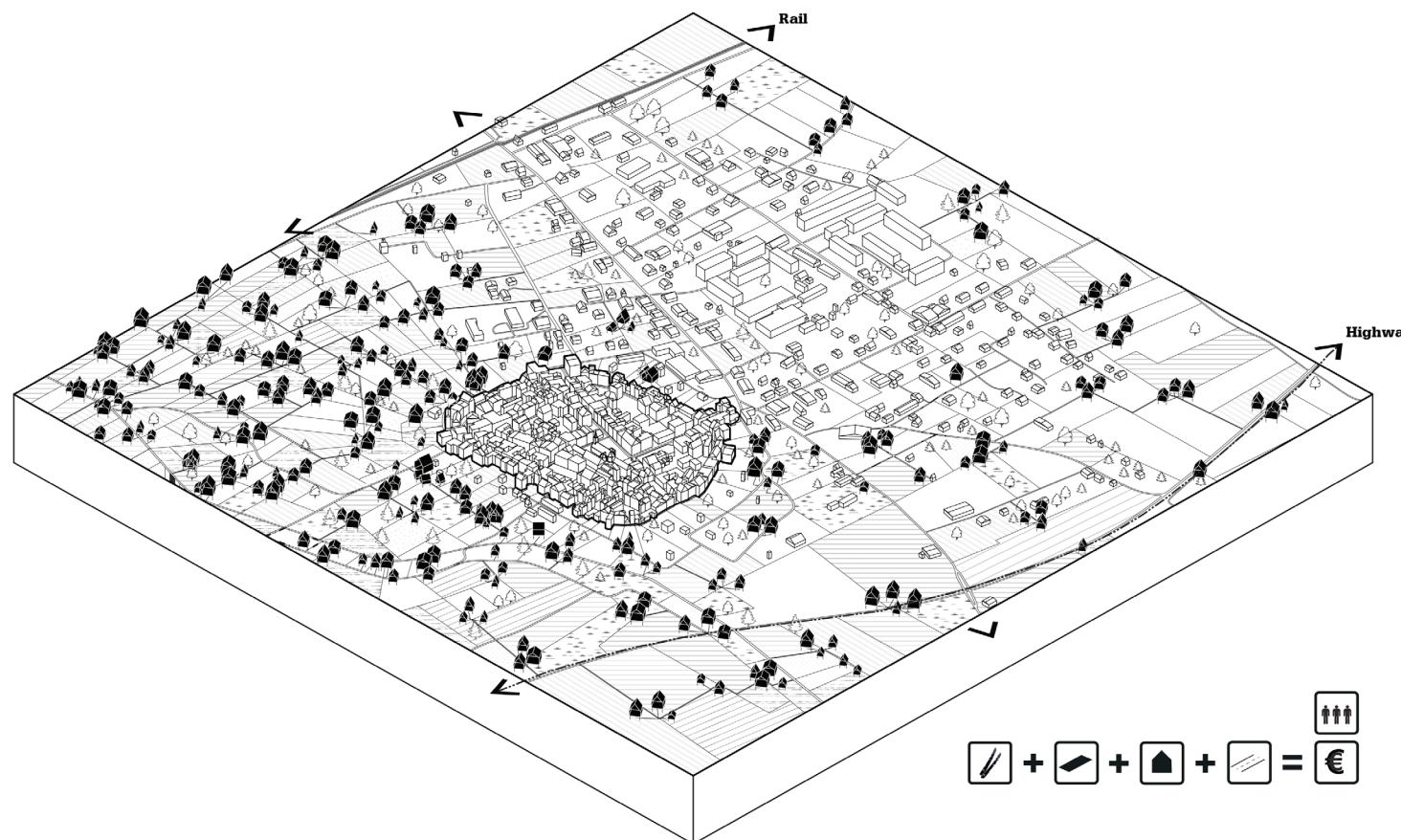
Lila Athanasiadou, Pola Czynczyk, Joshua Harrex



# Labour Shortage

## Stress test #1\_demography

13/11/2012

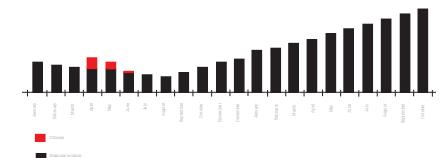


### resilience through ENGAGEMENT

Currently most of the harvesting work on asparagus farms in Beelitz is done by seasonal workers coming mostly from Poland and Ukraine.

In the Labour Shortage scenario we test how Beelitz could withstand lack of seasonal workers from abroad.

The strategy to achieve resilience is to engage the locals in the farming business. By giving them an incentive, a lifestyle package of work, leisure and ownership we diverge the economy from a macro-scale fragile industry to swarm-like fragmented organic farms.

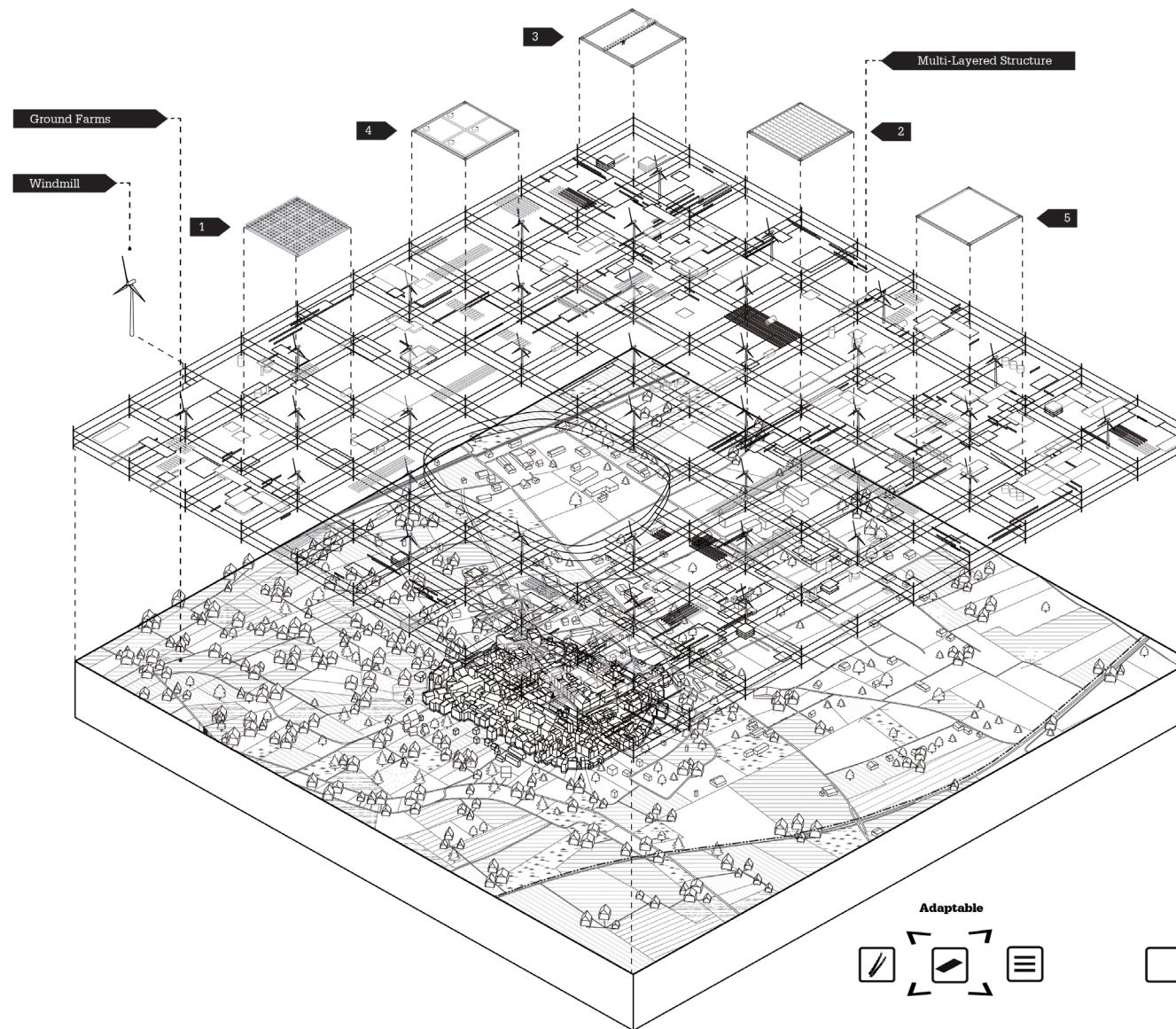




# Privatization

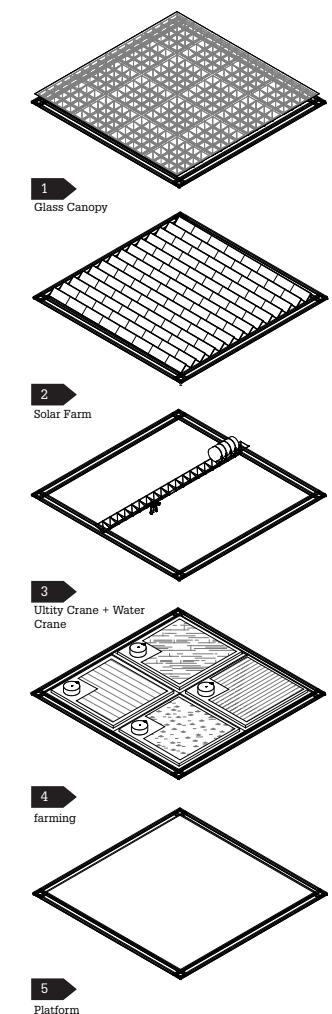
## Stress test #2\_economy

14/11/2012



### resilience through OVERLAYING

The rich soil of Beelitz attracts investors that privatize the whole area aiming at maximum profit by minimizing the buildings footprint to maximize the farming land. By overlaying activities not just physically in the structure but also in time, every season accommodates a different program that relates to the citizen's hand-crafting skills.

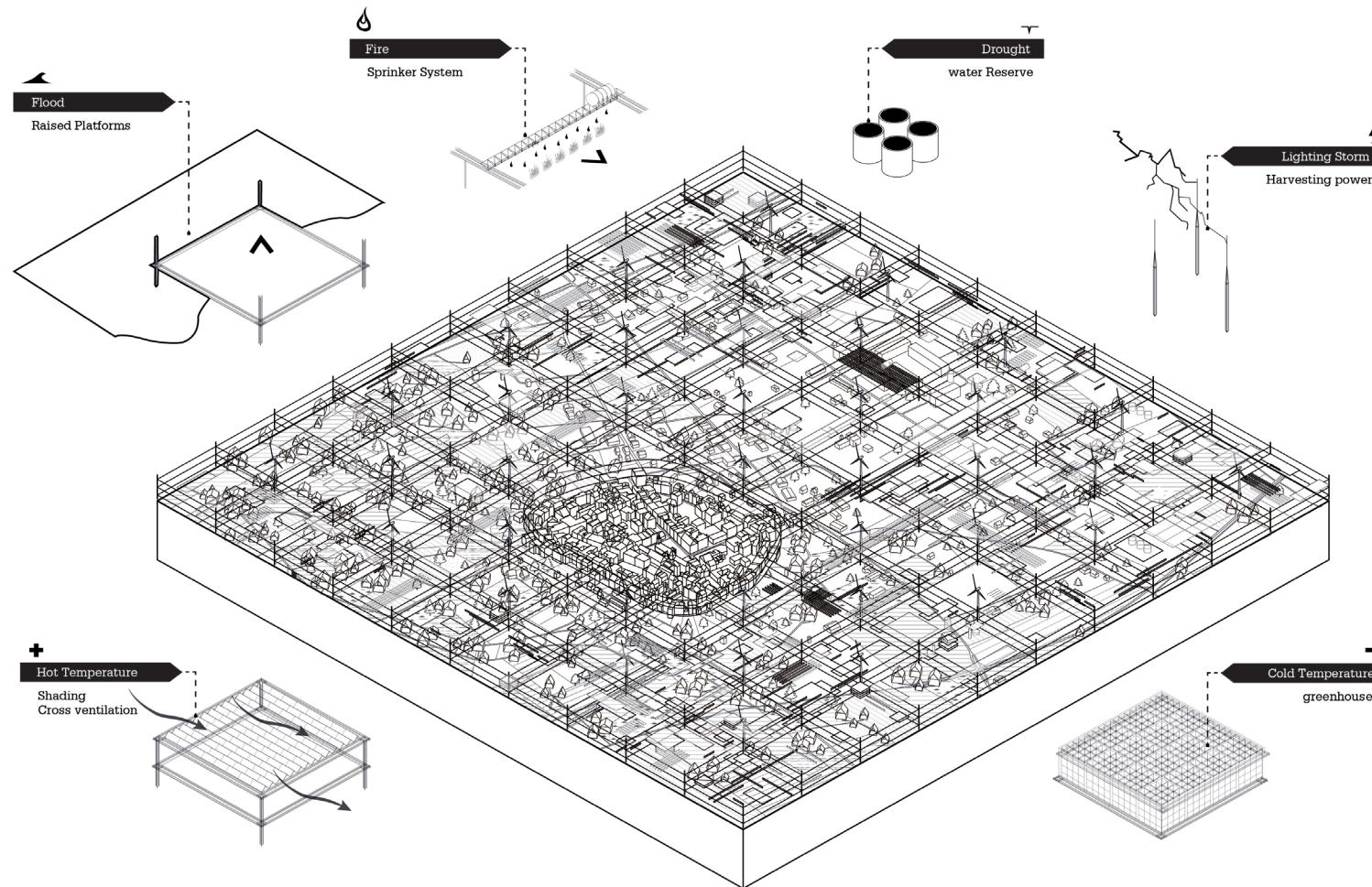




# Schizophrenic Weather

15/11/2012

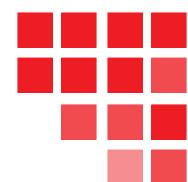
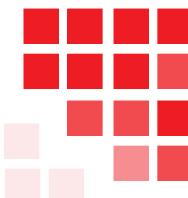
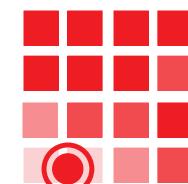
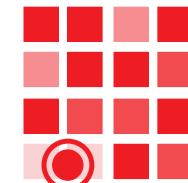
## Stress test #3\_climate change

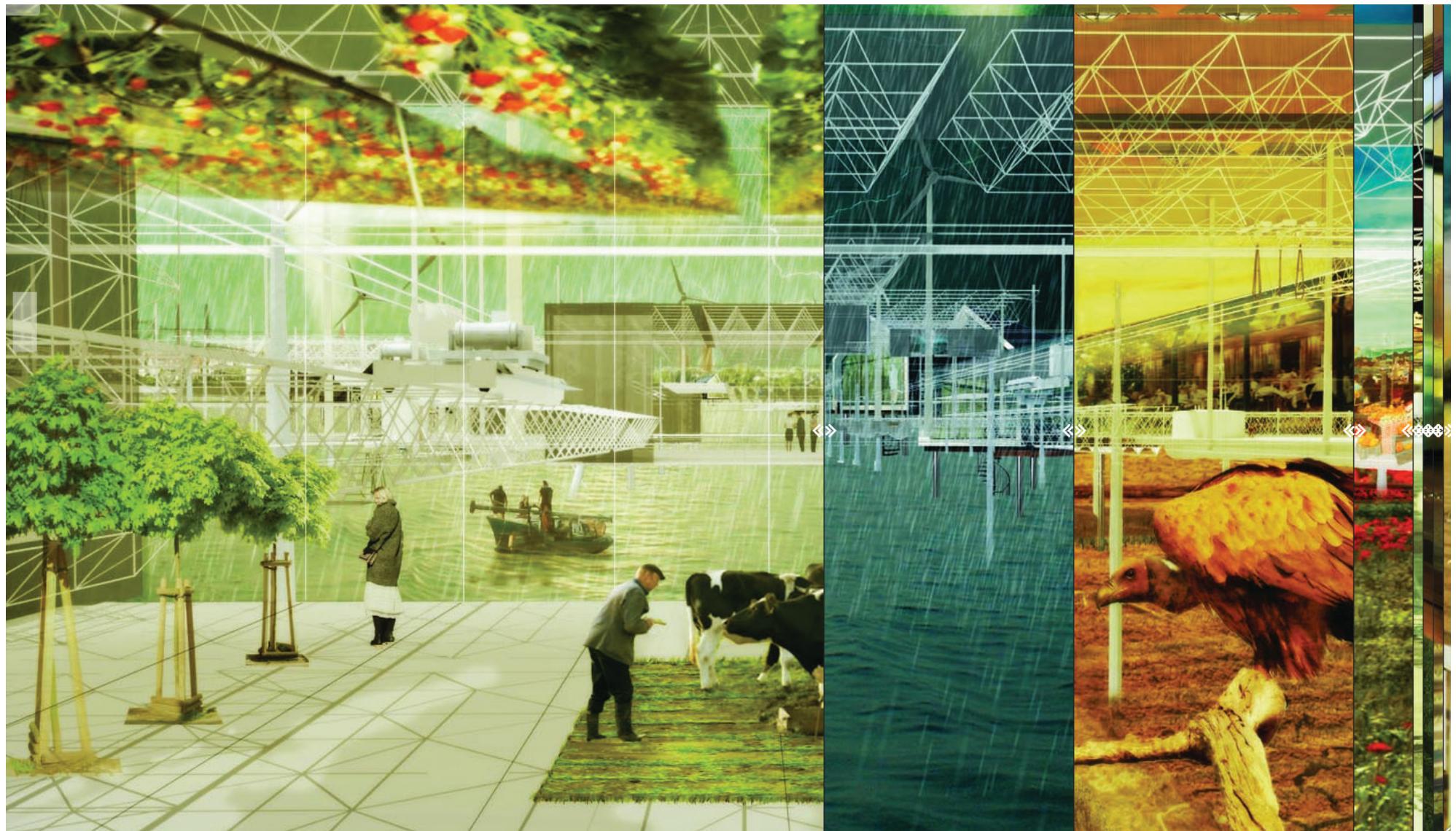


resilience through

### STRENGTHENING THE STRENGTH

Not being able to predict the climate the structure becomes a hybrid that hierarchize between the parts that are strong and the parts that are weak. Through redundancy and adaptability the structure creates interior microclimates by combing surfaces and services according to the current needs. Furthermore, resilience is achieved by minimizing alienation and maximizing the vitality and communication between the agents that constitute the structure. sim ante vitæ quam congue interdum.

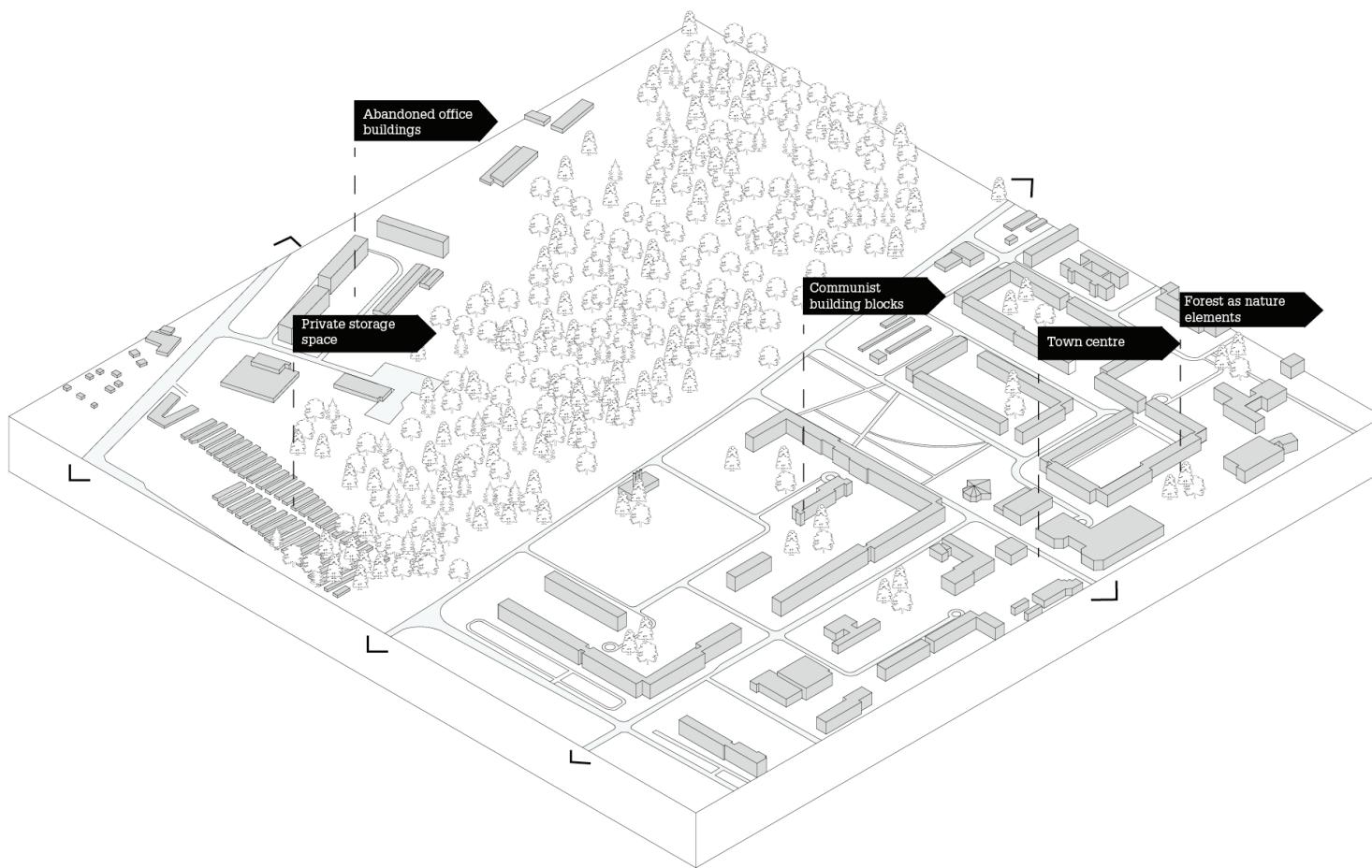
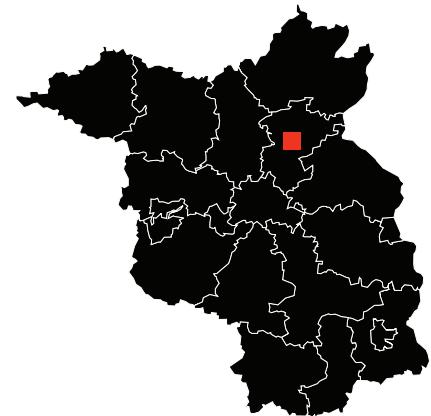




# Welcome to Finow

Communist town in distress

12/11/2012



## Das Brandenburgische viertel

The Brandenburgische Viertel, a part of the city of Finow, is characterised by a structure of communist blocks, surrounded by a forest setting of pine trees. This structure consists of concrete prefab building blocks with a lot of open space around them.

The current inhabitants consider their neighbourhood as a ghetto. More and more people move away and as a result, many buildings are being destroyed. At the moment 20 % of them is unoccupied. Next to this, there is hardly any economic activity within this part of the city of Finow.

The Brandenburgische Viertel arose within the context of the need for industrial housing. Between 1978 and 1989, 5313 apartments in five- and six storied were build. There is a underdeveloped neighbourhood-identity and a small engagement in community-life. Over the last ten years moved-in people consider to move out again, mostly for social motives. Half of them would move out because of the bad reputation of the residential area.

30% of the inhabitants are original inhabitants from the beginning. The unemployment is twice (30 %) as high as in the surroundings. The low-income part of the population is three times bigger than in the surroundings.

## General information

Data of build	1978-84
Inhabitants	6.177
population decrease	45,6%
% of vacancy	18,7%
People under 21	16,6%
People older than 65	18,2%
People uninplod	20%

# Welcome to Finow

11/11/2012

Linda de Geus & Mark van den Ouden



# Labour Shortage

## Stress test #1\_demography

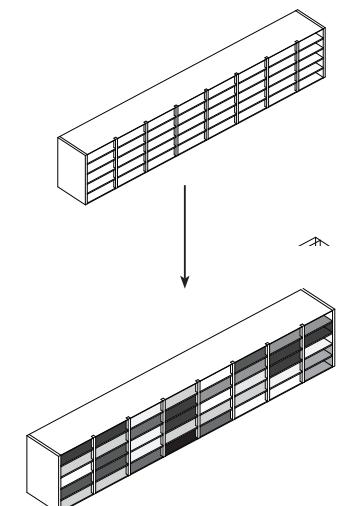
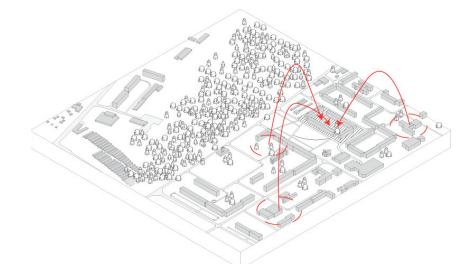
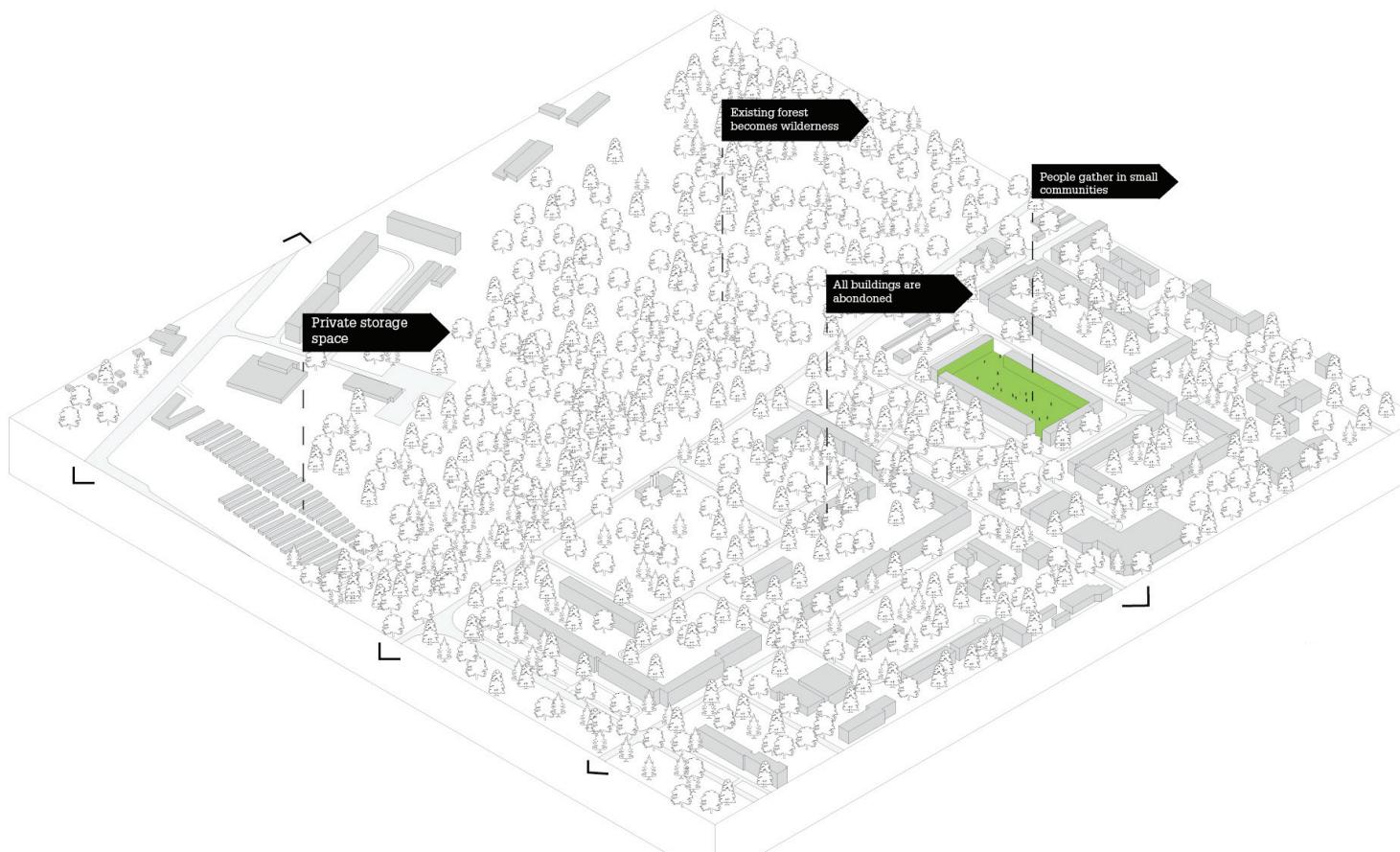
13/11/2012

### resilience through ELASTICITY AND REDUNDANCY

The communist building blocks have a large potential because of their (simple) prefab frame structures. One can adapt an apartment easily to the own preferences.

The area around the blocks is redundant through the composition of building blocks: it allows the formation of smaller communities within the bigger entity. In this way different 'islands' can exist.

The last survivors concentrate themselves in one 'island'. The open structure of the building blocks allows them to create new typologies. More people join their efforts to create a small but 'healthy' community within the surrounding, deteriorating neighbourhood.





# Privatization

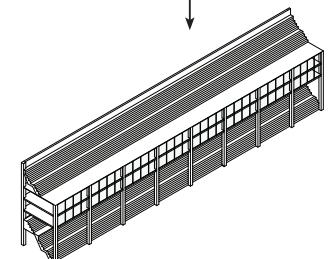
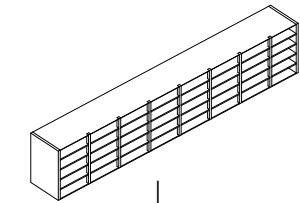
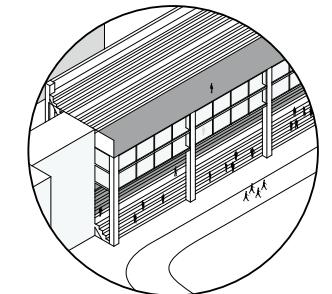
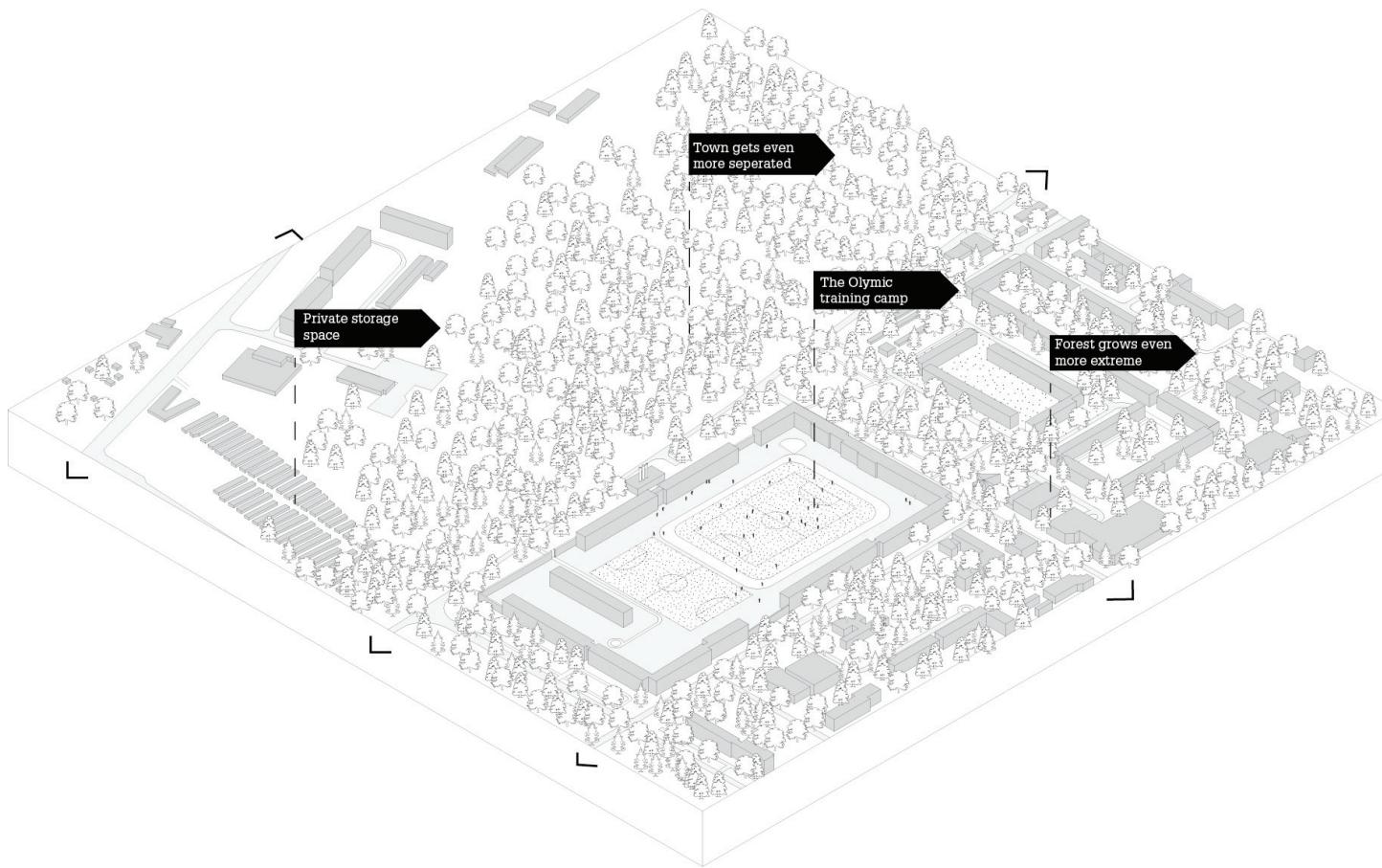
14/11/2012

## Stress test #2\_economy

resilience through TRANSFORMABILITY  
THROUGH REDUNDANCY.

The 'islands' that can be created within the neighbourhood's area differ greatly in appearance: one can form smaller communities and bigger facilities. In this case, Roman Abramovich, owner of Chelsea, is privatising another block. He turns it into an Olympic training camp. The chosen block is perfectly suitable because of its large size and possibility of isolation and exclusion from the surrounding environment.

The communist blocks itself allow in this case a big variation of functions, such as loft-apartments, tribunes, connecting (public) corridors and training facilities.





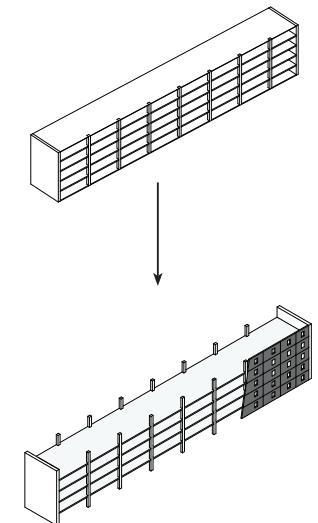
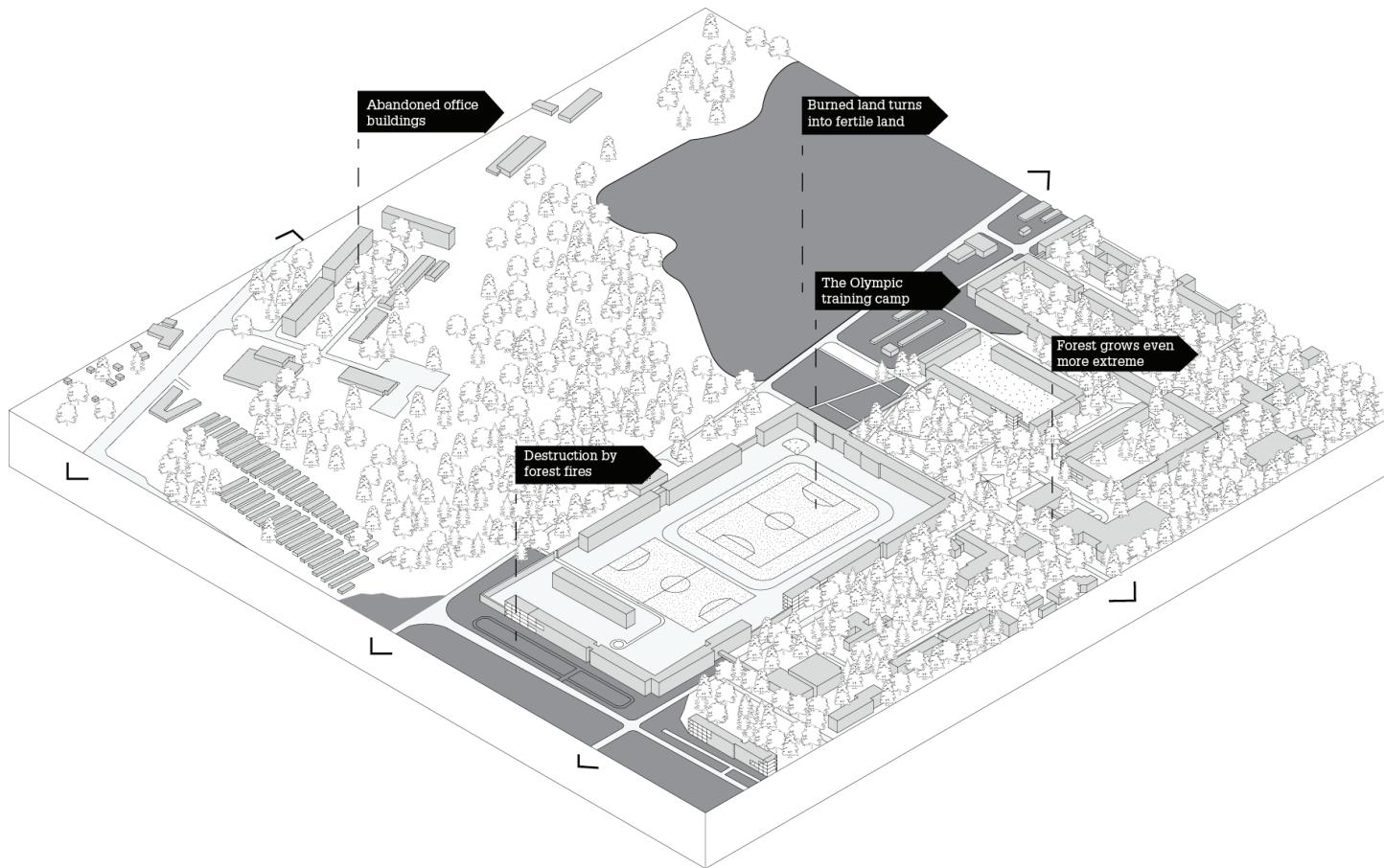
# Schizophrenic Weather

15/11/2012

## Stress test #3\_climate change

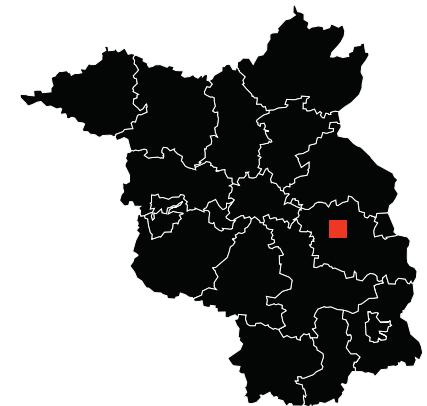
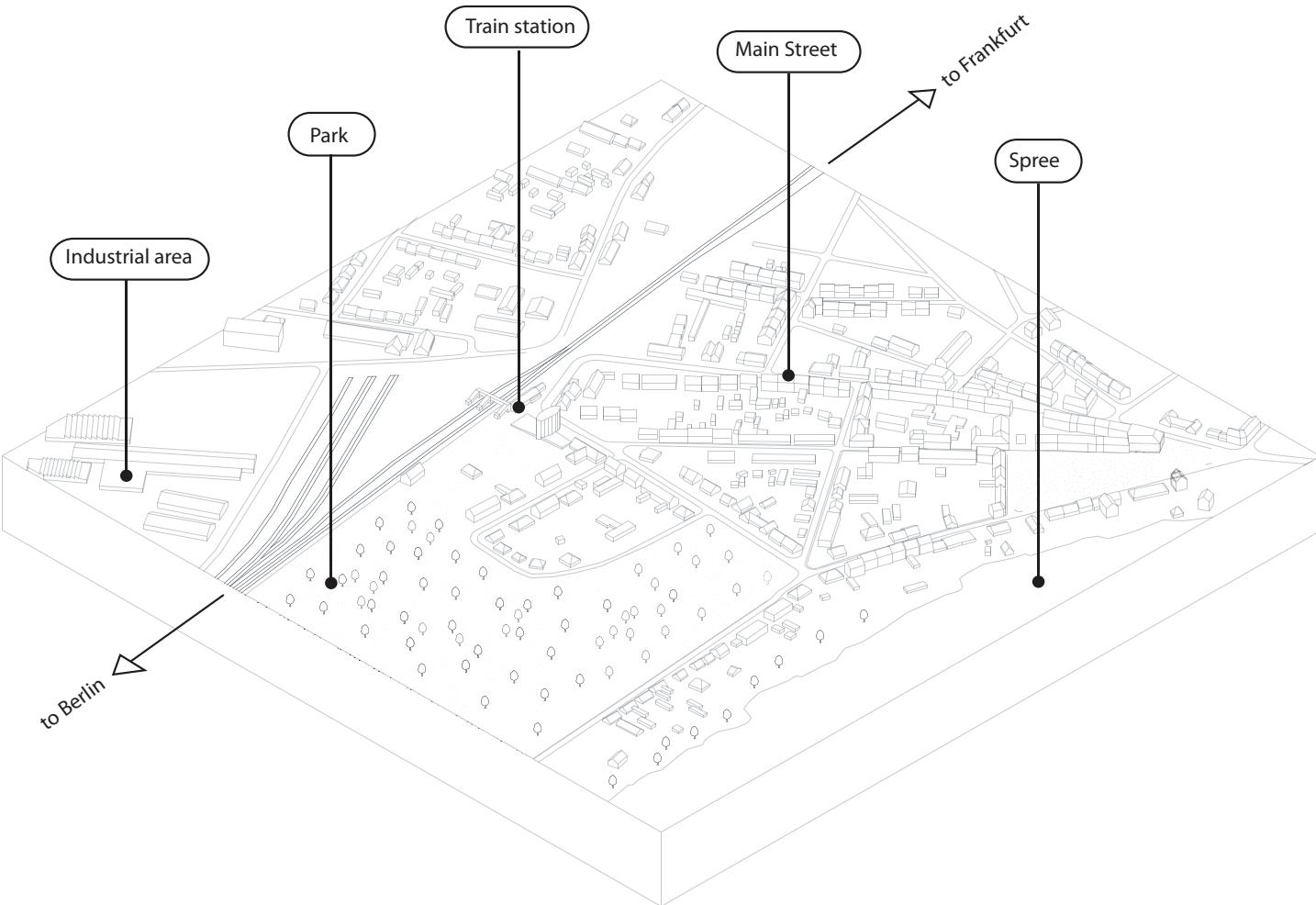
Resilience through SOFTNESS AND PERMEABILITY .

When the weather becomes extreme, the softness of the building blocks creates its resilience. Whether freezing storms, forest fires or sand storms - the walls of the blocks allow hail and snow damaging them; fire to burn them – becoming fire-resistant (tree-core effect) and the entering of sand dunes. A safe core structure in the middle of the building is kept and people can survive any kind of schizophrenic weather.





# Welcome to Fürstenwalde



Fürstenwalde

District: Oder-Spree

Location: 60 km from the center of Berlin

35 km to Frankfurt / Oder

City Area: 70.52 km<sup>2</sup> (7052 hectar)

4,500 hectares of communal forest

Population: approximately 32,500

Households: approximately 21,700

Leisure, Culture, Sports:

41 sports clubs

22 cultural

social clubs with over 6,500 members

Retail

280 retail stores

sales area of approx. 87,500 m<sup>2</sup> (approx. 43% of the city center)

Industry:

Main manufacturing companies:

Traffic, mobility, logistics:

Energy Technology:

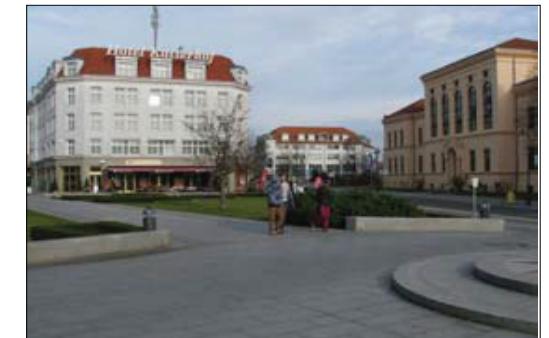
Plastics / chemicals:

Metal (chemicals and metal)

# Welcome to Fürstenwalde

Afke Laarakker, Maciej Wieczorkowski and Trine Bølviken

12/11/2012

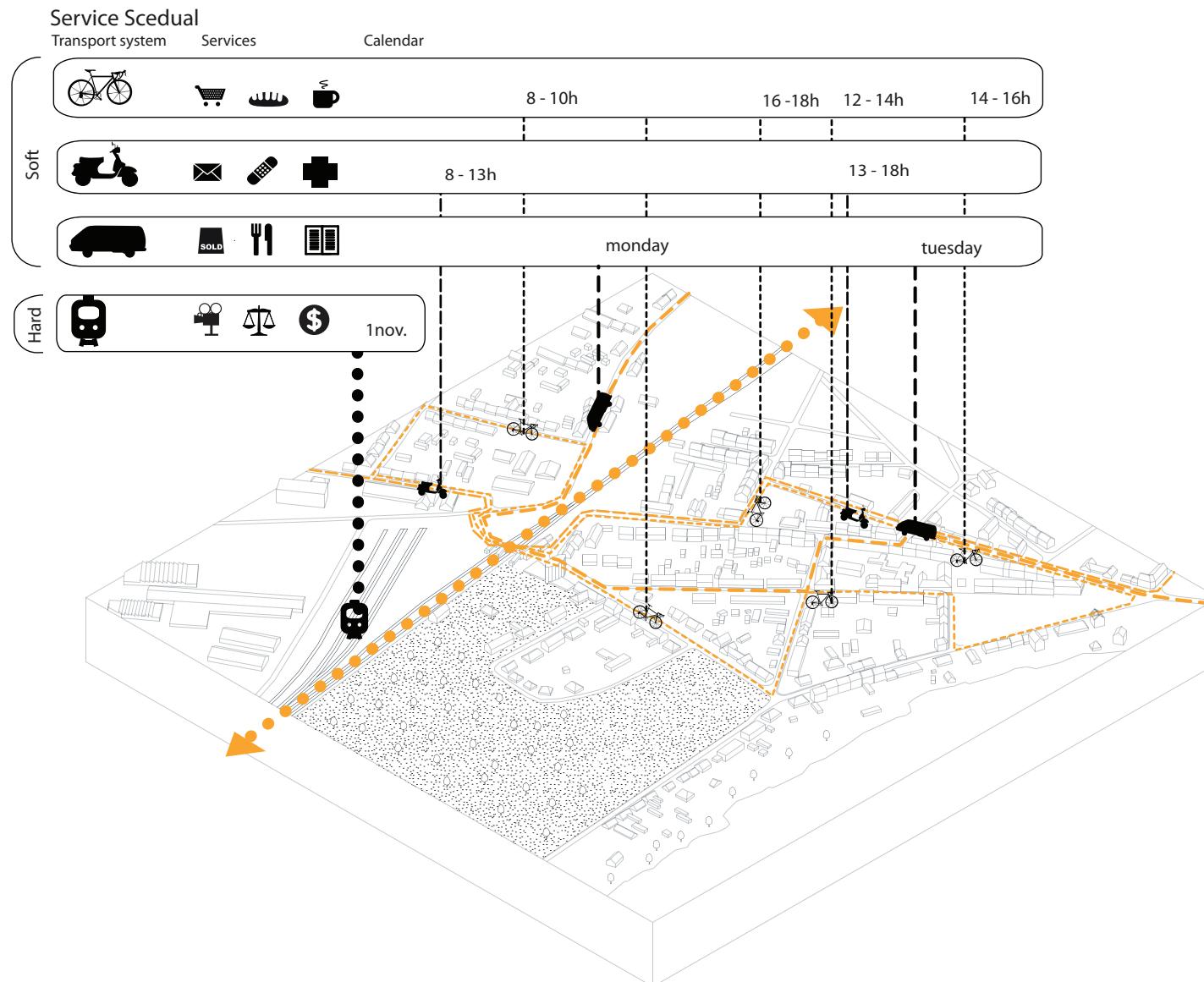


# Labour Shortage

## Stress test #1\_demography

13/11/2012

Resilience through CAPILLARITY





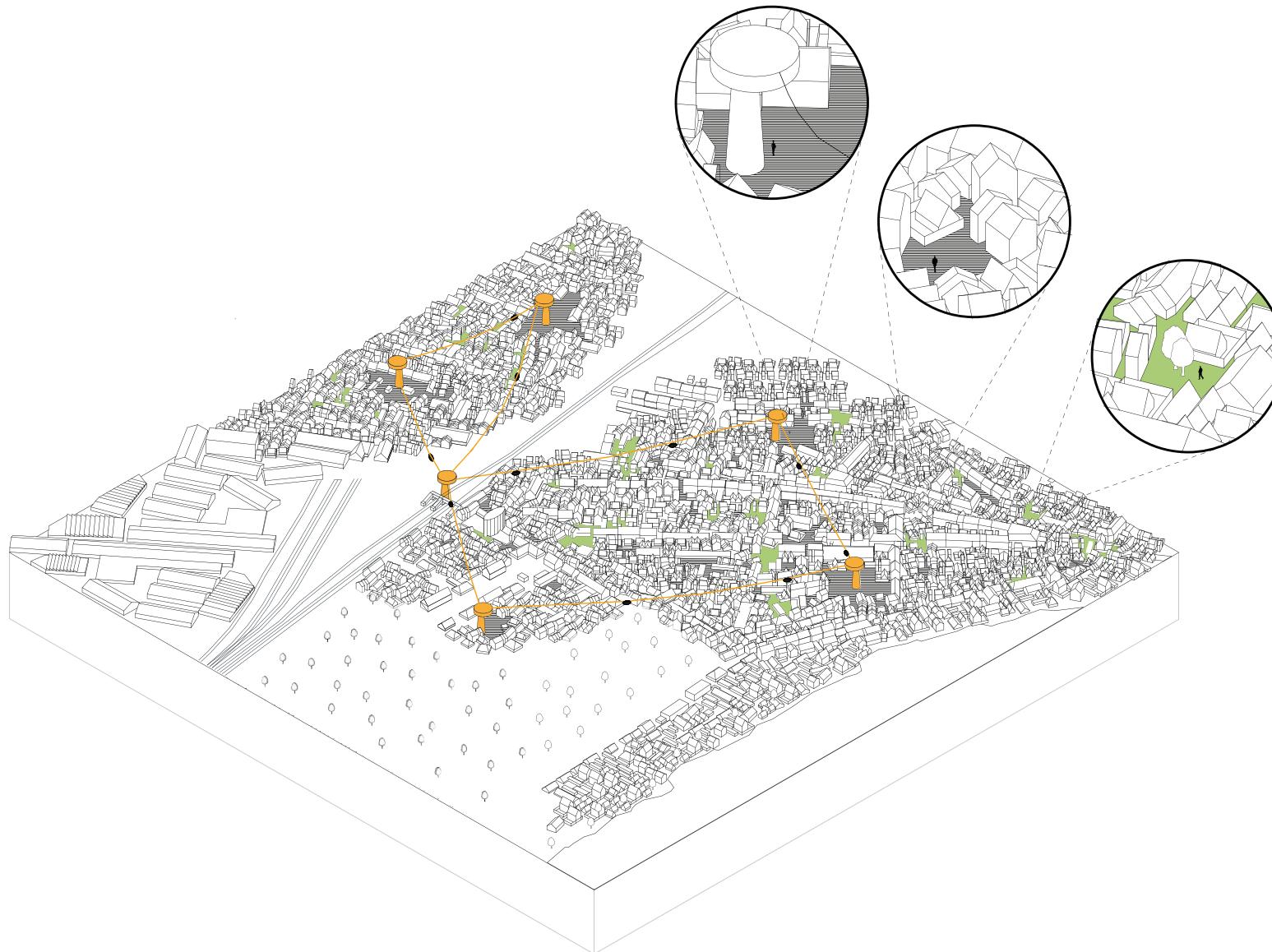
# Pravatization

*Stress test #2\_economy*

**14/11/2012**

## Resilience through RESPONSIBILITY

In conditions of extreme and rapid privatization we propose a solution based on the individual sense of responsibility for community. Each person dedicating certain amount of his wealth and comfort maintains functioning of the community. Choosing between corridor, park or trade square citizens shape public sphere for community.

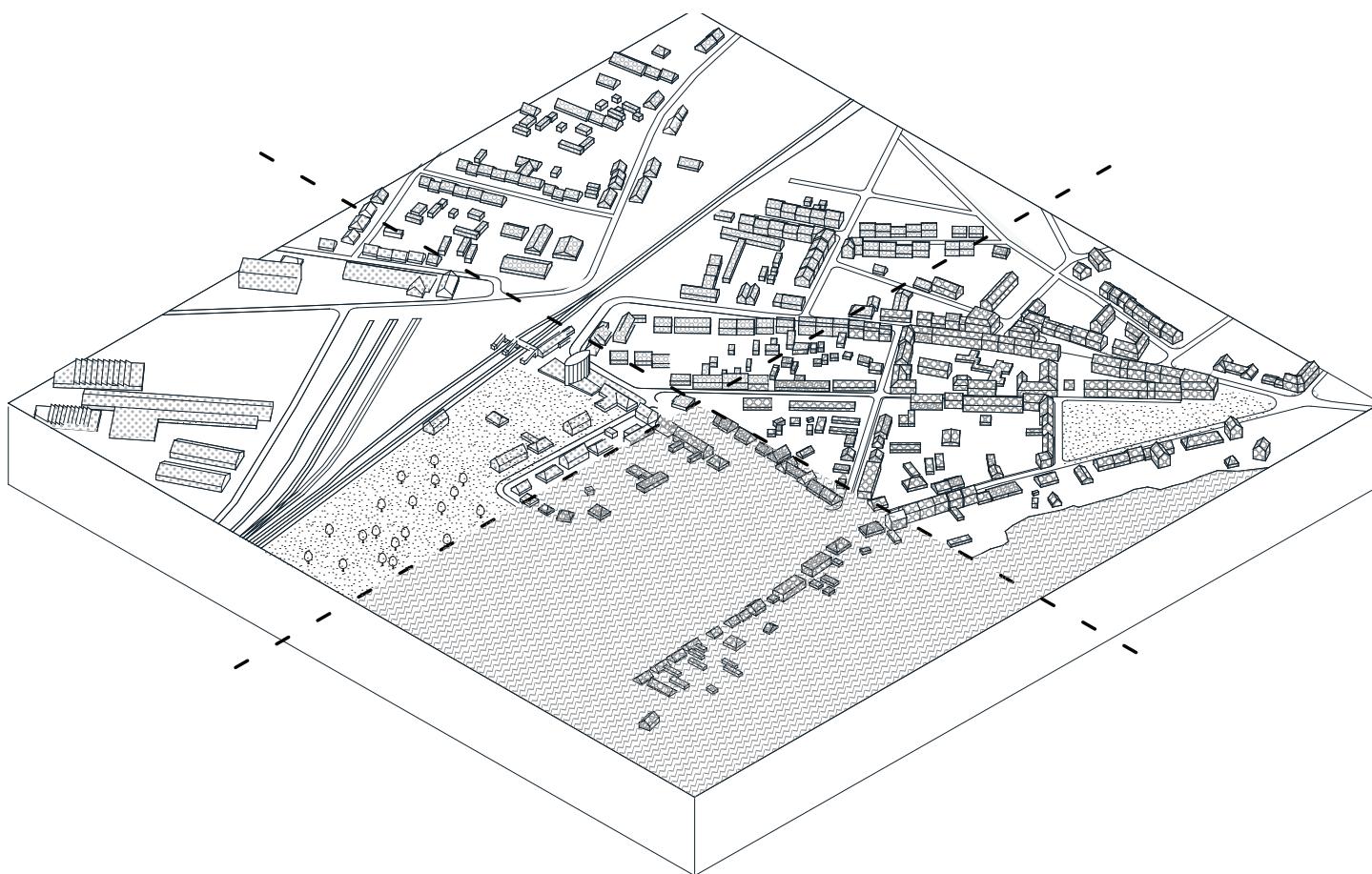




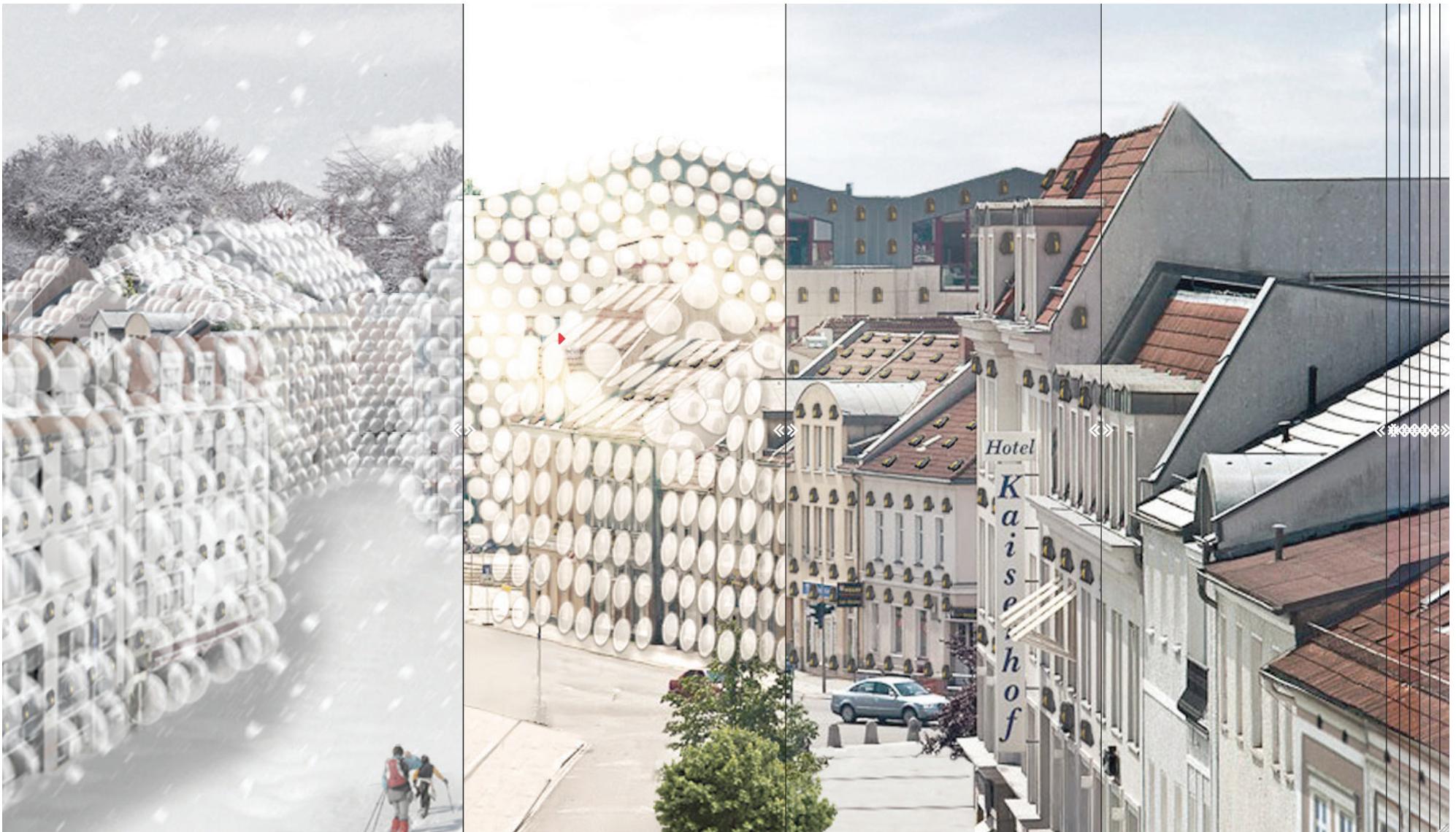
# Schizophrenic Weather

*Stress test # 3\_climate change*

**15/11/2012**



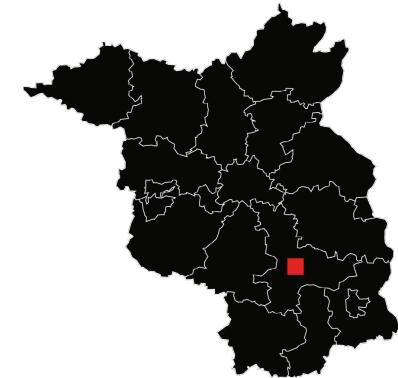
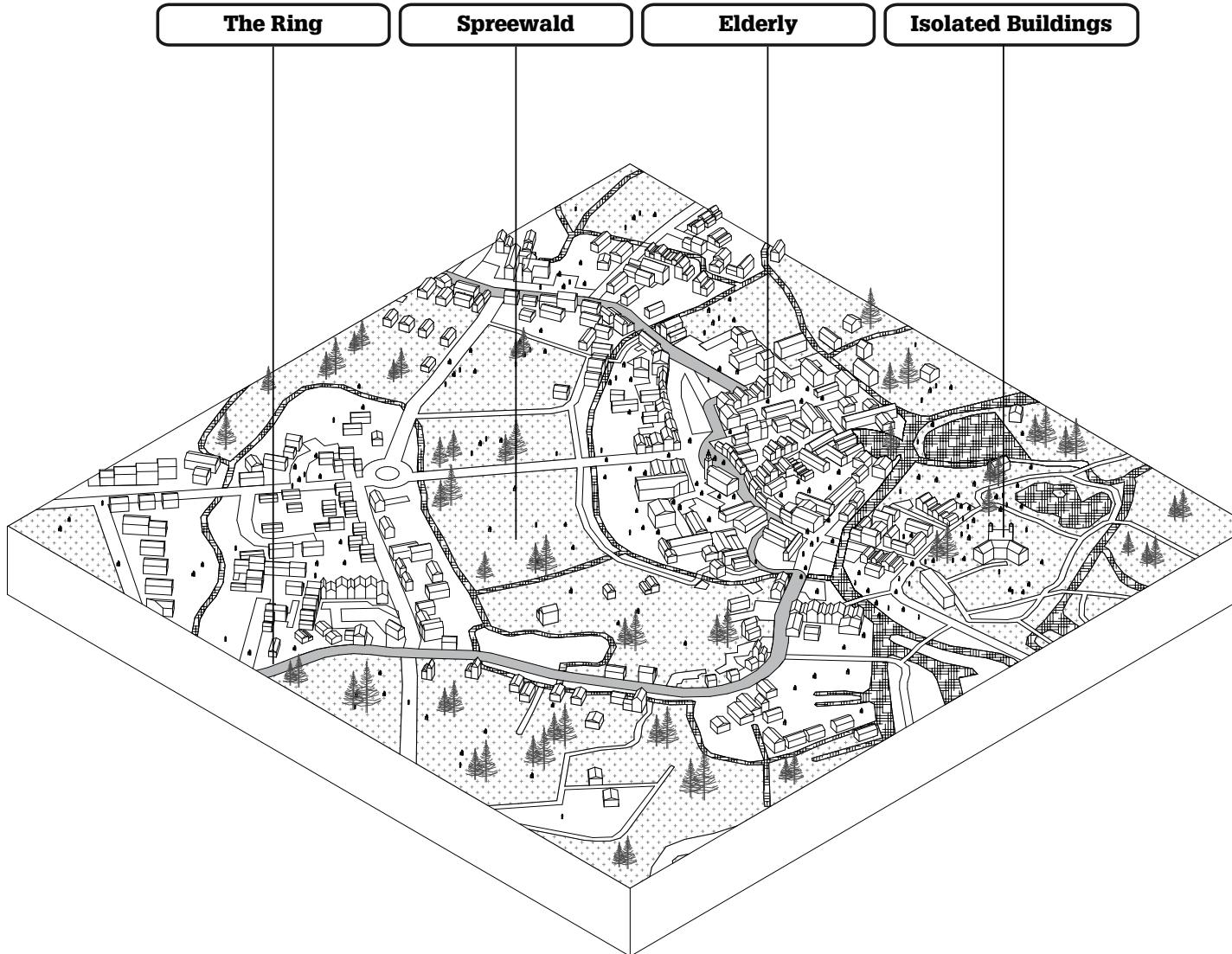
Resilience through **TRANSFORMABILITY**



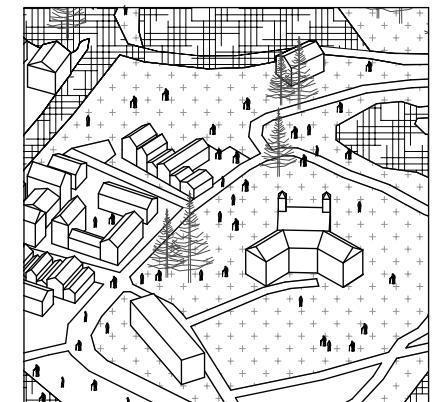
# Welcome to Lübbenau

*Hybridization*

12/11/2012



Lübbenau is a town of 17,897 in the Oberspreewald-Lausitz district of Brandenburg, Germany. It is located in the Spreewald about 82 km southeast of Berlin. Alder forests on wetlands and pine forests on sandy dry areas are characteristic for the region. The small town is mainly filled with elderly and tourists. Lübbenau offers a variety of sights. Departing from the old town center, visitors can explore the marina with its traditional boats, or a castle, the Schloss, which set in a nicely arranged park, including an orangery with a cafe and a hotel.



# Welcome to Lübbenau

12/11/2012

## Hybridization

Chen Jia, Kwong Chung Heng, Yip Hiu Sze



# Labour Shortage

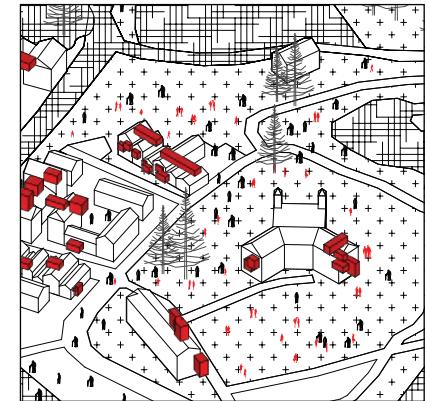
## Stress test #1\_demography

13/11/2012

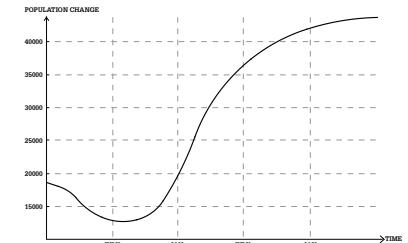


**resilience through HYBRIDIZING IDENTITIES.**  
Everyone in Lübbau is well-educated, we have to import labours from different countries, for construction works and social services.

Hybrid and Parasitic Buildings are proposed to resolve the cultural and spatial tensions among different groups of people, and to maintain their own identities. Parasitic elements are both added to the housings and public buildings, to preserve the local traditional buildings, and to enhance the integration between the locals and immigrants.



POPULATION CHANGE



APPLICATION OF PARASITIC UNITS

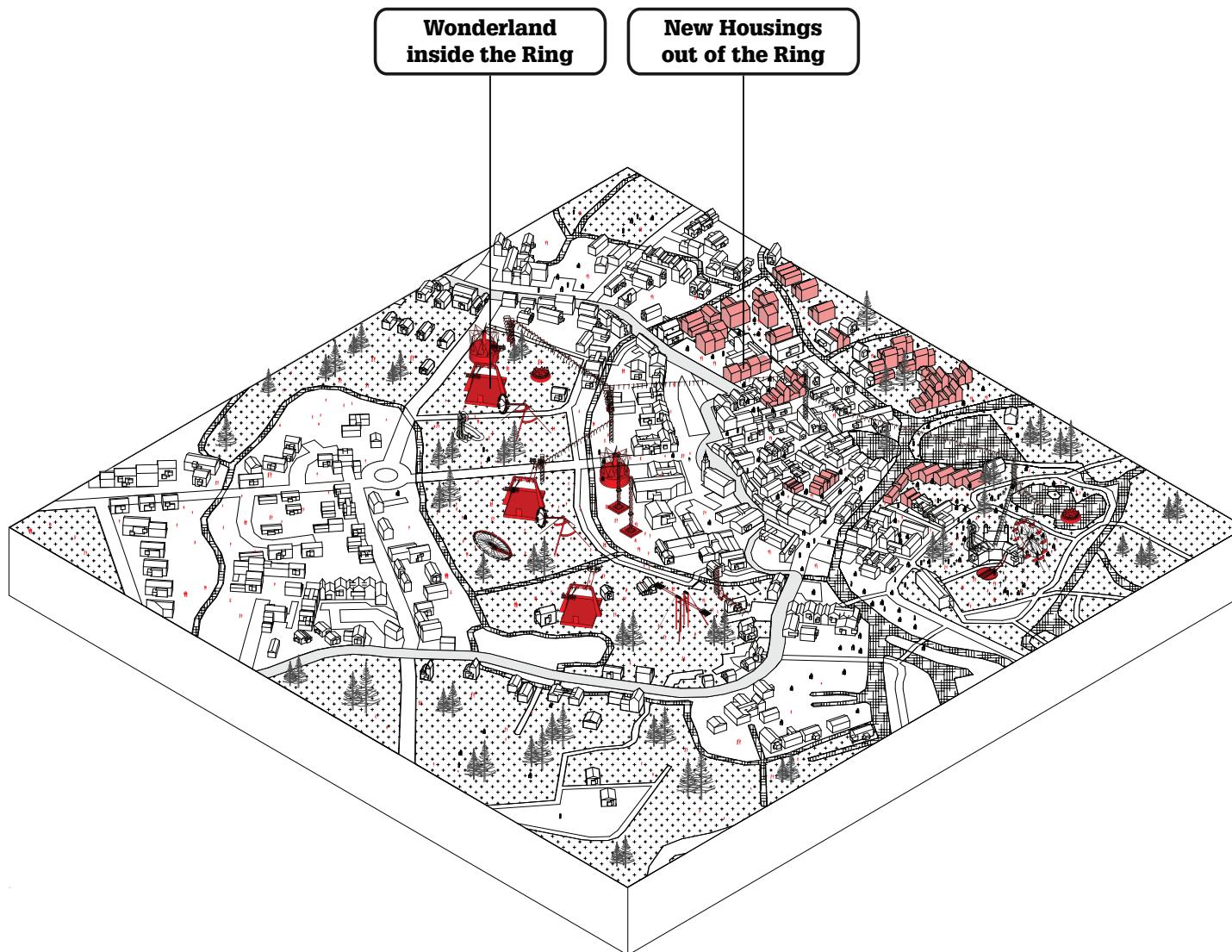




# Privatization

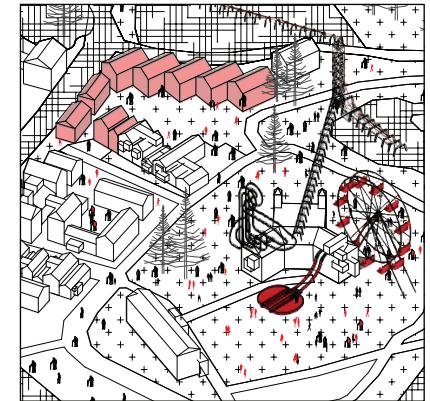
## Stress test #2\_economy

14/11/2012

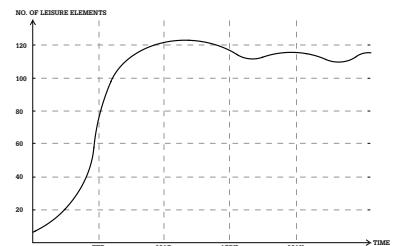


### resilience through MERGING EXTREMES.

The land market is open to be privated, hence someone buys the land and is going to transform the area inside the Ring into a Theme Park. People are forced to move out of the Ring, and to turn the old buildings into part of the Wonderland. All the leisure elements are designed in elegant and traditional languages, in order to preserve the identitity of the city and to bring more leisure to the locals.



### INCREASE OF THE LEISURE ELEMENTS



### MERGING THE CLASSIC AND THE LEISURE





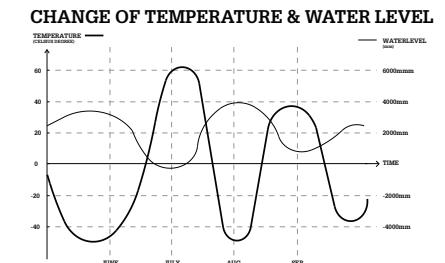
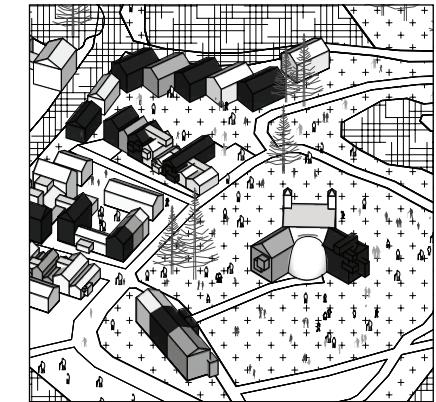
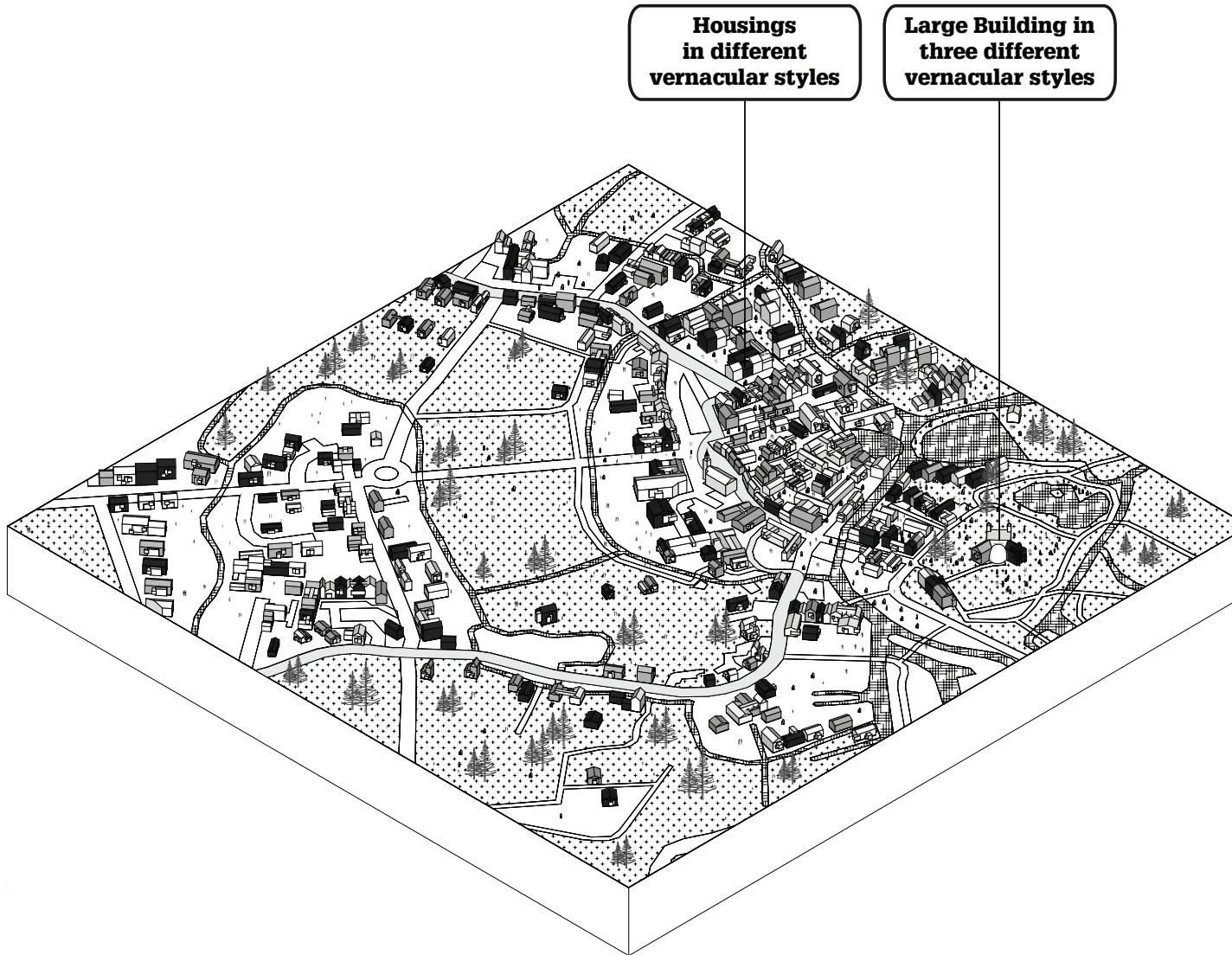
# Schizophrenic Weather

Stress test #3\_climate change

15/11/2012

resilience through INTEGRATING WITH VERNACULAR.

Under the unpredictable extreme weather, desertization, ice age and flooding, German houses are transformed into three different vernacular styles. Locals may live in the appropriate houses under a particular weather conditions.



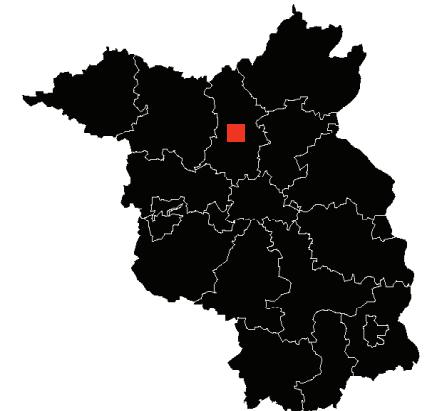


# Welcome to Gransee

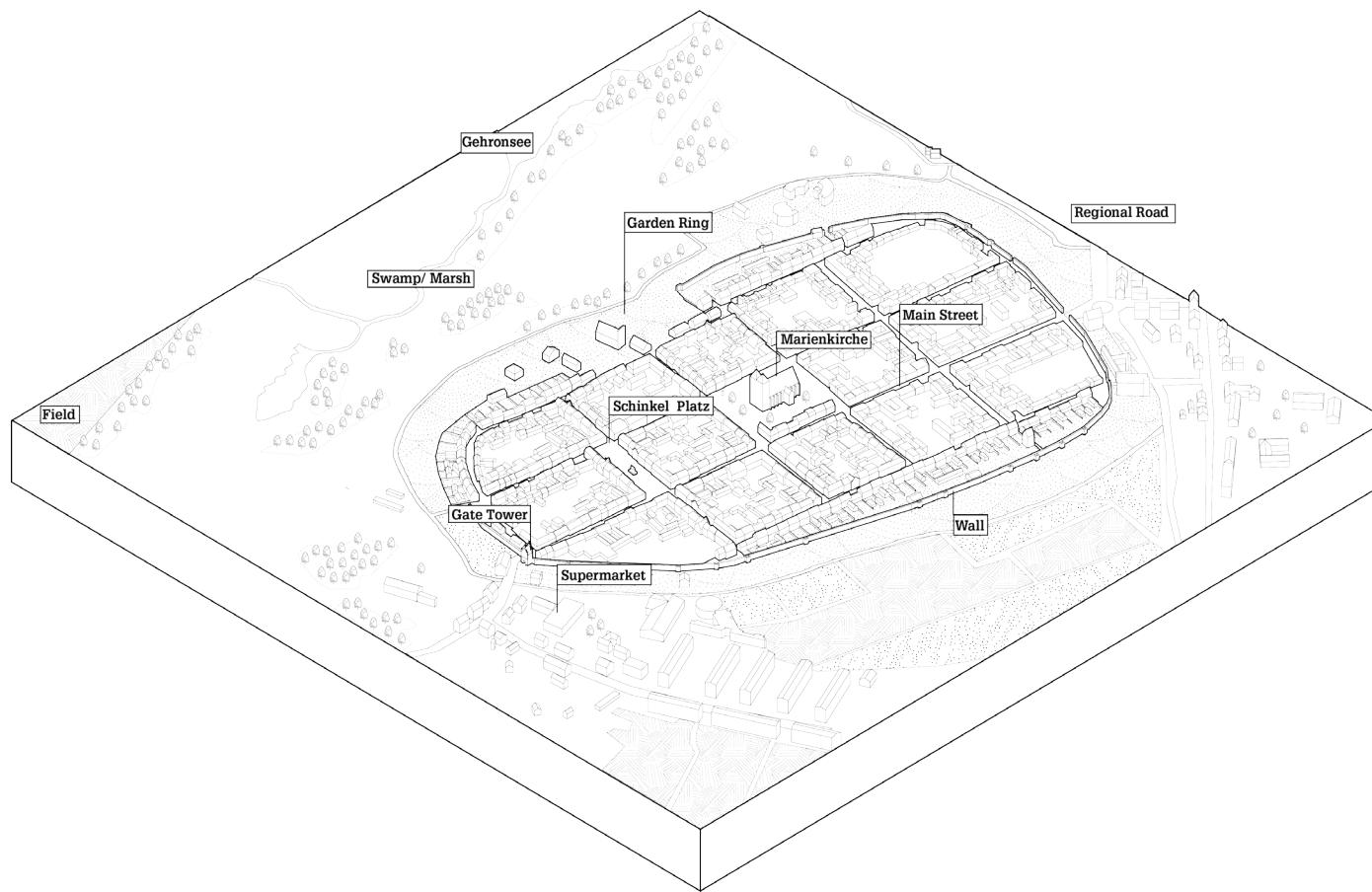
*'the most secure town in the county of Ruppin'*

Danil Chekushkin & Bram Groeneveld & Liao, Chi Yi

16/11/2012



Gransee



Gransee is a historic walled town in Brandenburg about 55km NW of Berlin. The main feature of the city is the stone wall encircling it, 2000m long and 1750m still survive. Inside the wall is a grid plan of 17 century streets and architectures.

Gransee people likes gardening, backyard agriculture and always keep their city neat and clean.

One of the landmarks of Gransee is the tomb of Queen Luise in Schinkel Platz, named after its great architect designer. Outside the city is a natural preservation area next to Gransee lake.

Theodor Fontane (1819-98) wrote that Gransee was "die festeste Stadt der Grafschaft Ruppin" - 'the most fast (as in locked-up / closed / secure) town in the county of Ruppin'

# Welcome to Gransee

'the most secure town in the county of Ruppin'

Danil Chekushkin & Bram Groeneveld & Liao, Chi Yi

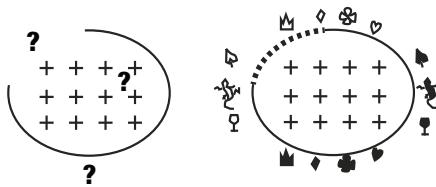


# Labour Shortage

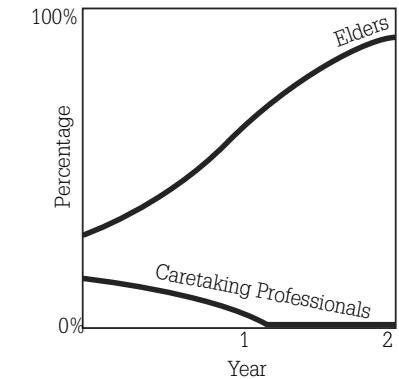
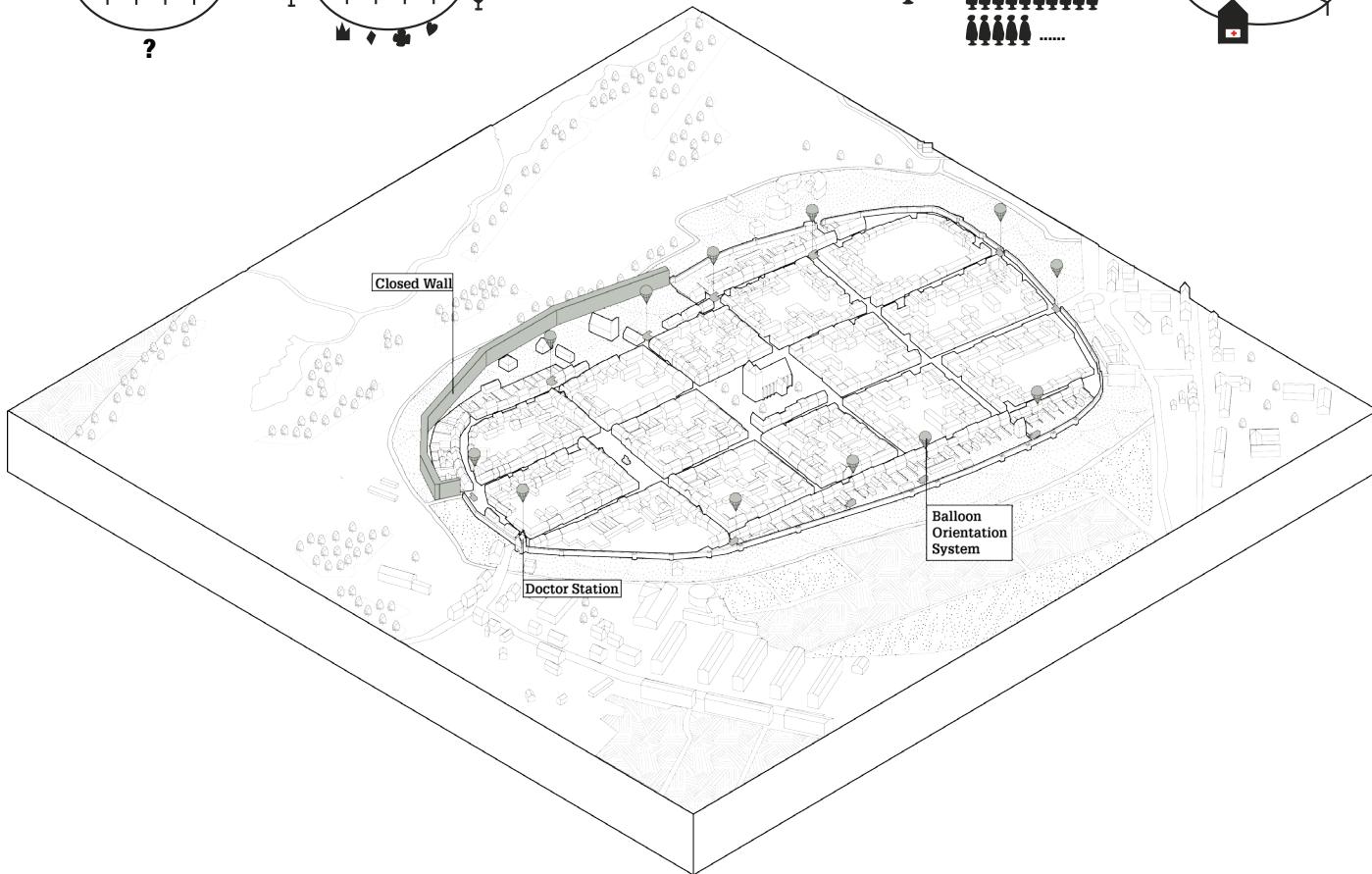
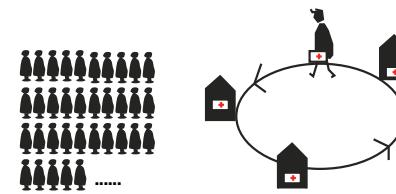
## Stress test #1\_demography

16/11/2012

1.



2.



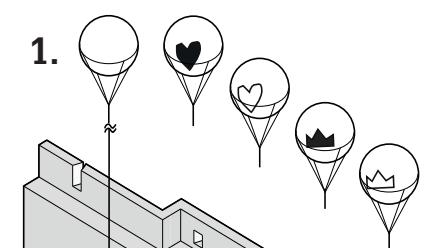
### resilience through : Autarchy

The entire city aged and their is only one caretaker. Their is only one caretaker. The present street grid system is confusing to elders to find direction and search for help by themselves.

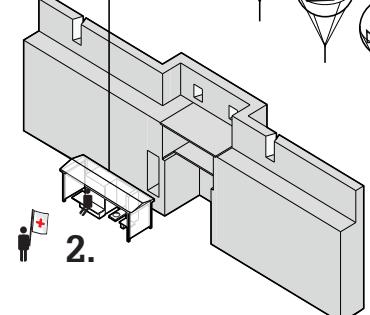
1. Symbols will be assign to each street and painted on big balloons, which can be seen from a long distance and help people to find direction.

2. People who need assistance can find stations at the ends of streets, caretaker will visit from station to station, giving medical treatment or guidance.

1.



2.

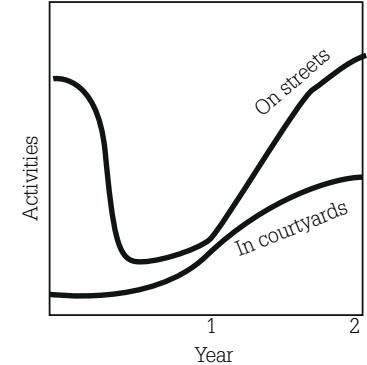
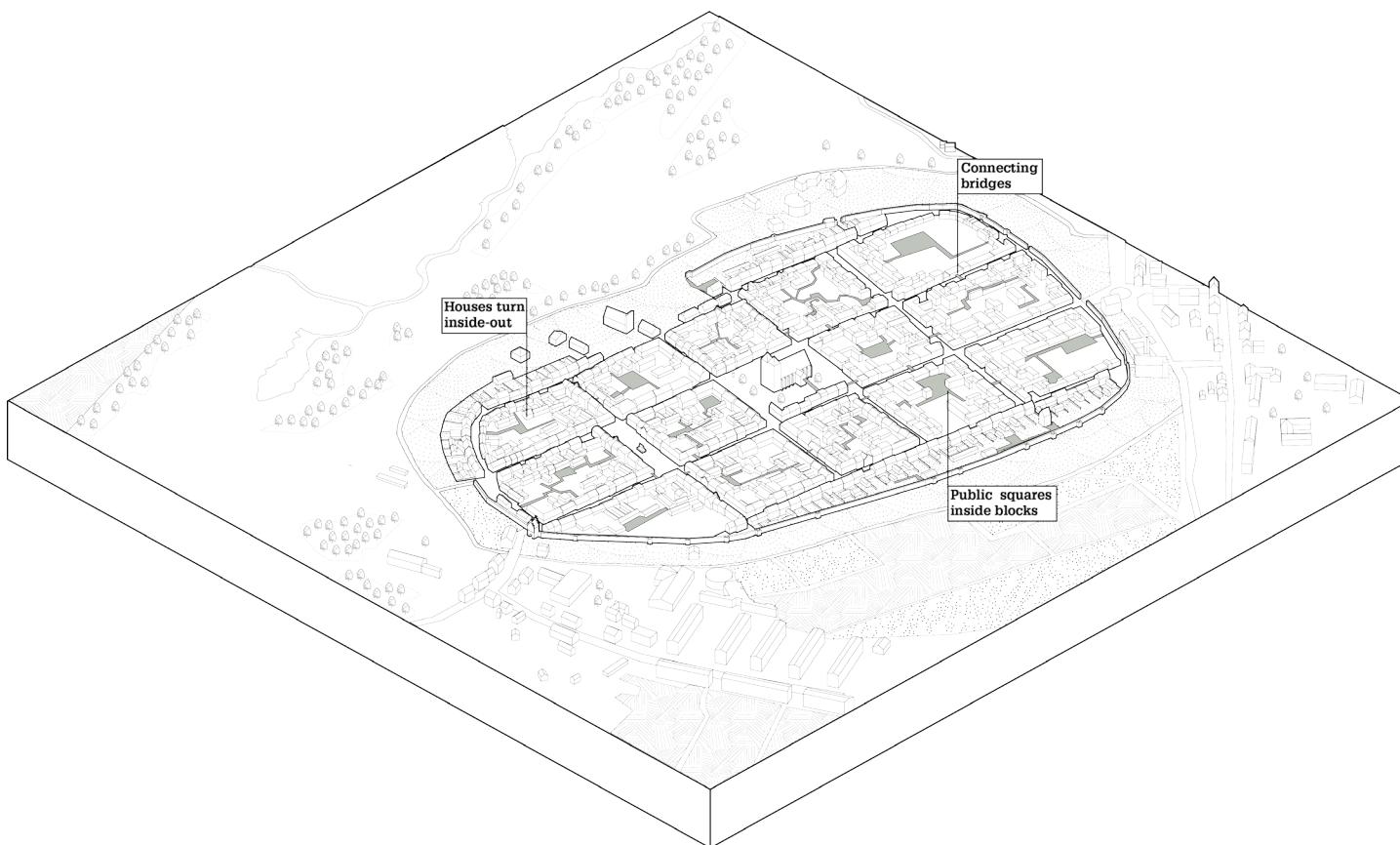




# Privatization

16/11/2012

## Stress test #2\_economy

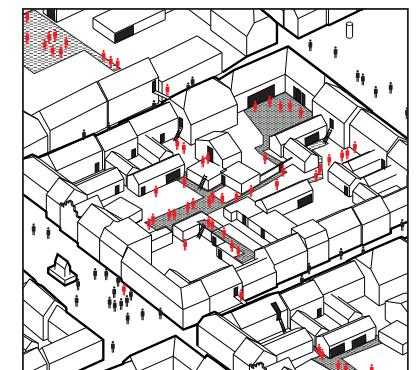


### Resilience through Permeability

Because of economic decline, citizens of Gransee "rent" their picturesque streets and facades to international corporations, who turn them into a 24-hour luxury shopping mall /hotel/ theme park.

Since the street no longer provides basic, affordable shops and services, the indigenous Gransee people have to search for a secondary public space.

1. New passages are formed and squares.
2. New facades are made towards courtyards.
3. To travel without disturbance the tourists on streets, and avoiding the inconvenience, bridges are built between blocks.

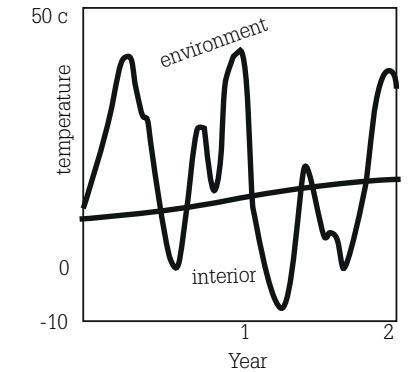
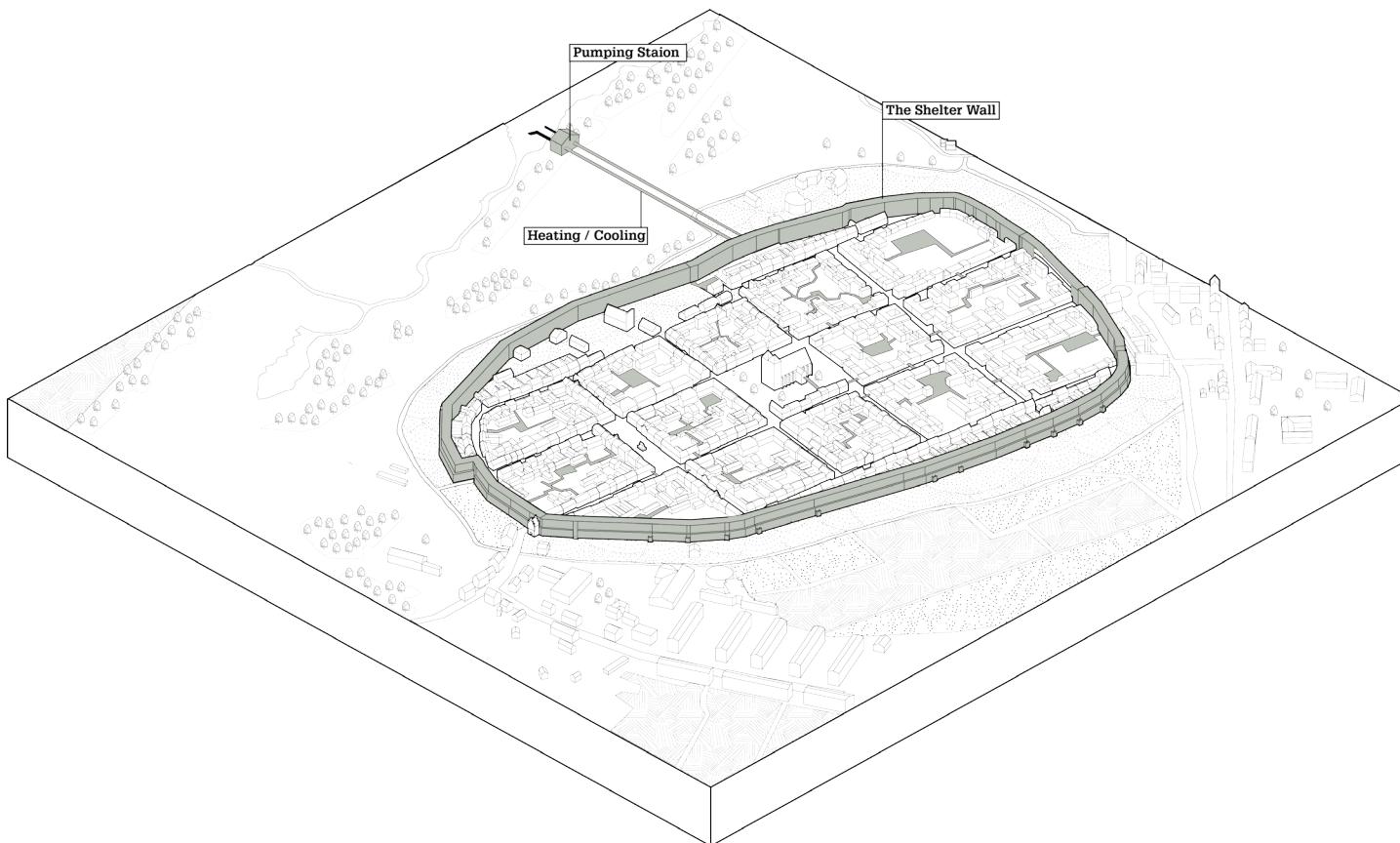




# Schizophrenic Weather

16/11/2012

Stress test #3\_climate change



## resilience through Transformability

Solid mass preserves its own temperature and doesn't change with the environment easily. By increasing the mass of the wall, the interior of the wall-mass will be the most habitable place, where Gransee people can be sheltered from dramatic temperature changes.

