City-zen Amersfoort Roadshow

Oct 16-18

Roadshow Team

Prof.Dr. Craig L. Martin (TU Delft/UCLan)
Prof.Dr. Andy vd Dobbelsteen (TUD)
Prof. Greg Keeffe (QUB)
Dr. Riccardo Pulselli (UoS)
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This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration under grant agreement No 608702

WHAT IS IT?

- **Live. Onsite.**
- **City-specific.**
- **Sustainable Neighbourhood / City Visions.**
- **Heart of Community.**
- **Team specialisms**

CITY-zen
New urban energy
ROADSHOW

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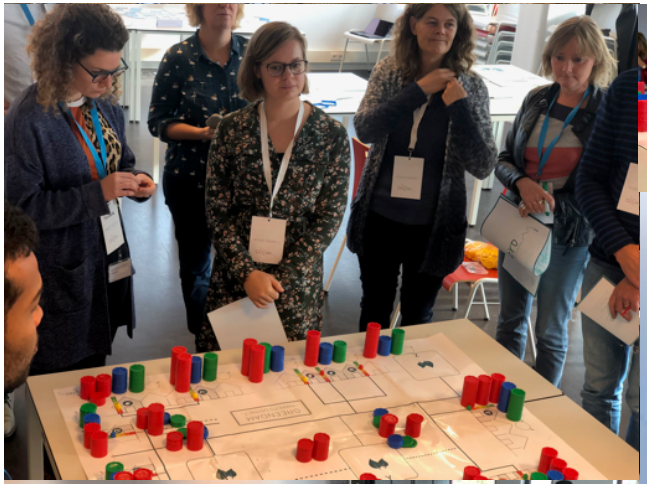

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HOGESCHOOL AMERSFOORT

CITY-zen New urban energy ROADSHOW

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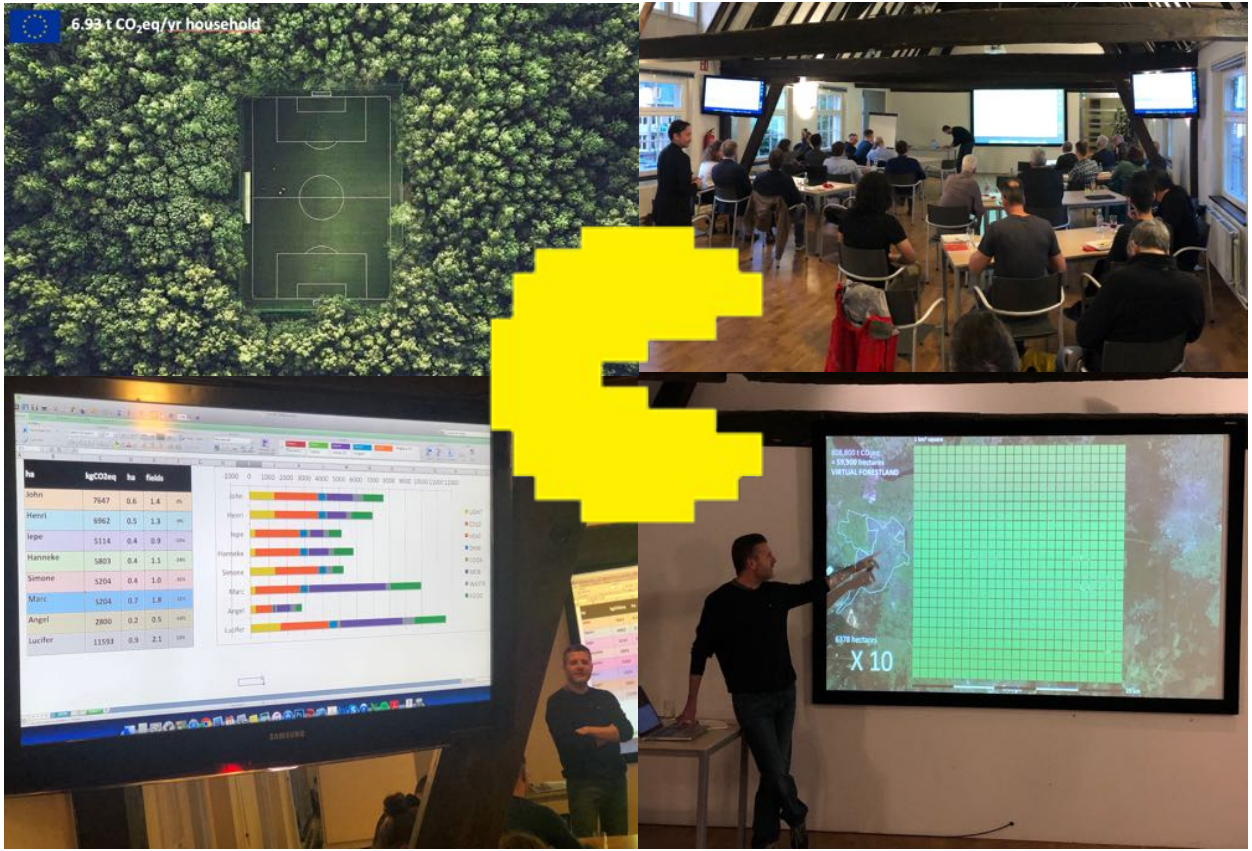

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CITY-zen
New urban energy
ROADSHOW

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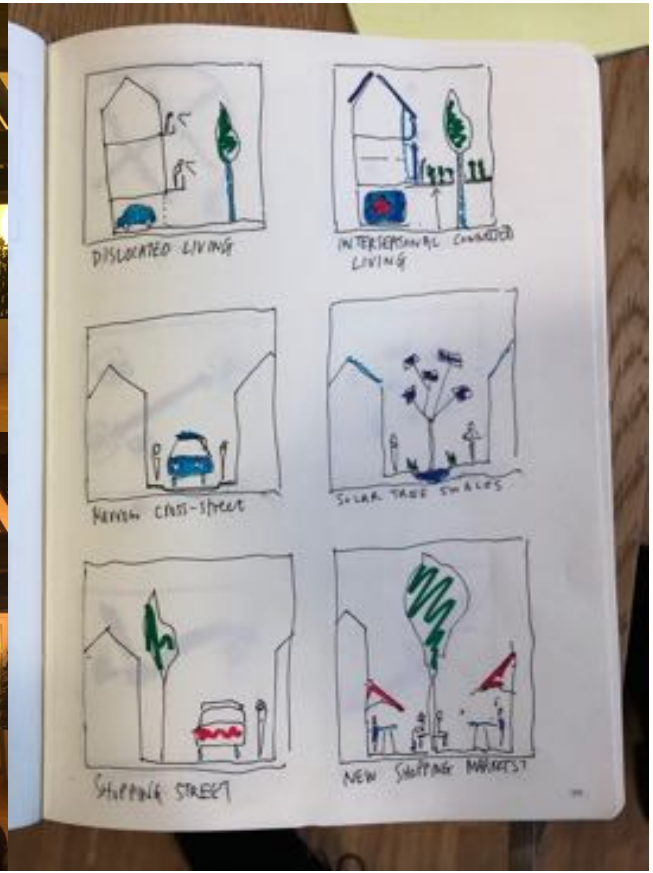

- Too radical!? Fantasy?
- Aim: Carbon Zero city!
- Not preaching to the converted.
- Cards on the table.
- Not a closed shop!

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New urban energy
ROADSHOW

WHAT IS IT?

- **Health & Well being.**
- **Even more enjoyable.**
- **Zero carbon city & Future…**
- **For Amersfoort families.**


I DON'T BELIEVE IN
GLOBAL WARMING

What's the emission of one single household in Amersfoort?

AMERSFOORT

Household:

Citizens: 155,225

7.54 t CO_2-eq

Electricity: 2615 kWh /yr	1360	kg CO_2-eq	18.7 %
Fuel: 10792 kWh /yr 95% gas grid 5% heat grid	2584	kg CO_2-eq	34.0 %
Mobility: 19800 km /yr	3339	kg CO_2-eq	44.0 %
Waste: 1172 kg /house yr 23% waste-to-energy 14% organic 63% recycled	190	kg CO_2-eq	2.5 %
Water: 107 m^3 /house yr	63	kg CO_2-eq	0.8 %

EU household

2.3 citizens

6.93 t CO_2 eq/yr

Pulselli et al."Carbon accounting framework for decarbonisation of European city neighbourhoods". Journal of Cleaner Production 208 (2018) 850-868.

Carbon Footprint per household

EU household

2.3 citizens

6.93 t CO_2 eq/yr

0.51 ha

Virtual forestland

1 field

Pulselli et al."Carbon accounting framework for decarbonisation of European city neighbourhoods". Journal of Cleaner Production 208 (2018) 850-868.

155,225 people
67675 households
63.78 km2 area

		AMERSFOORT	HOOGLAND	CITY CENTRE
ELECTRICITY	**MWh**	**529,209**	**38336.4**	**56671.2**
Housing	MWh	176,959	12778.8	6667.2
Other	MWh	352,250	25557.6	50004
HEAT	**MWh**	**1,127,590**	**70,283**	**66,394**
GAS (housing)	MWh	694,778	51948.6	30835.8
Heat grid (housing)	MWh	35,558	0	0
GAS (other)	MWh	397,254	18334.8	35558.4
GAS (industry)	_	62,227	0	0
TRANSPORT	n. cars	103,121	6,273	4,853
	km	1,340,573,000	81,553,588	63,091,614
WASTE TREATMENT	kg	79,319,975	4,825,421	3,733,049
	recycled	50,521,081	3,073,444	2,377,682
	organic	10,555,300	642,130	496,766
	incinerated	18,243,594	1,109,847	858,601
WATER TREATMENT	m3	7,252,112	441,181	341,307
t CO_2eq		**808,800**	**52,400**	**57,600**
			6.4%	7.1%

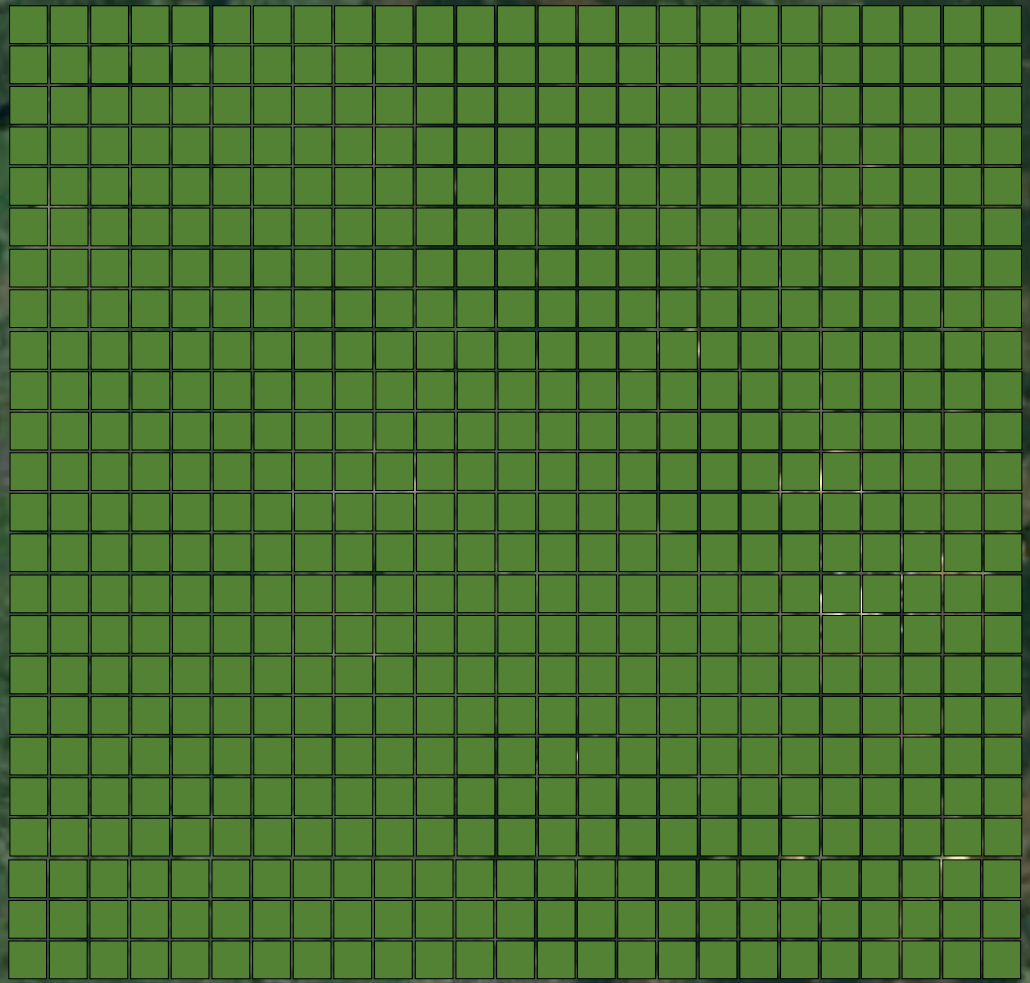
Google

808,800 t CO_2eq
= 59,900 hectares
VIRTUAL FORESTLAND

6378 hectares

X 10

1 km² square



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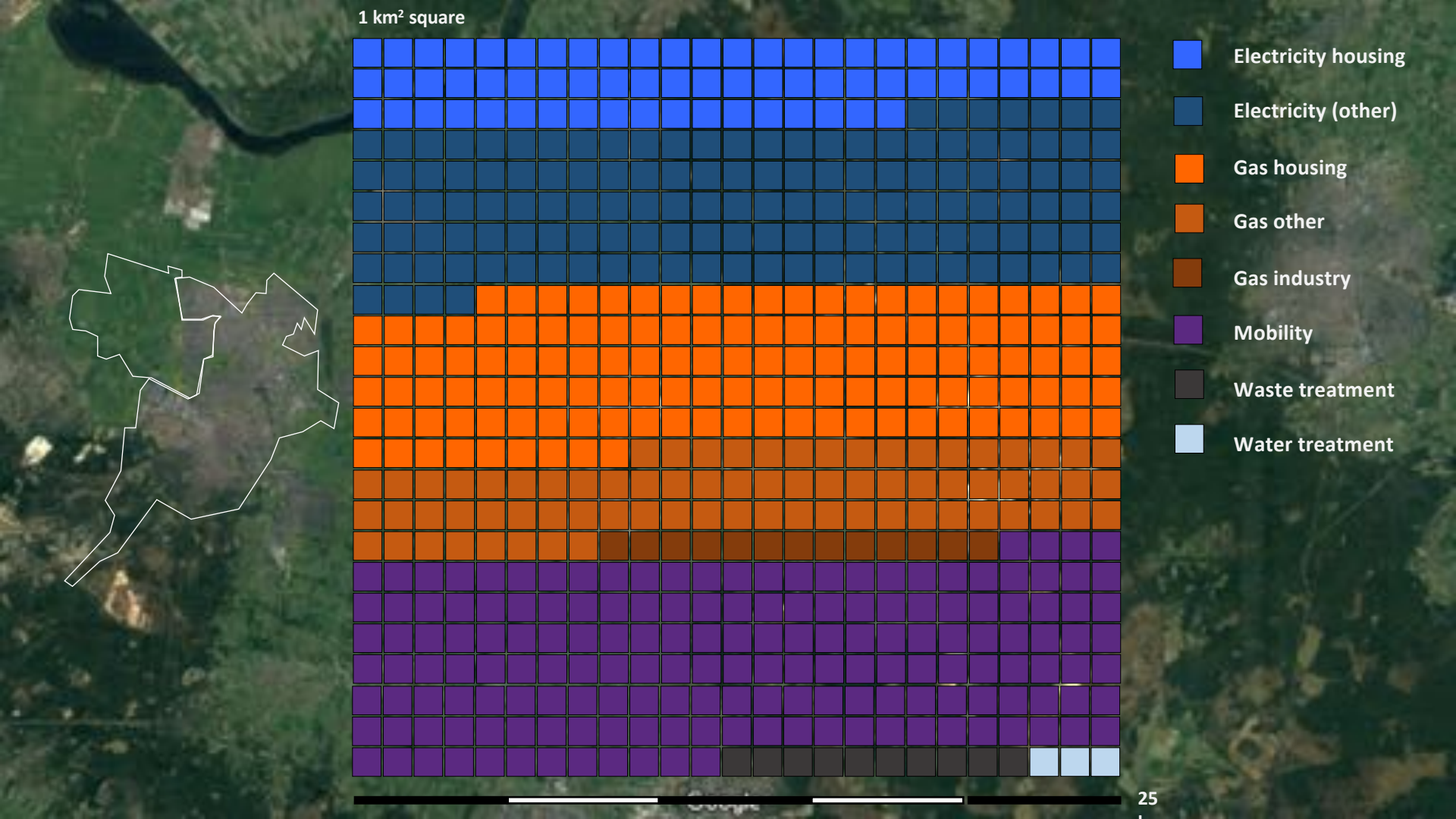
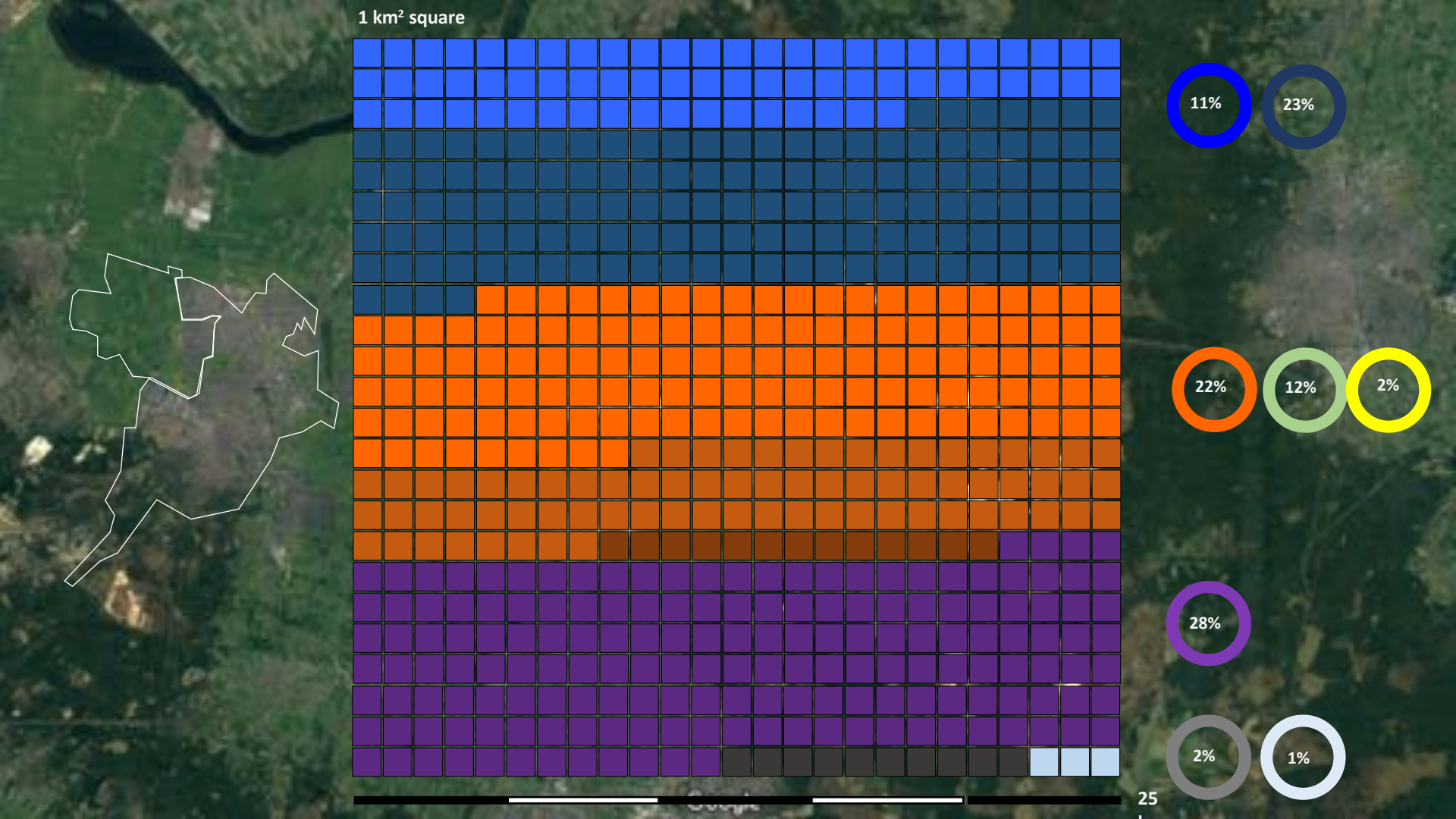
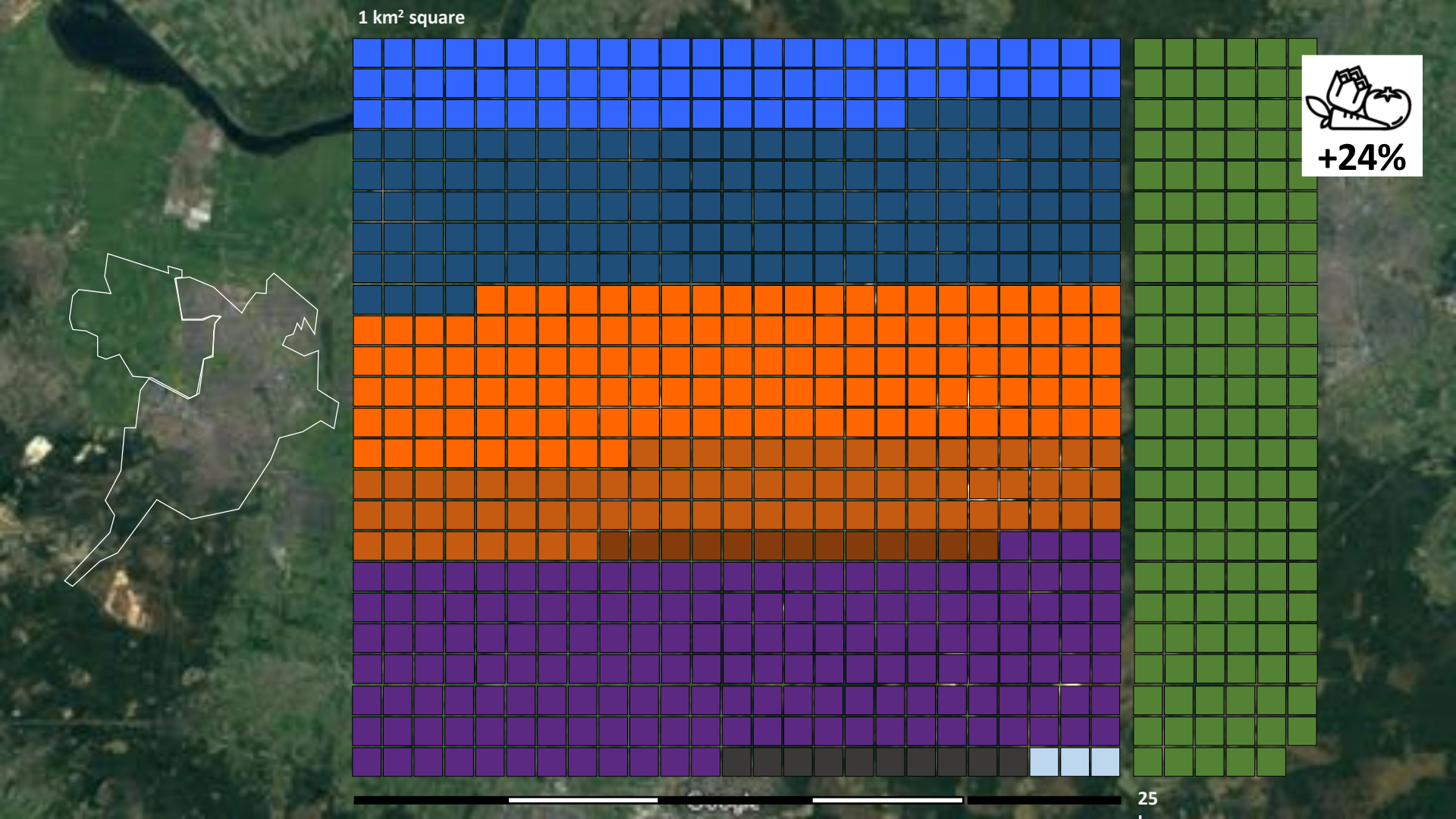
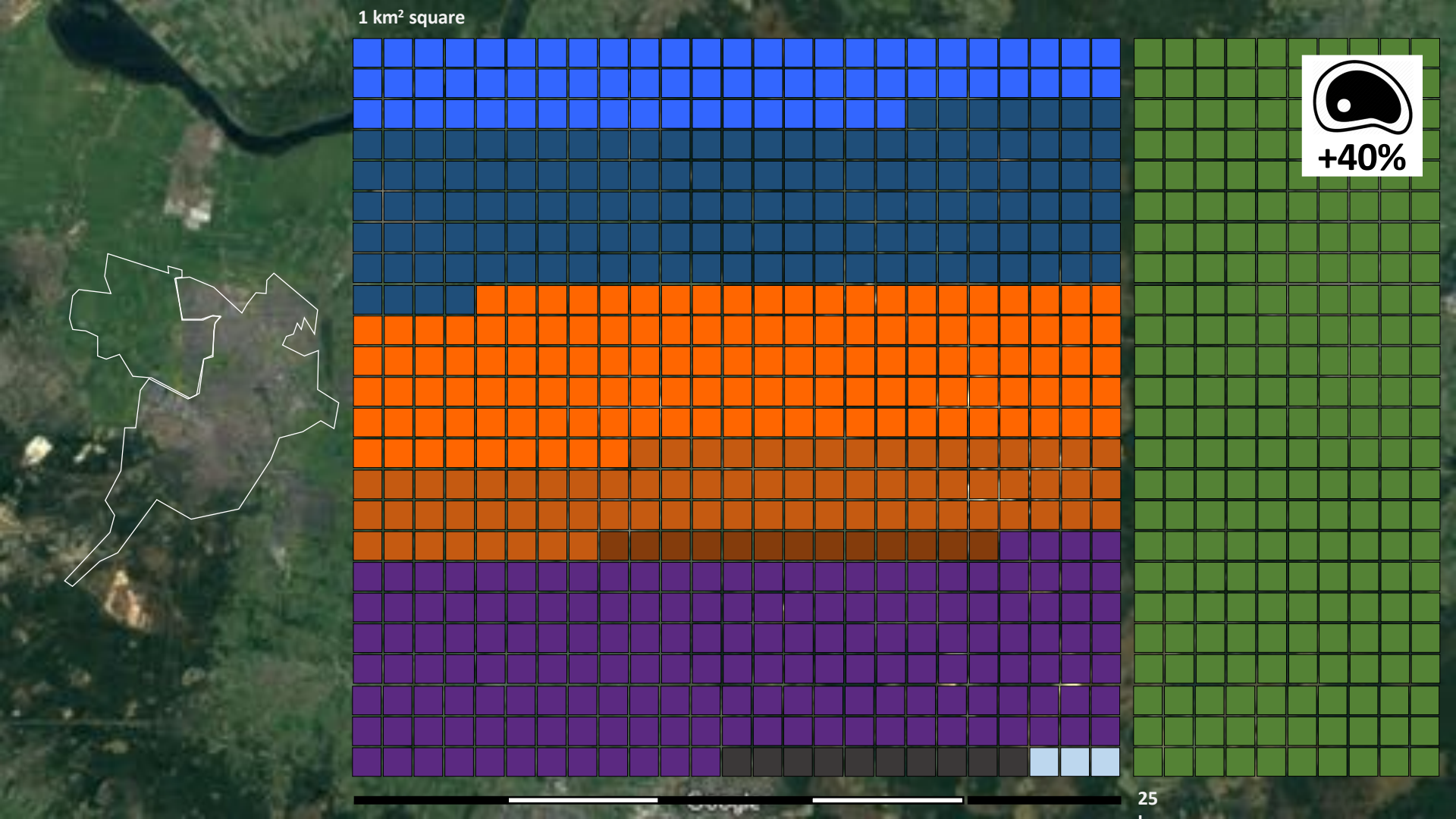
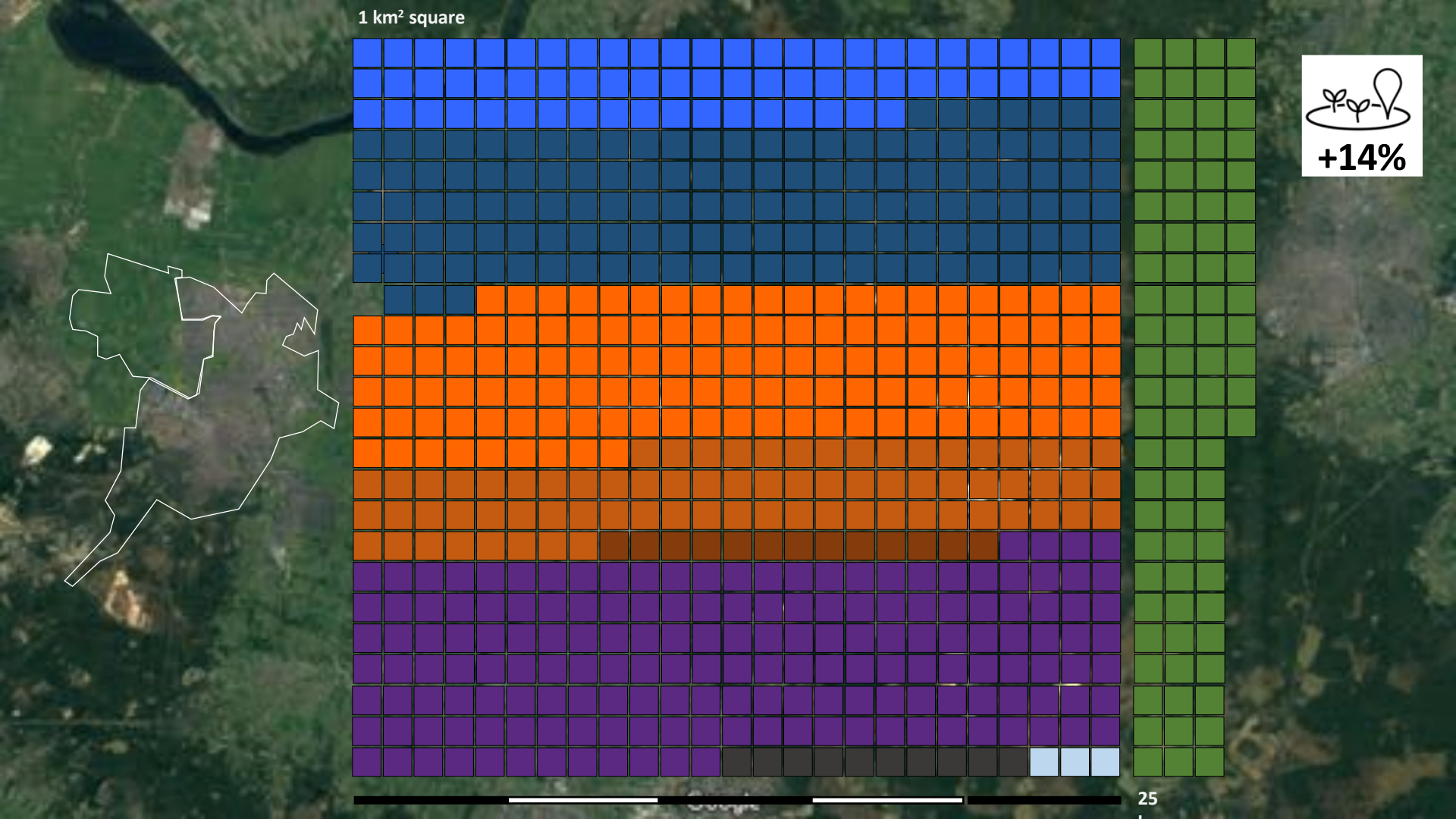
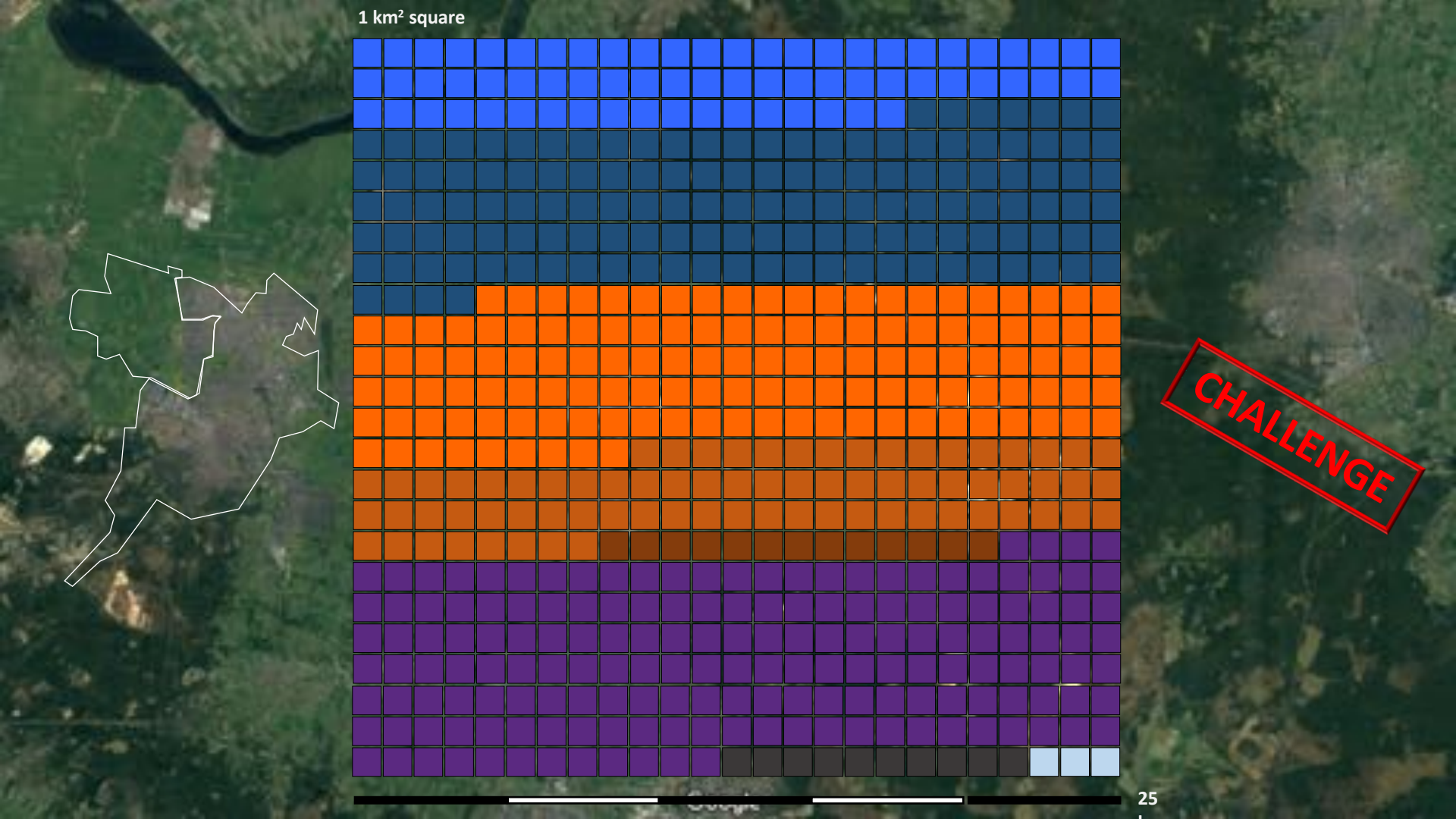

1 km² square
Electricity housing
Electricity (other)
Gas housing
Gas other
Gas industry
Mobility
Waste treatment
Water treatment
25


1 km² square
11%
23%
22%
12%
2%
28%
2%
1%
25


1 km² square
+24%
25


1 km² square
+40%
25


1 km² square
+14%
25


1 km² square
CHALLENGE
25

Low-Carbon Hoogland

Amersfoort Roadshow – 18th of October 2019

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New urban energy

Co-funded by the European Union's Seventh Programme for research, technological development and demonstration

Amersfoort Roadshow

The Highlanders

Content

Understanding Hoogland

Sustainability Opportunities

Energy Strategies

Understanding Hoogland

CITY-zen
New urban energy

Understanding Hoogland

https://www.utrechtaltijd.nl/verhalen/t/tot-hier-de-annexatie-van-de-gemeente-hoogland/

Hoogland is a part of Amersfoort. On paper.

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Welcome to Hoogland!

of October 2019

Strengths

Strengths

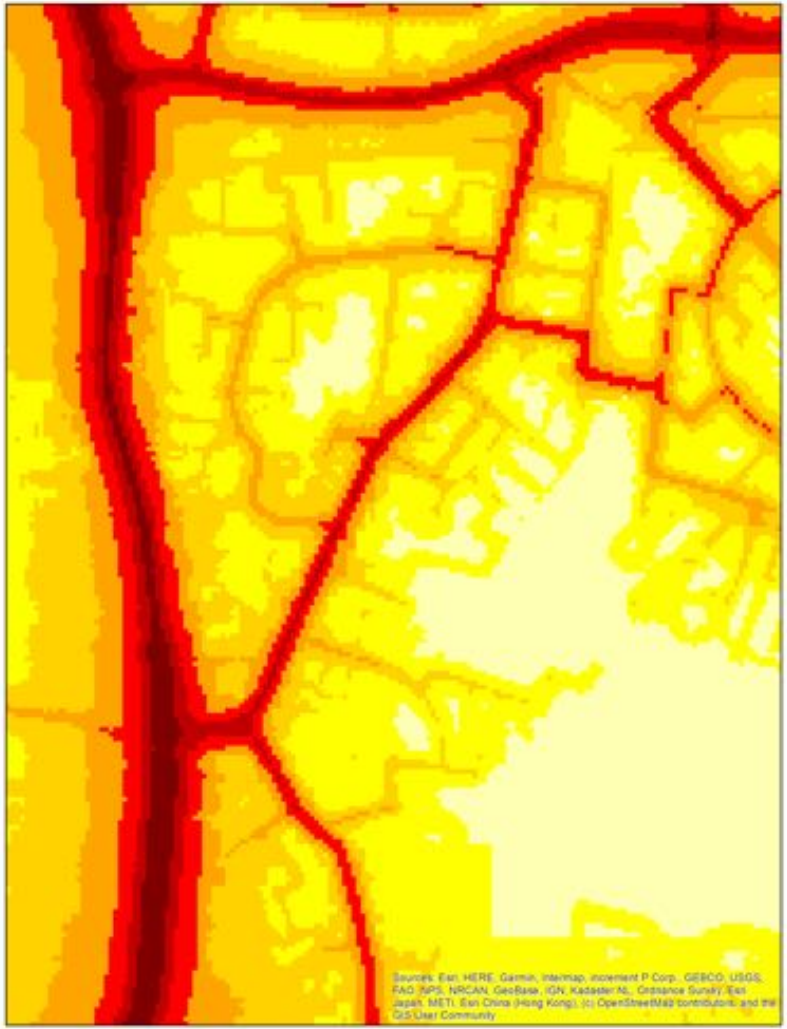
Strengths

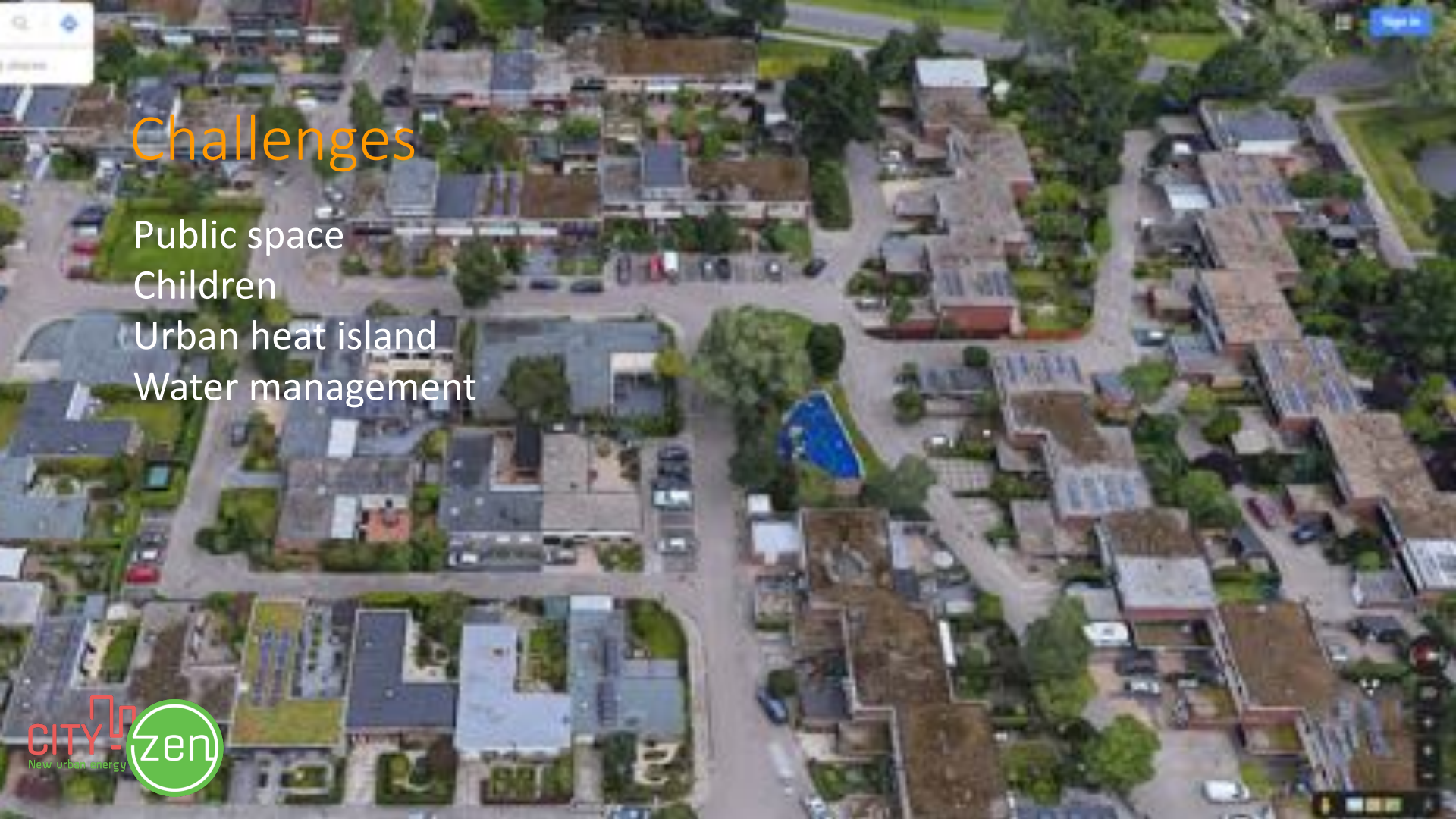
Strengths

Soft transport modes
Green belt, however with barriers

Challenges

Noise




Challenges
Public space
Children
Urban heat island
Water management
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Challenges

Challenges

Green as decoration versus green as an urban building material

Challenges

Green as decoration versus green as an urban building material

Sustainability Opportunities

In and around Hoogland – starting from what is already present

Sustainability Opportunities

Sustainability Opportunities

Sustainability Opportunities

Undoing the empire of the car

Group the cars in dense, peripheral parking lots or parking buildings so that **space is liberated for:**

- Effective public green spaces and meeting places
- Climate adaptation, water buffering and biodiversity
- Safe kids playing
- Urban agriculture

Sustainability Opportunities

From simple grouped parking to HUMEs (hubs for urban mobility and energy)

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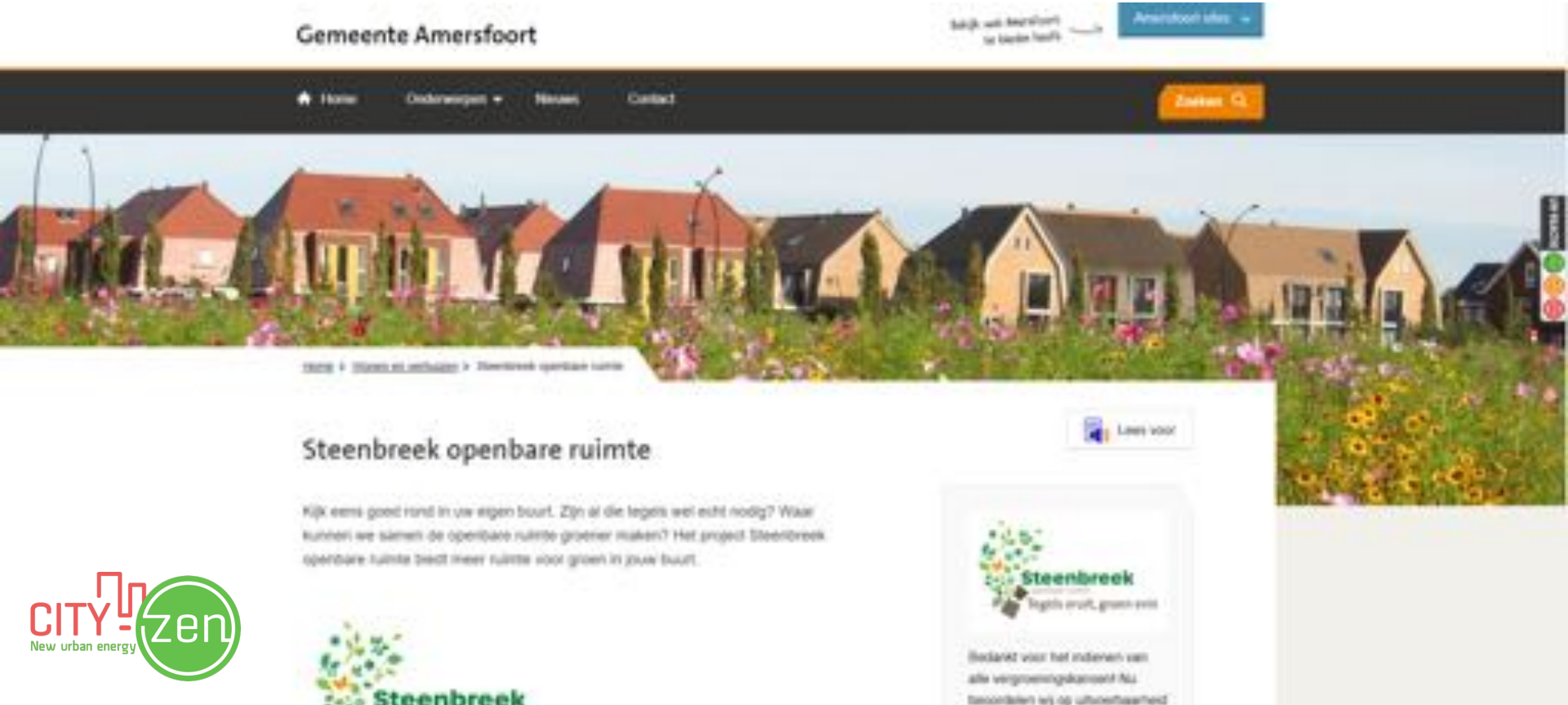
Sustainability Opportunities



Sustainability Opportunities

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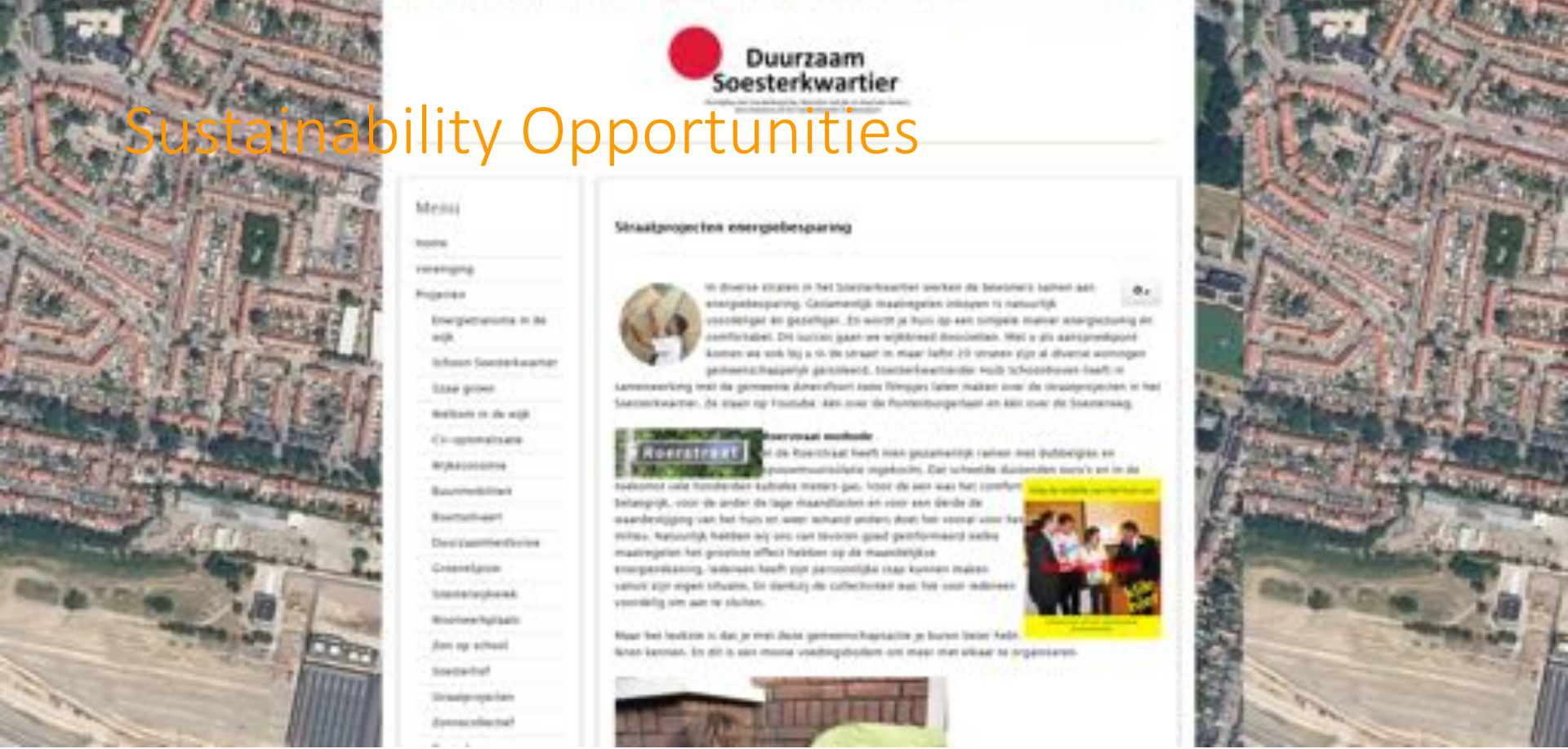

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Spatial planning 2300 [Universiteit Utrecht]

Surrounded by barriers

Main choices for the heat transition

2: **HT/MT district heating**
→ Sustainable heat supply for old districts that are hard to renovate

1|2: **Heat pump system with HT/MT district heating for hot water**
→ For districts that are well insulated but with little potential for PV thermal

1: **All-electric, with heat pump system**
→ For buildings that can be renovated (insulation, windows, services) to a LT system

1|3: **Hybrid heat pumps, with green gas as backup**
→ For buildings that can be renovated, but LT heating in winter is not enough

3: **Green gas** (bio, H_2, CH_4) **in the current gas grid**
→ For old districts that are hard to renovate and when district heating is impossible

Strategy at the village scale

Hooglands EnergieBedrijf

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Hoogland is huge!

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HEB
Hooglands Energie Bedrijf

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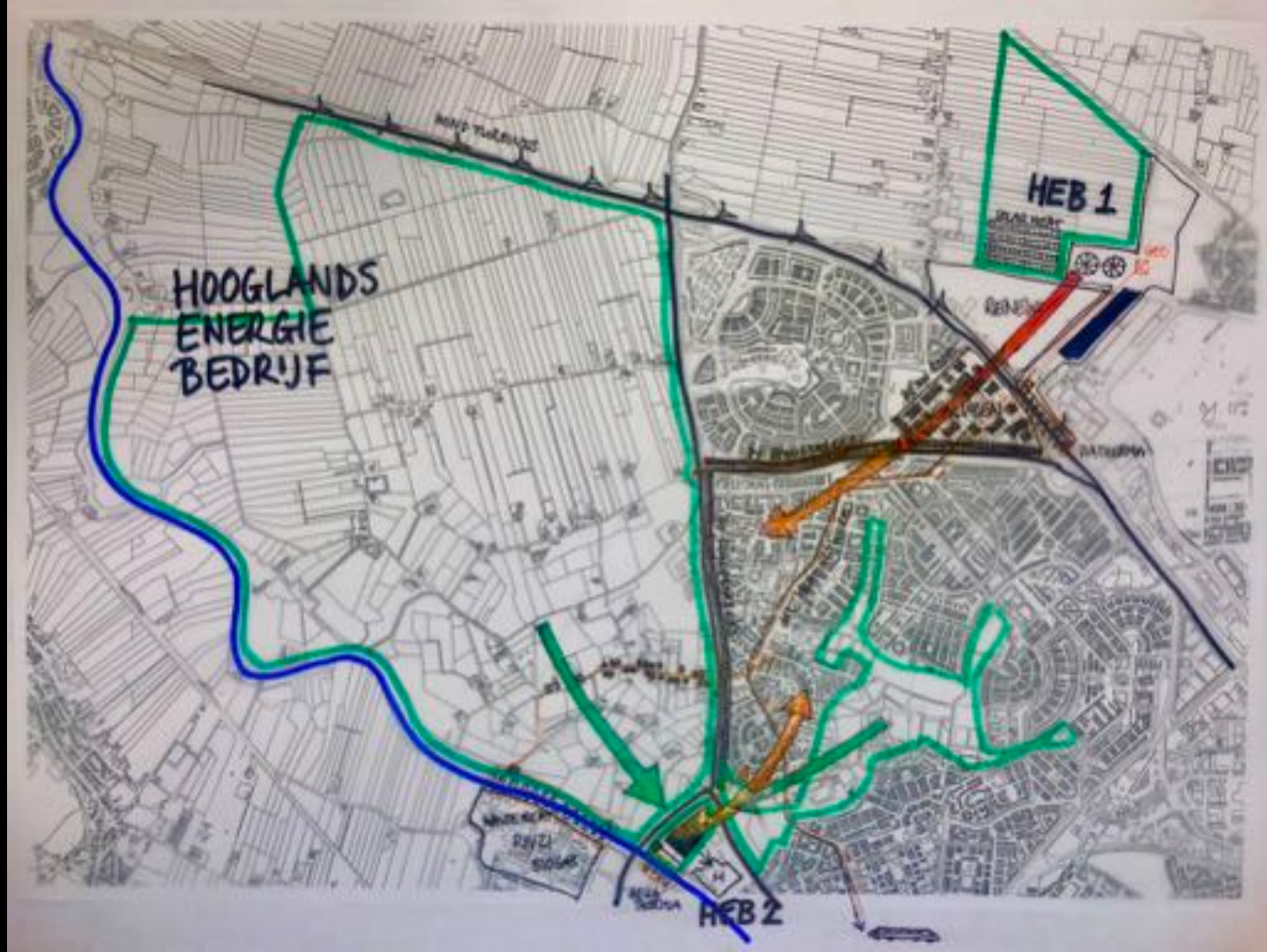
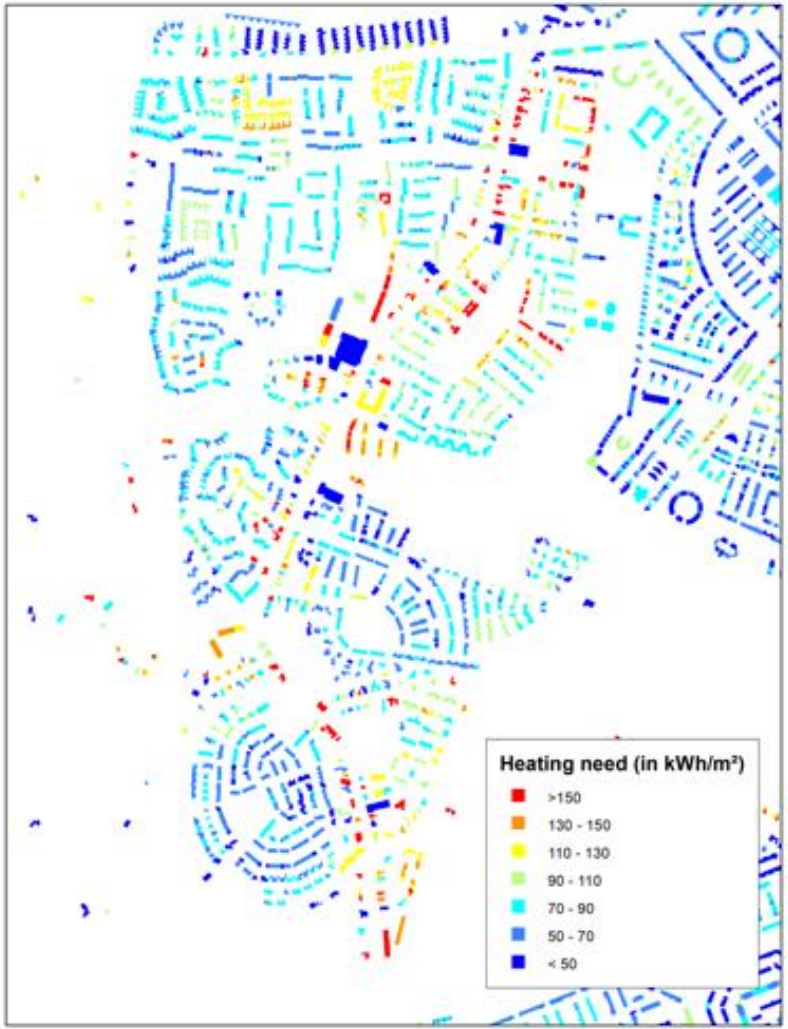
HEB
Hooglands Energie Bedrijf



Heat demands



The most difficult street in the village

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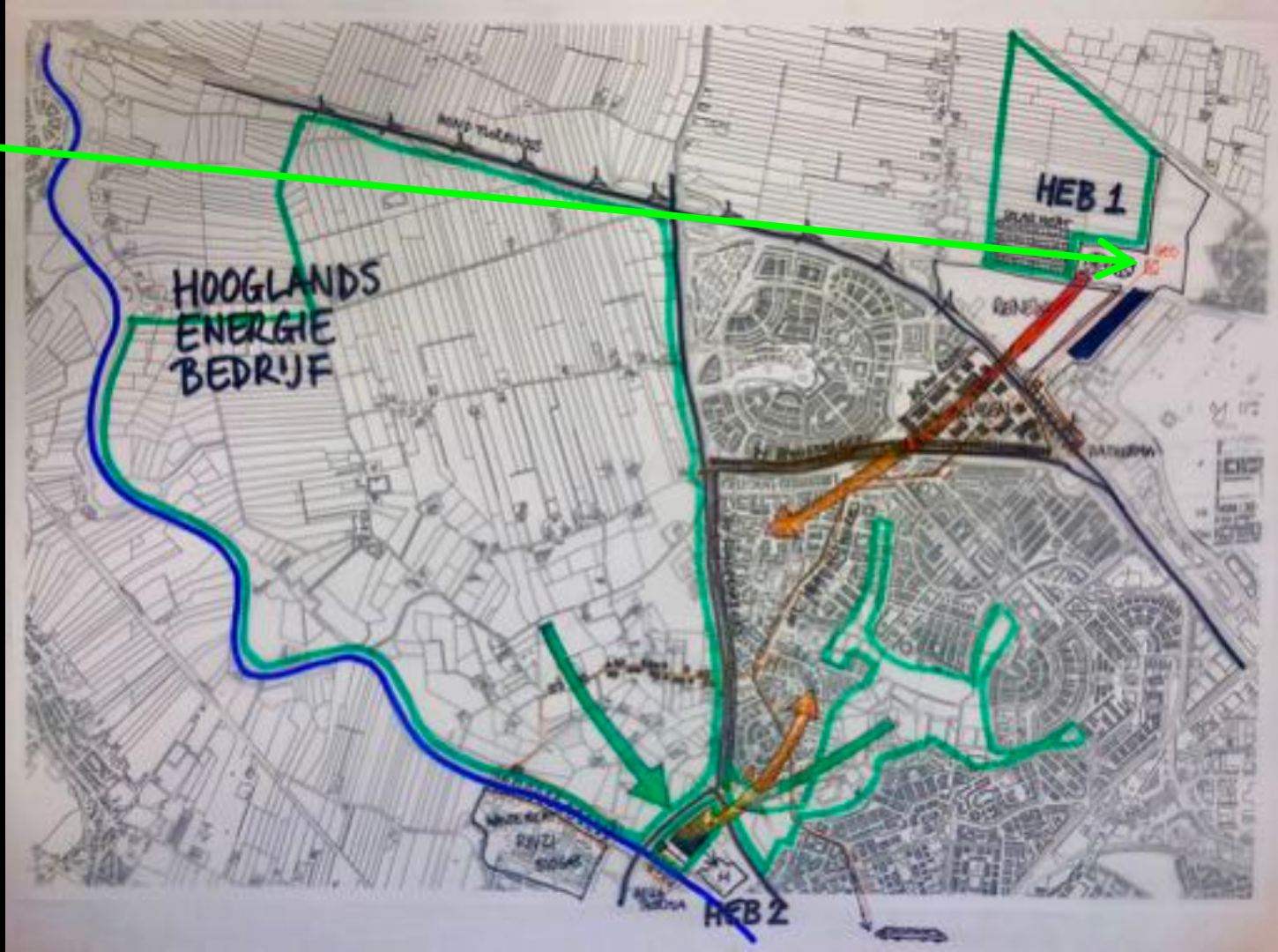
HEB

Geothermal heat



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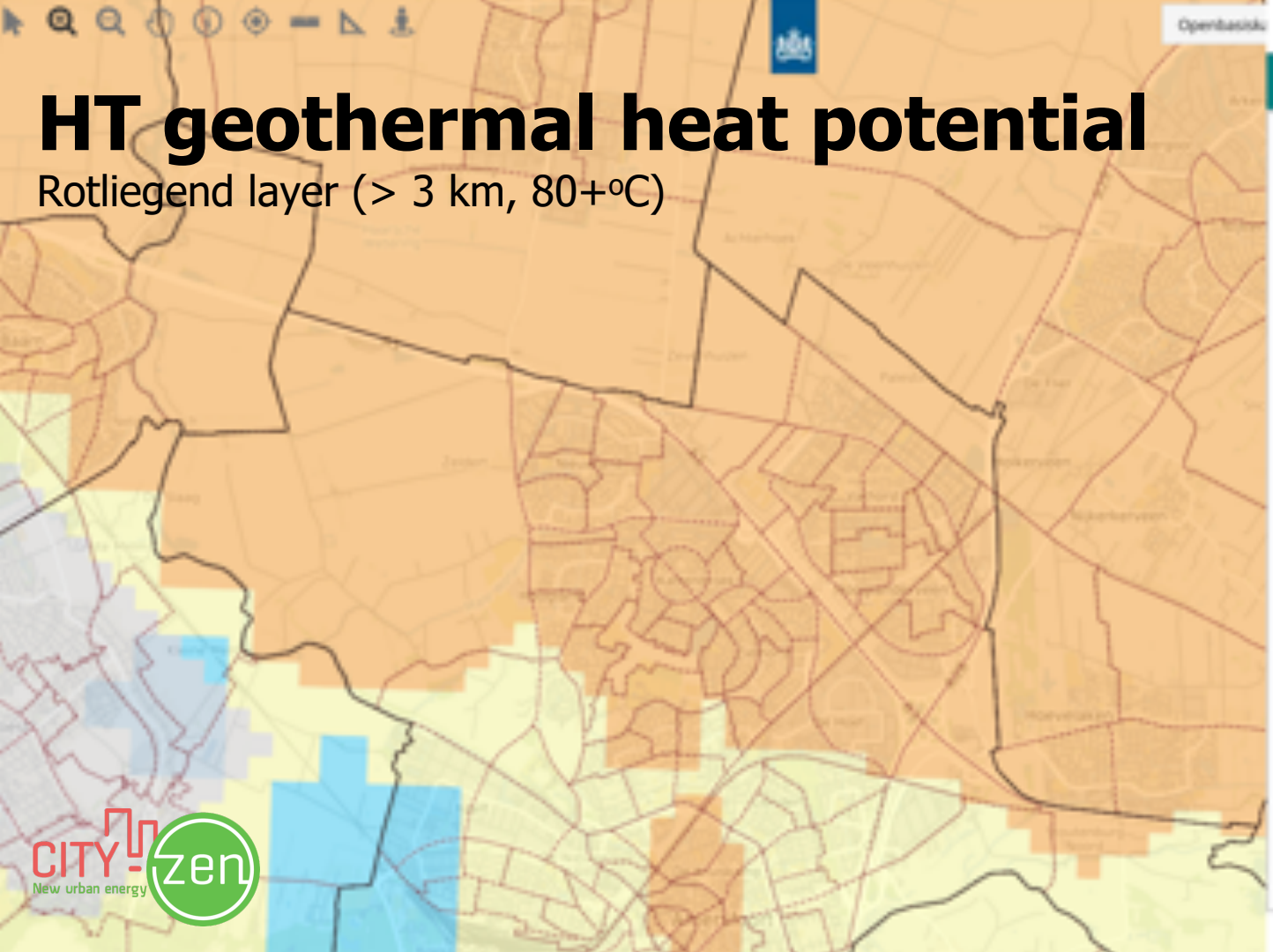
HT geothermal heat potential

Rotliegend layer (> 3 km, 80+°C)



HEB

Geothermal heat

Solar heat

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Solar collectors for HT/MT heat supply

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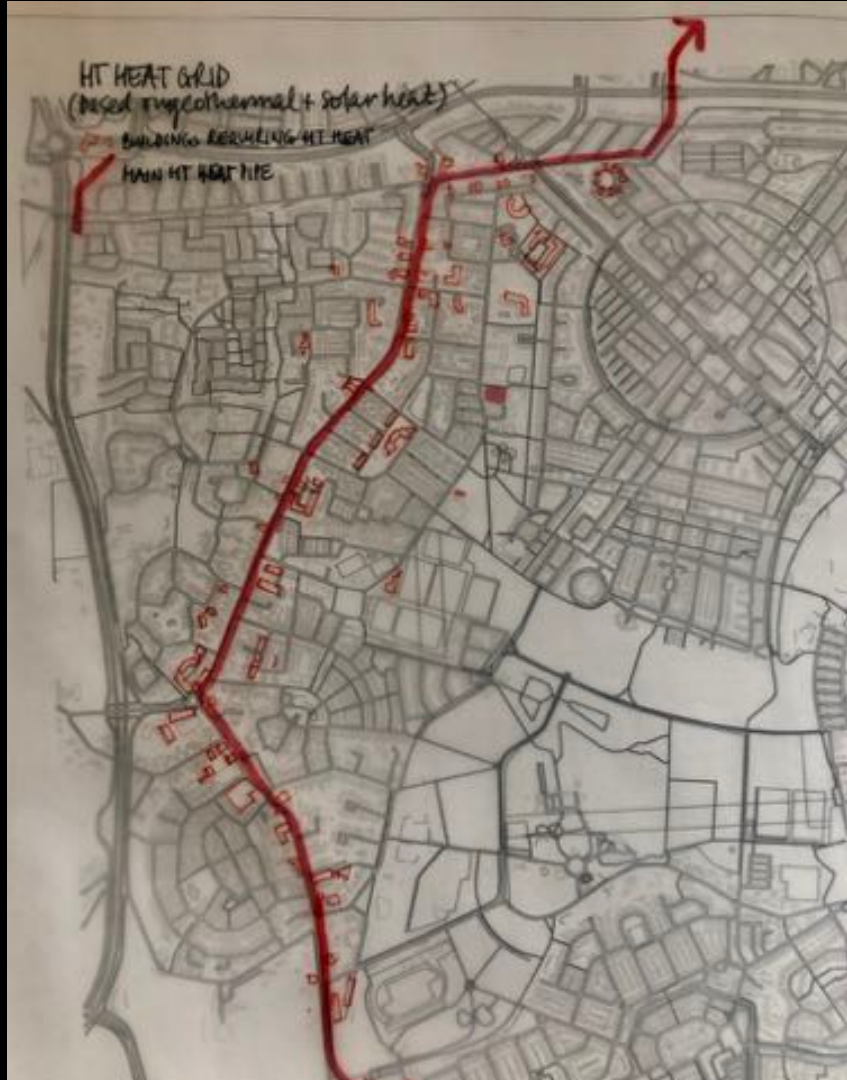
Vacant lots

Vacant lots with solar heat collectors

HT heat network
powered by geothermal



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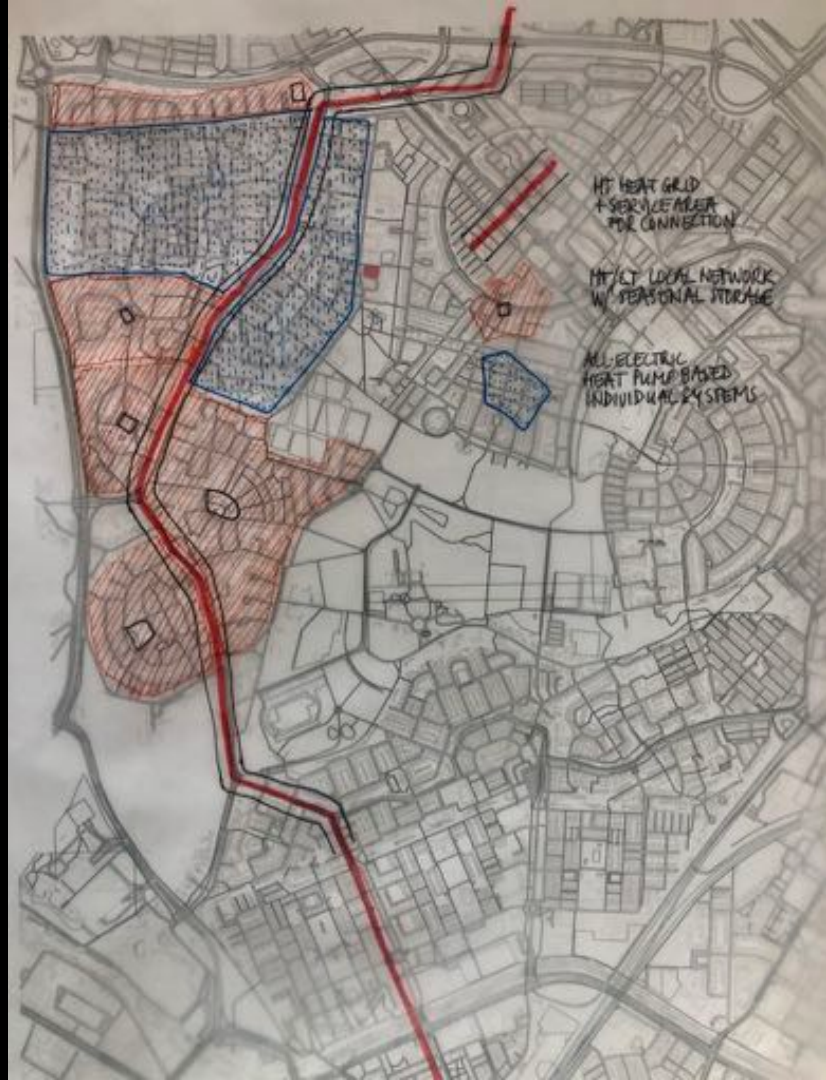
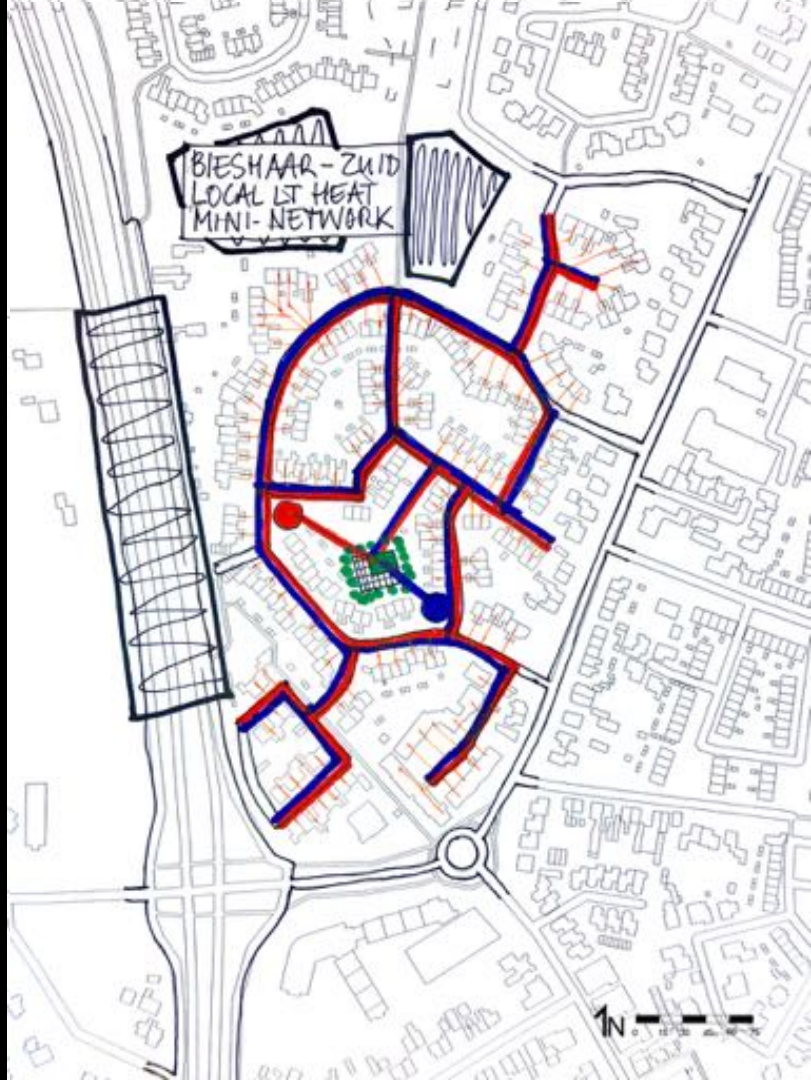
HT heat pipe

Local LT heat networks

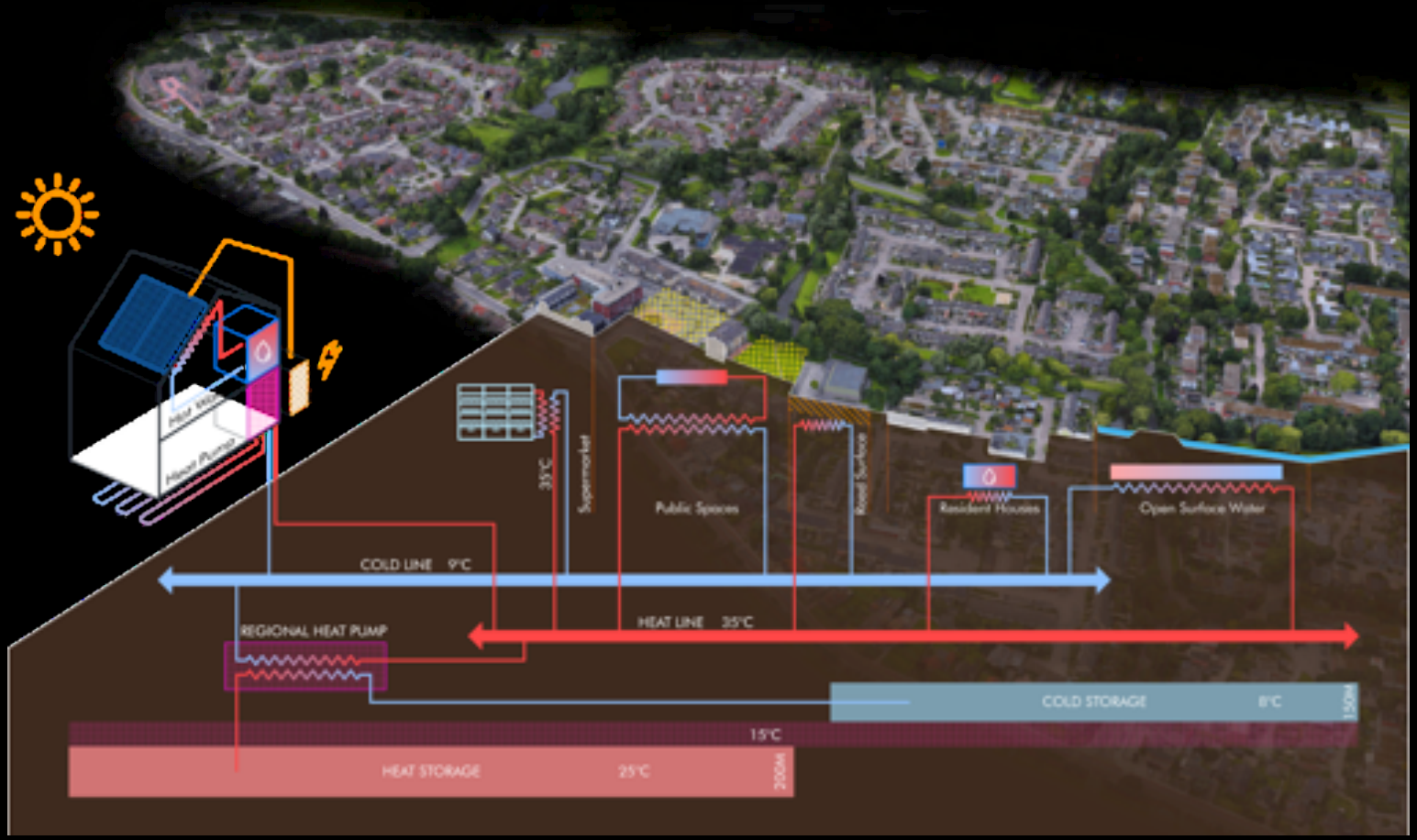
Individual heat pumps



Bieshaar South
Local LT mini-network



The many sources for a local LT heat mini-network



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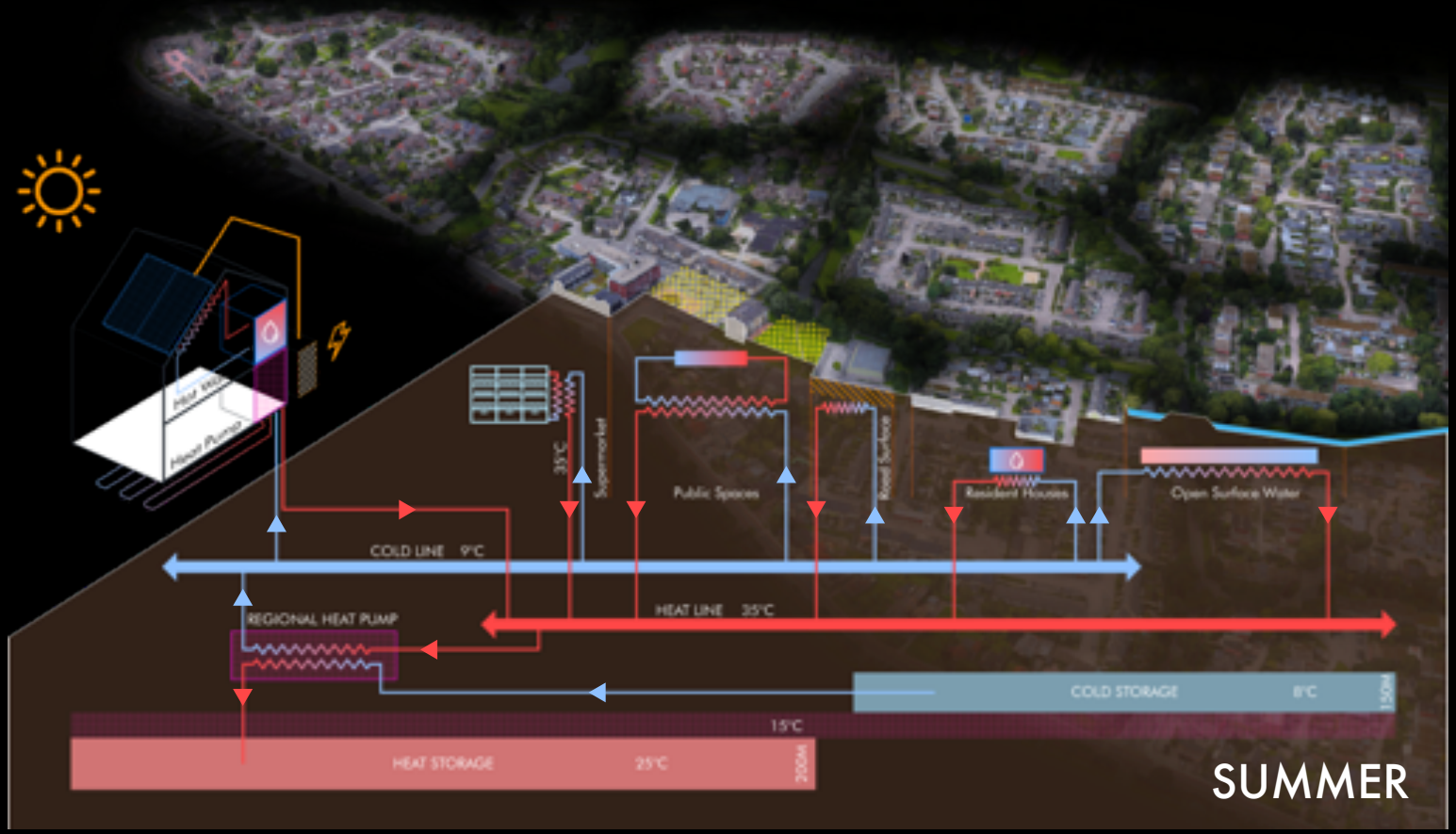

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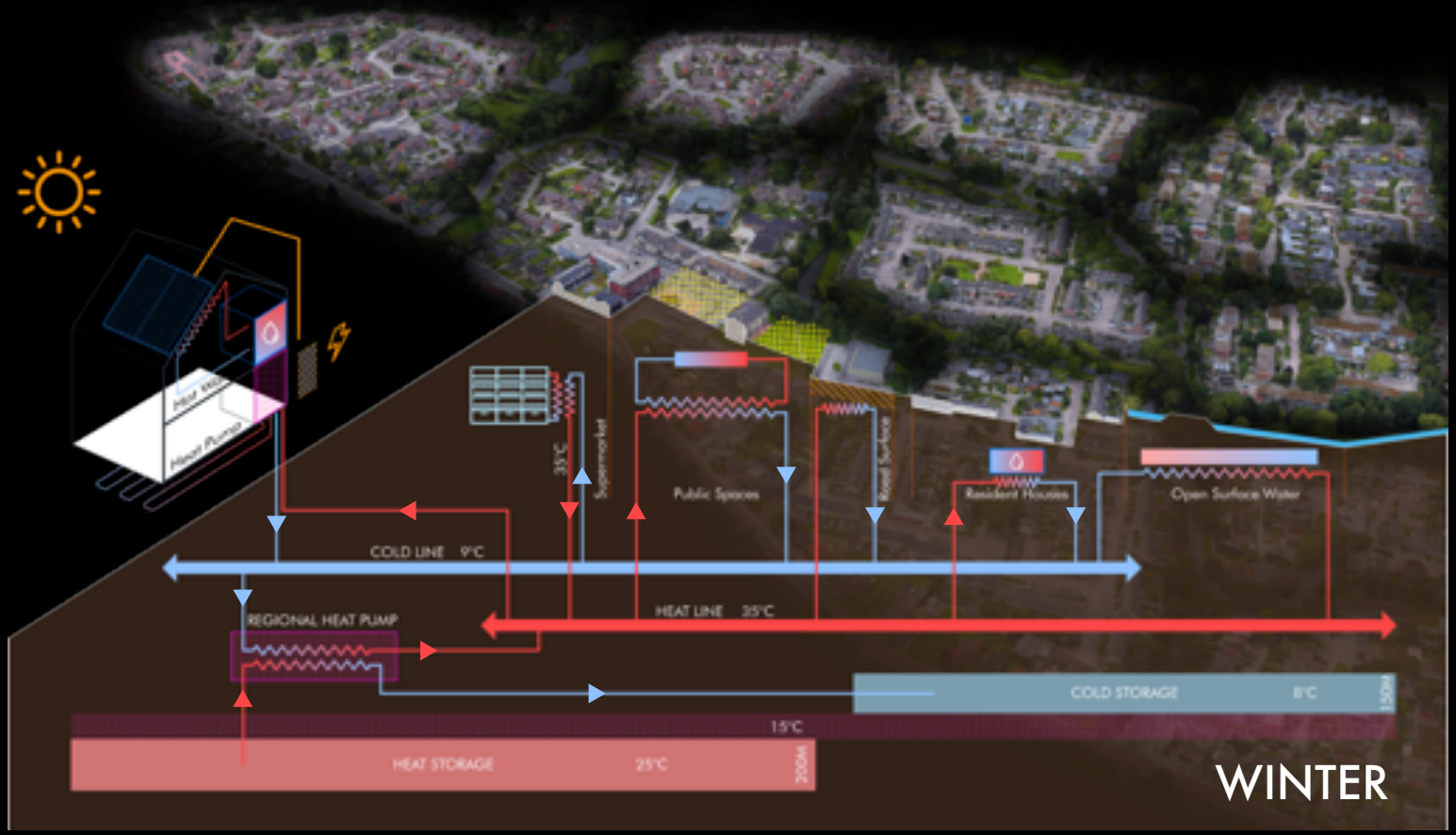
The many sources for a local LT heat mini-network



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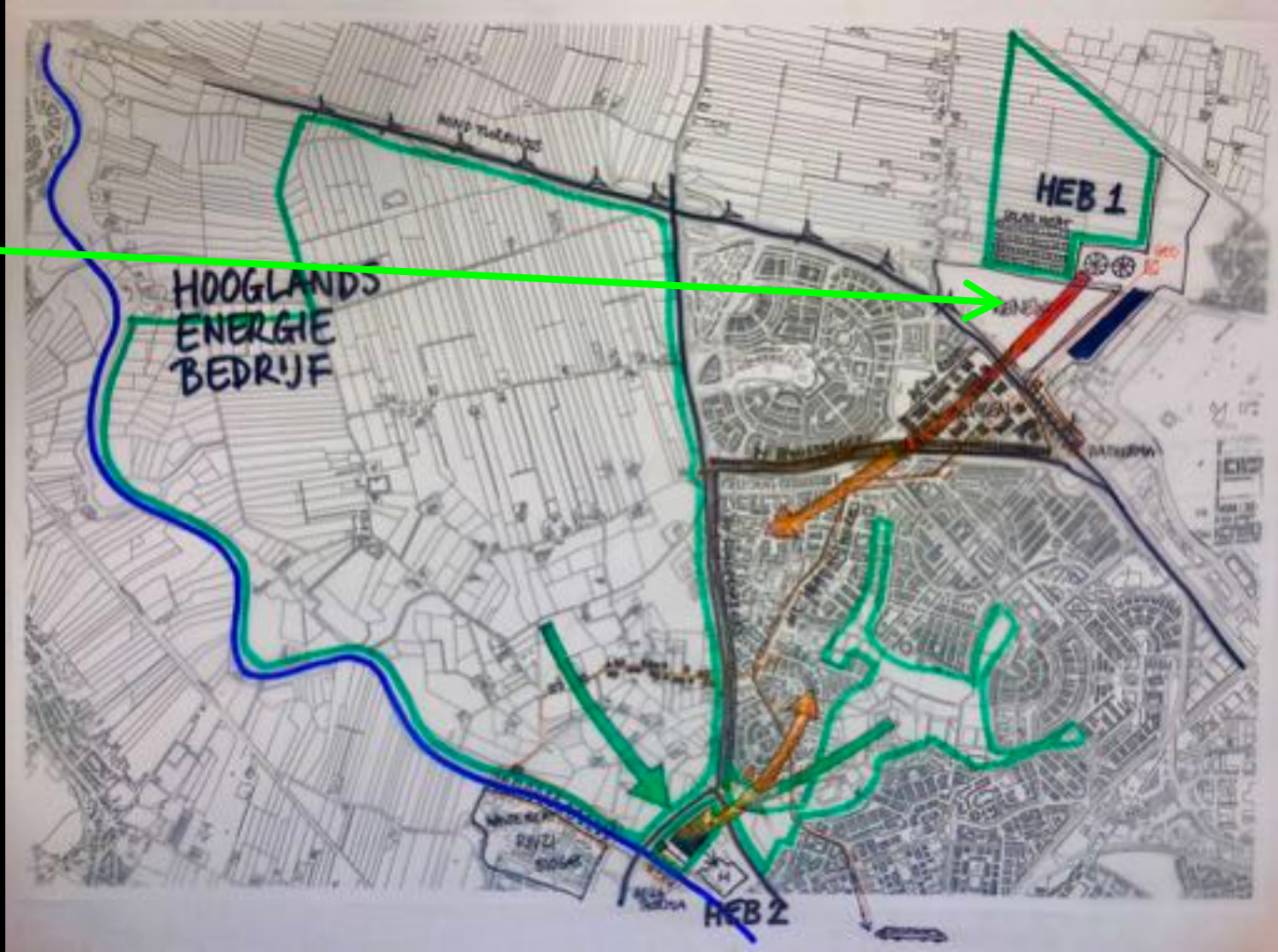
HEB

Geothermal heat

Solar heat

Biogas from waste



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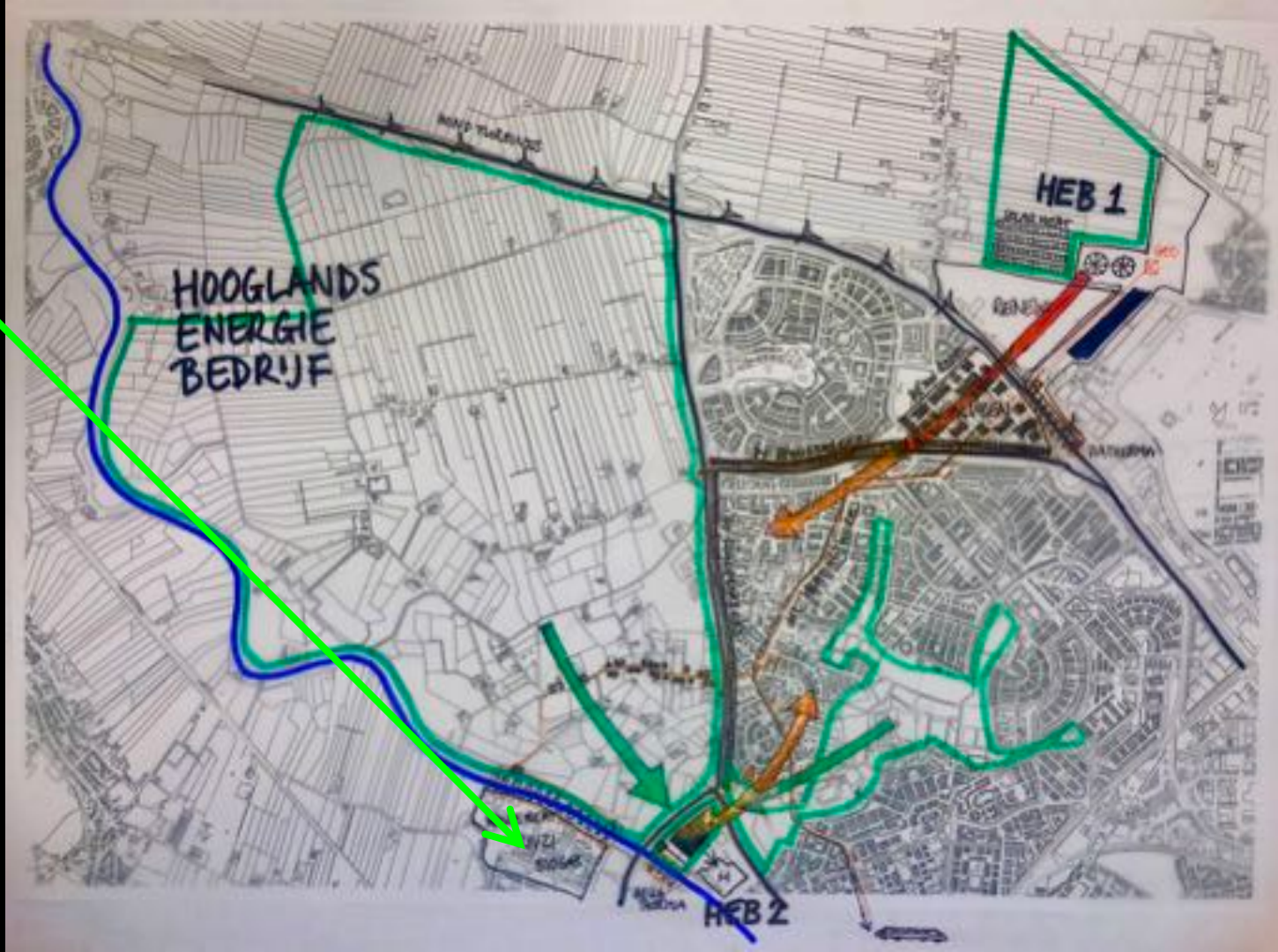
The highest mountain in the village

Kantel! Make waste useful

HEB

Geothermal heat
Solar heat
Biogas from waste
Waste water heat



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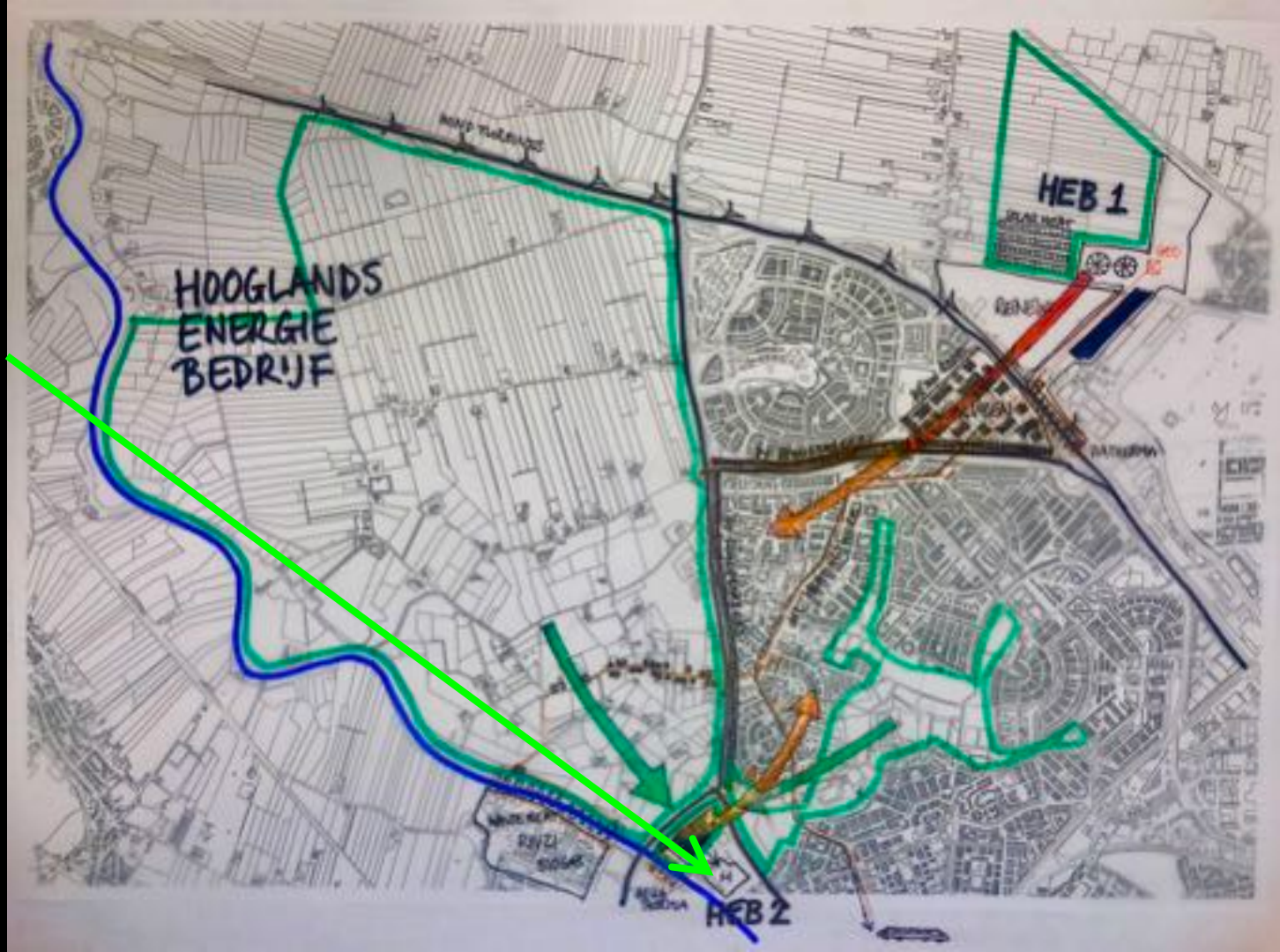
Energy from waste water treatment

This still has nutrients and LT heat

HEB

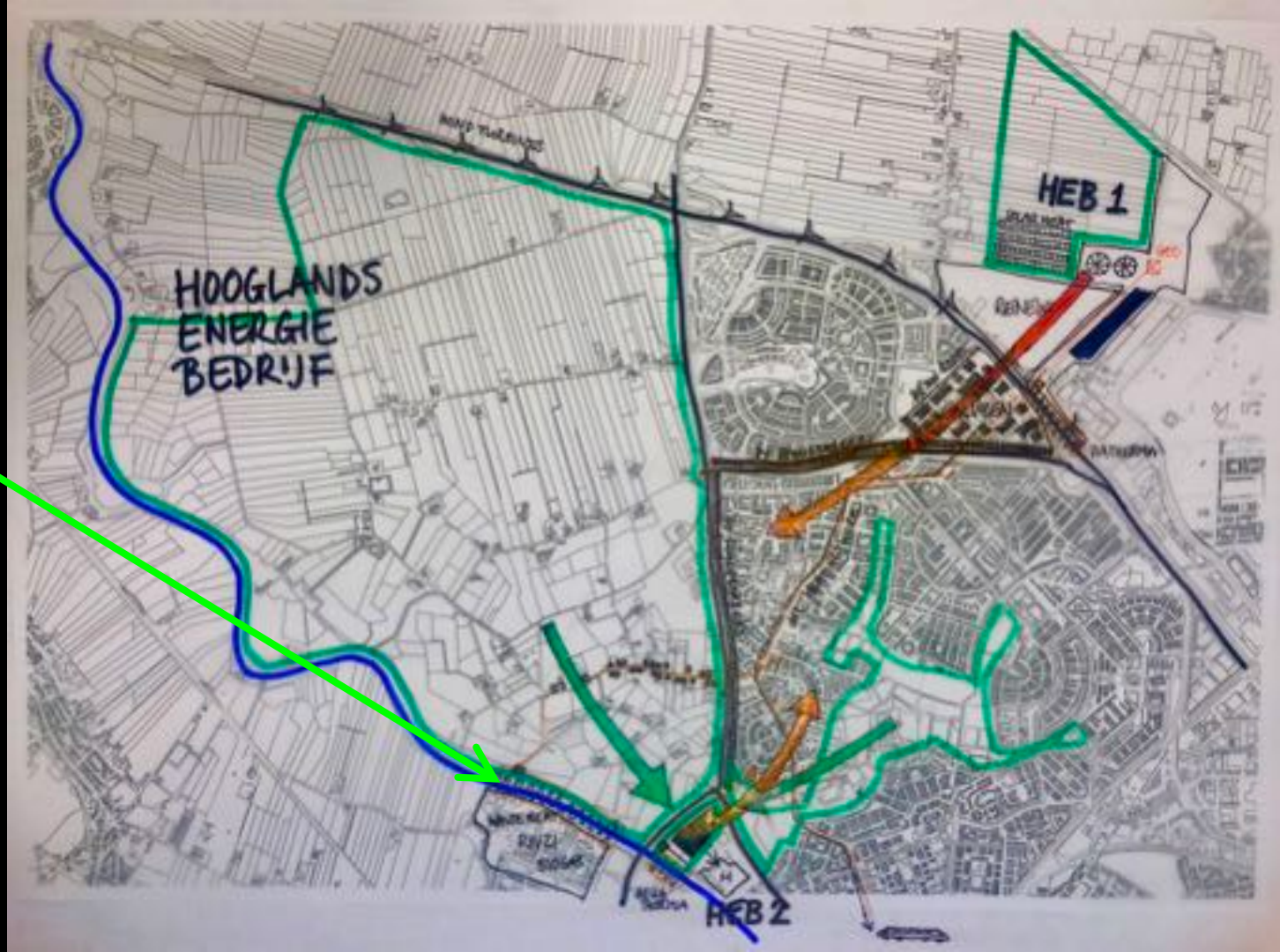
Geothermal heat
Solar heat
Biogas from waste
Waste water heat
Hospital waste heat



Waste heat from the hospital

HEB

Geothermal heat
Solar heat
Biogas from waste
Waste water heat
Hospital waste heat
Aquathermia

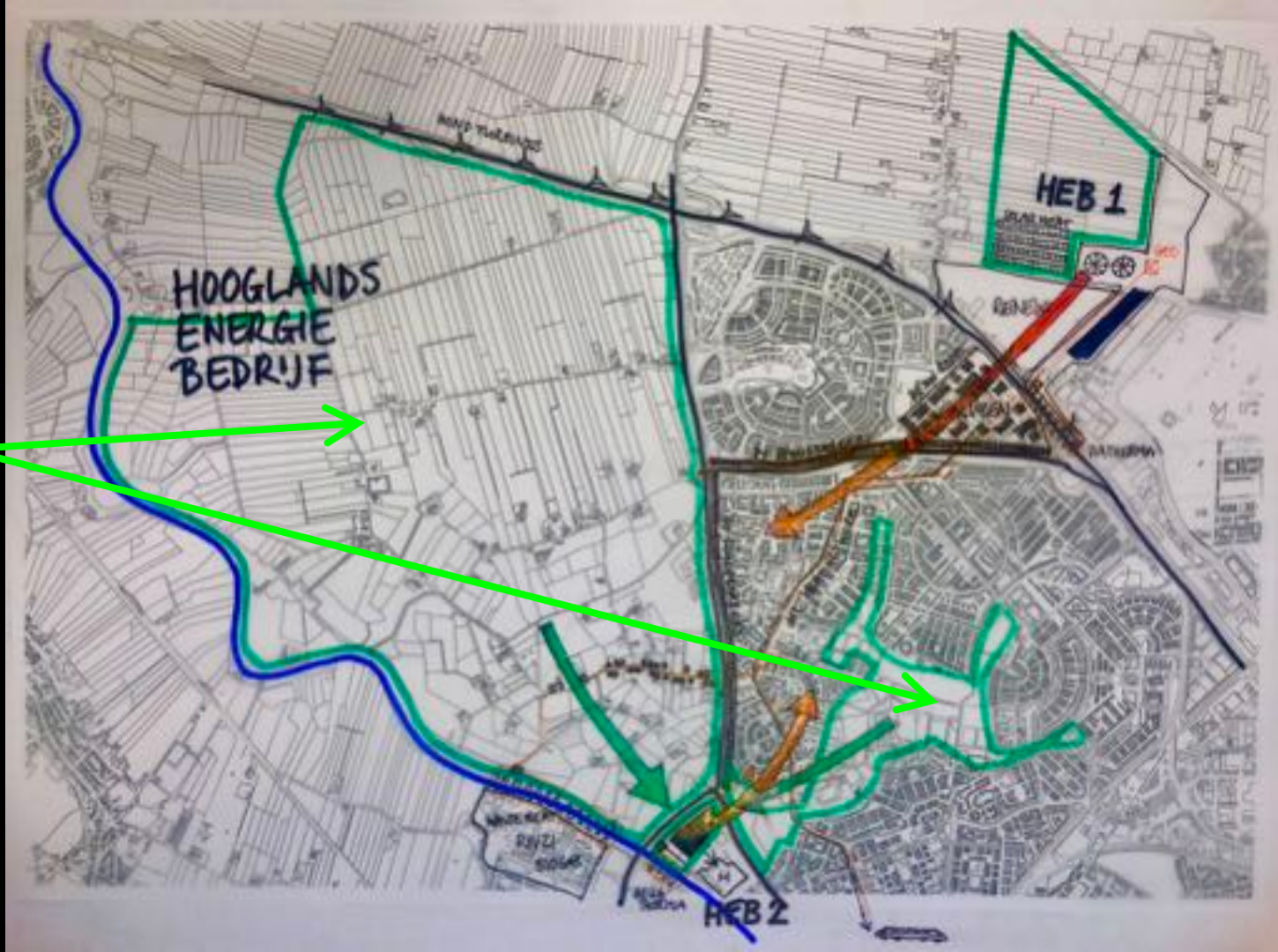


CITY zen
New urban energy

Aquathermia

HEB

Geothermal heat
Solar heat
Biogas from waste
Waste water heat
Hospital waste heat
Aquathermia
Bio-organic waste



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Beautiful Hoogland West

Plenty of organic waste from farms

Organic waste from Schothorst Park

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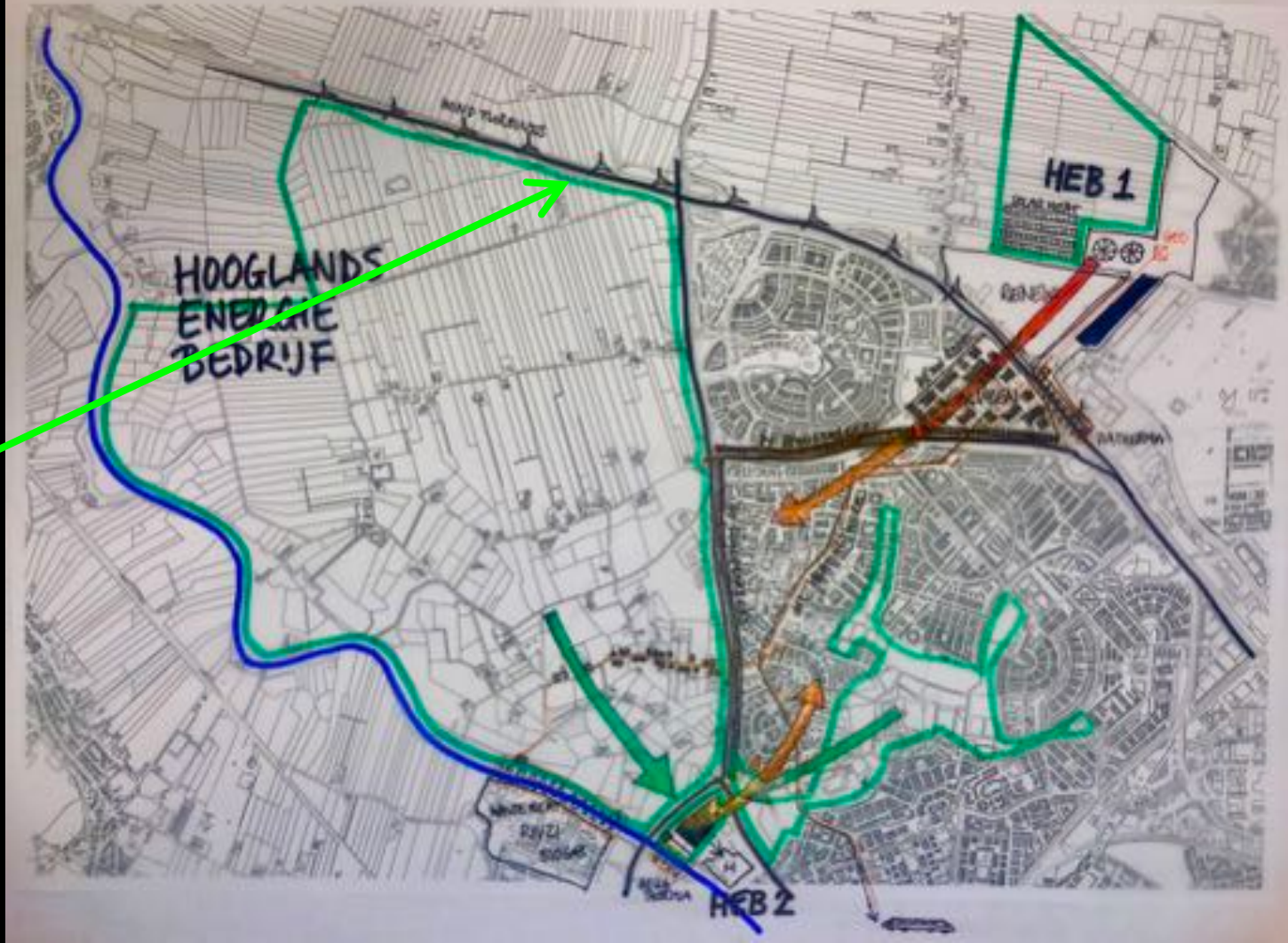
Organic waste from the village

HEB

Geothermal heat
Solar heat
Biogas from waste
Waste water heat
Hospital waste heat
Aquathermia
Bio-organic waste
Wind turbines

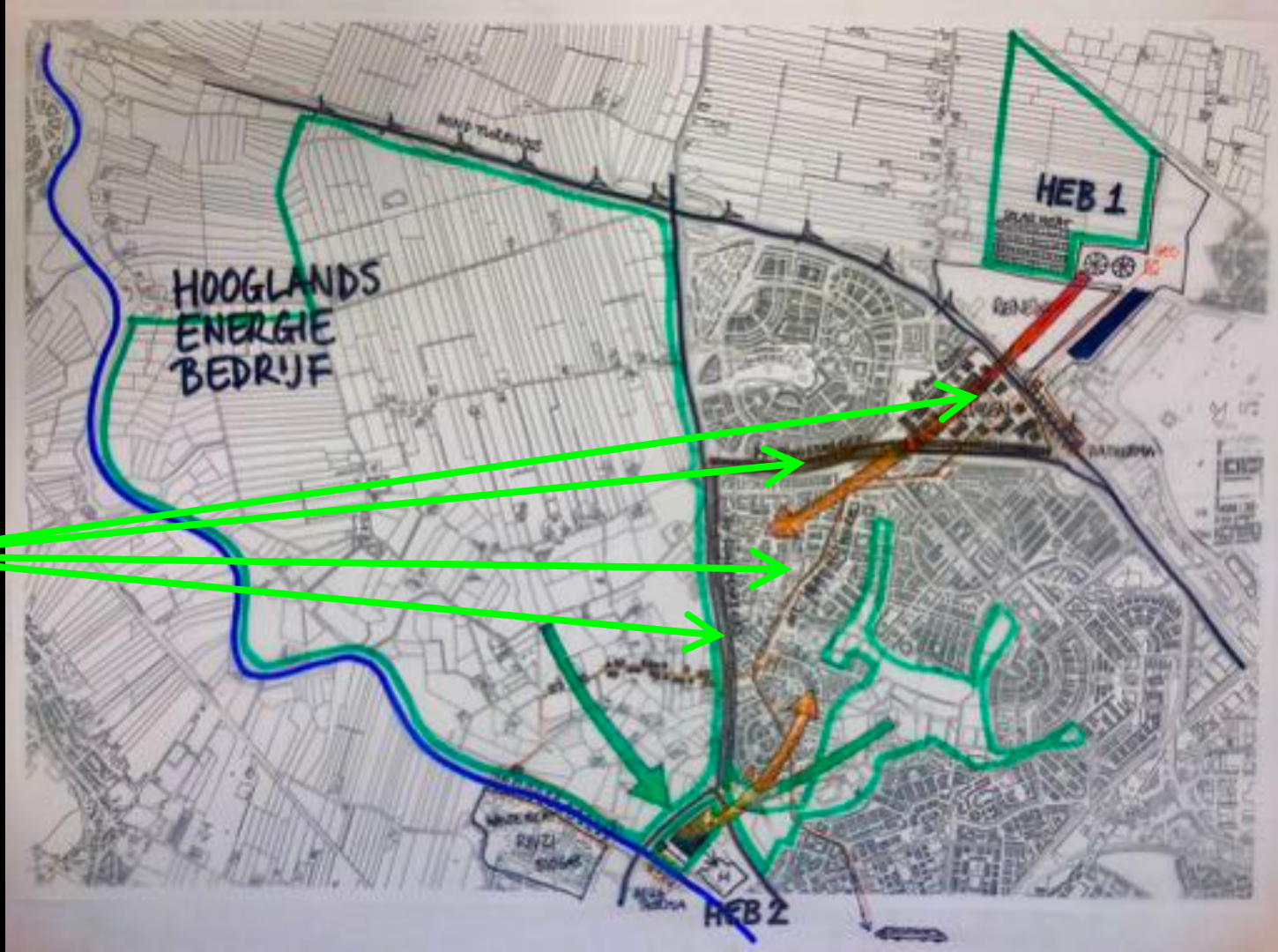


Highland highway wind

From nuisance to pride

HEB

Geothermal heat
Solar heat
Biogas from waste
Waste water heat
Hospital waste heat
Aquathermia
Bio-organic waste
Wind turbines
Photovoltaics



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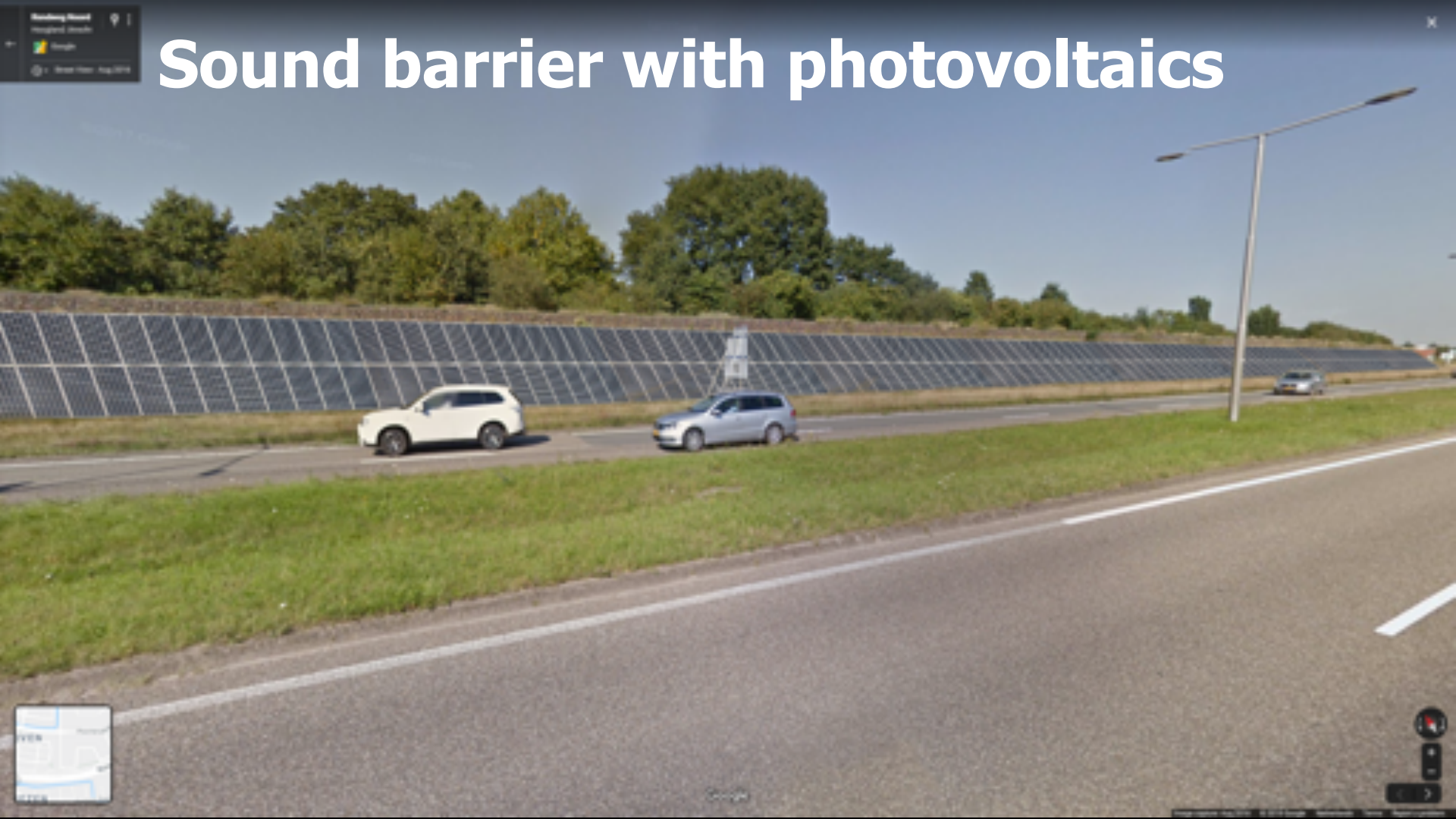
Sound barrier

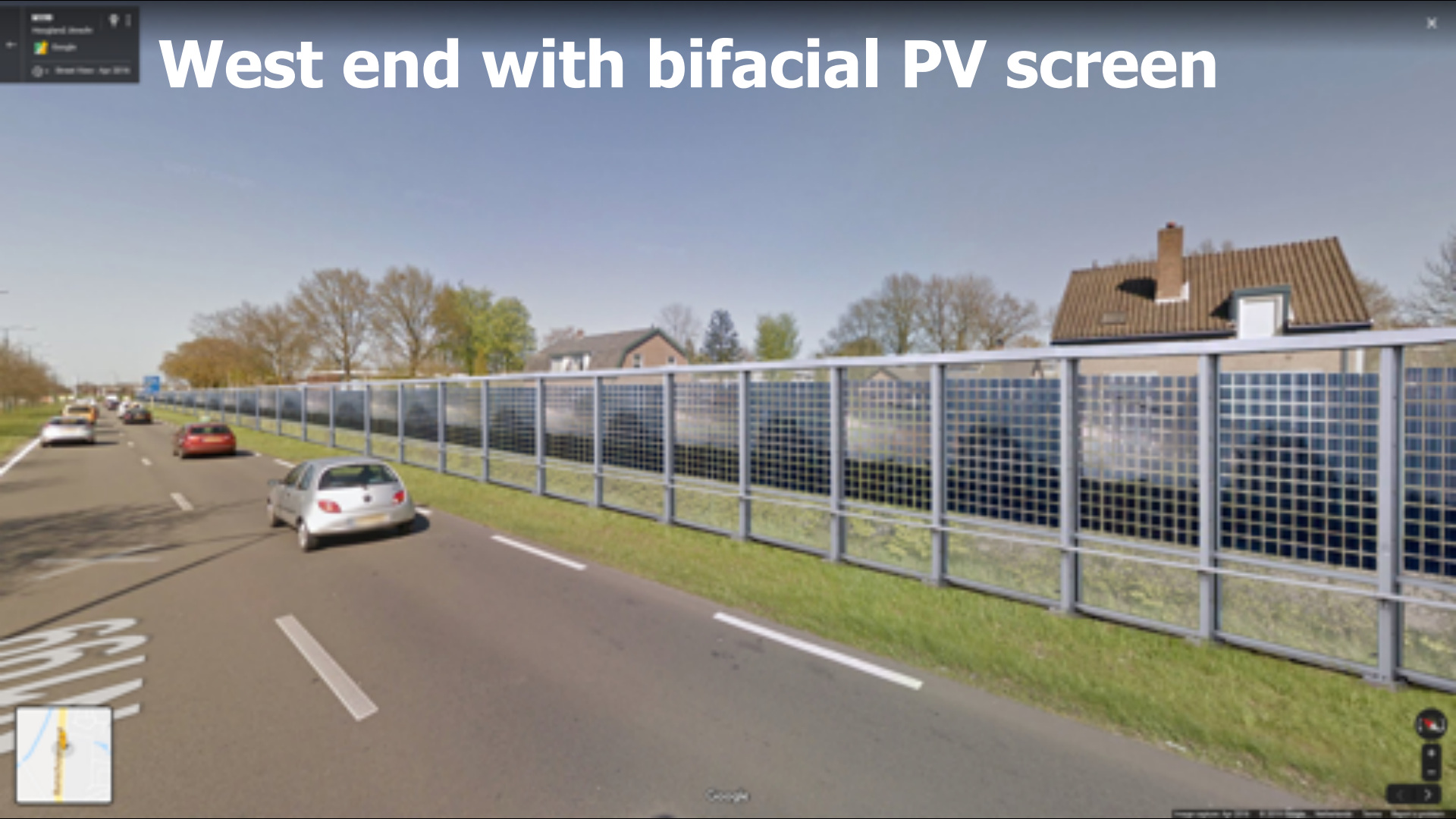
Sound barrier with photovoltaics



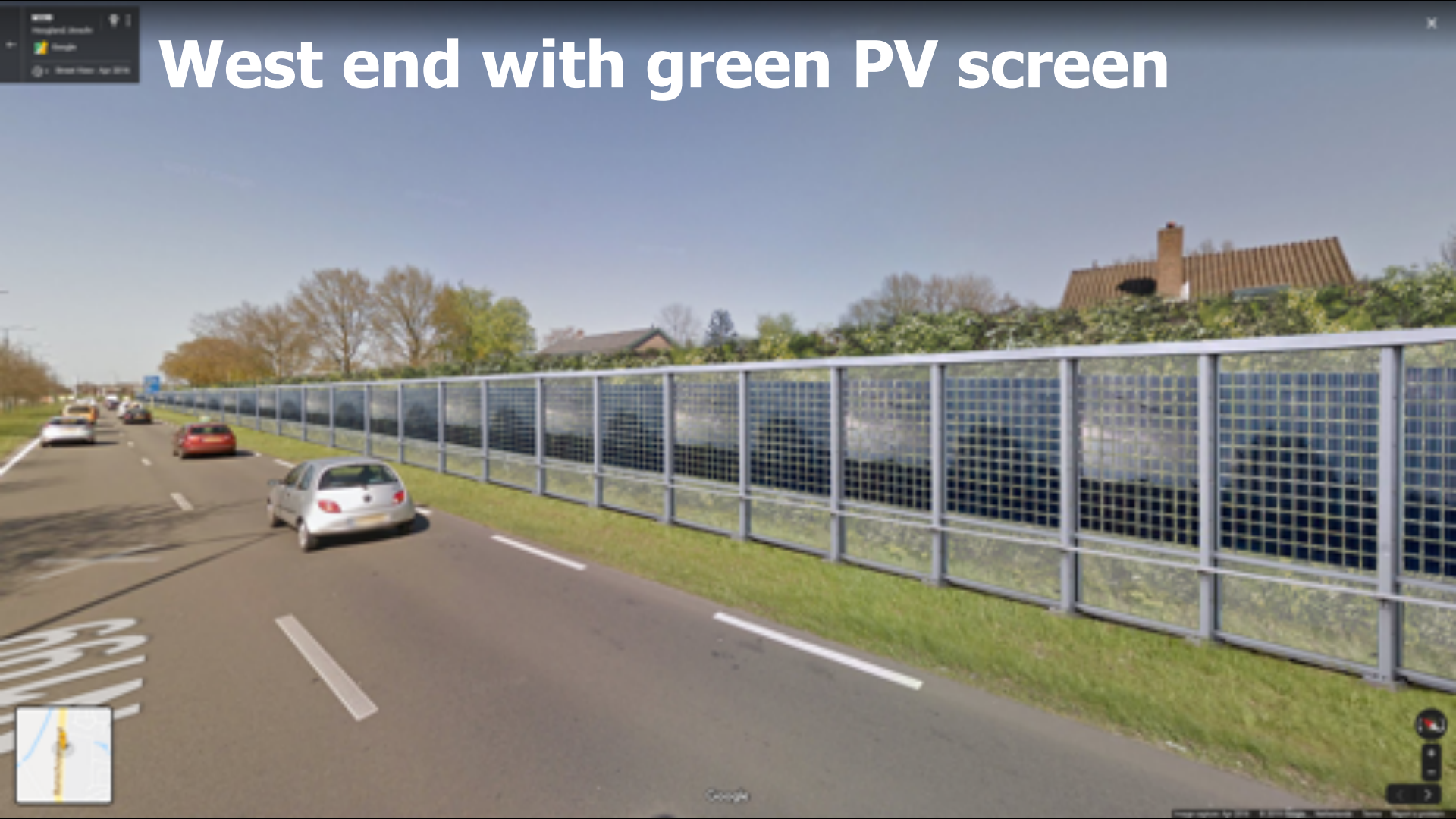
Sound barrier with solar collectors

West end

West end with bifacial PV screen



West end with green PV screen



Solar potential

Buildings with PV

Even nicer

Solutions at the building scale

Energy retrofit

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Energy labels


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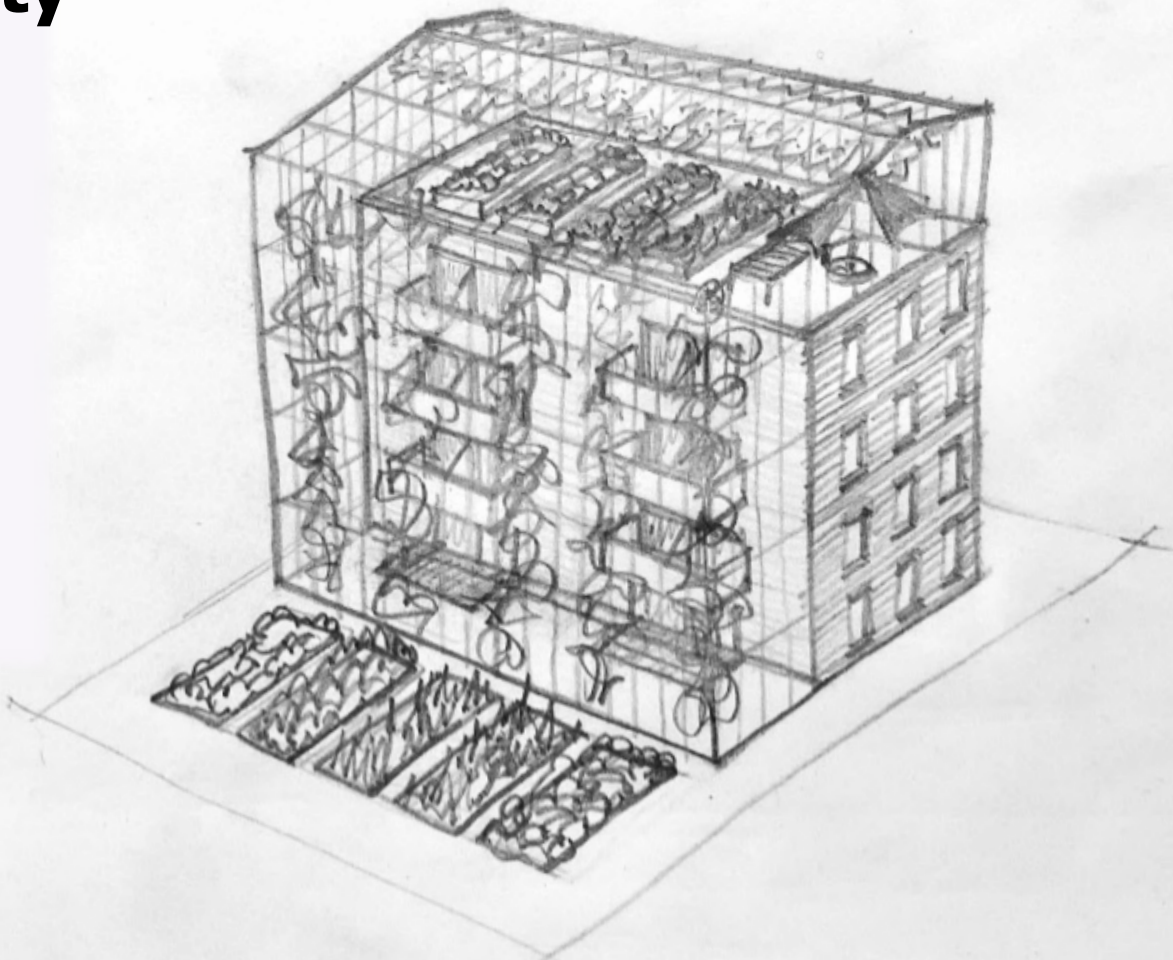
A new quality



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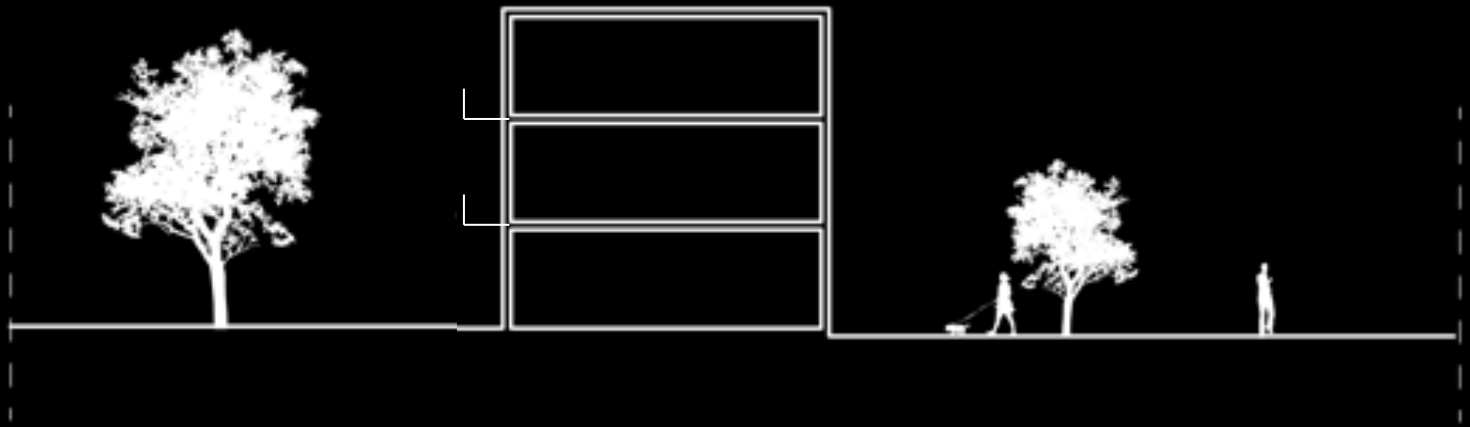
Original situation



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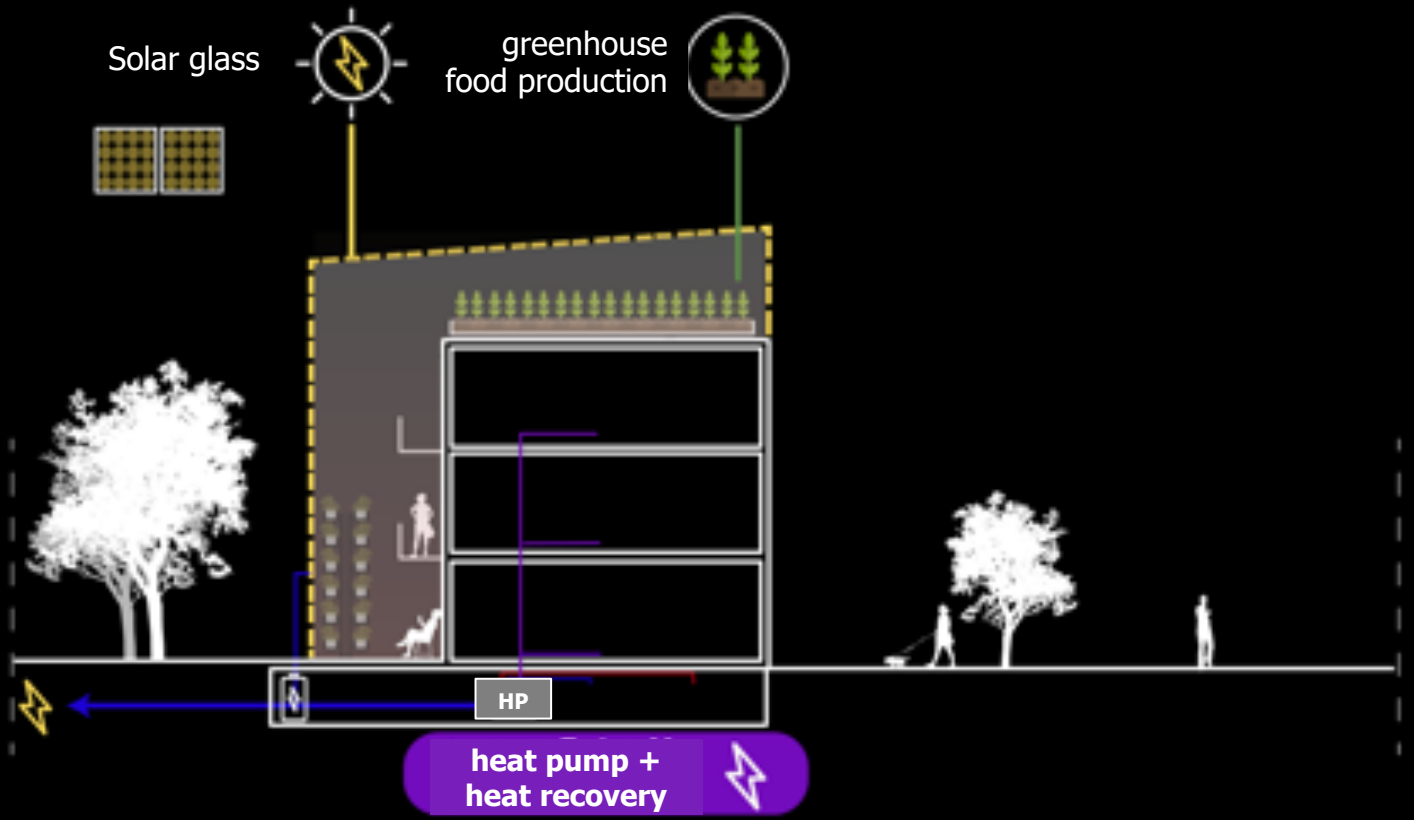
Solution


Solar glass
greenhouse
food production
HP
heat pump +
heat recovery

Transformation

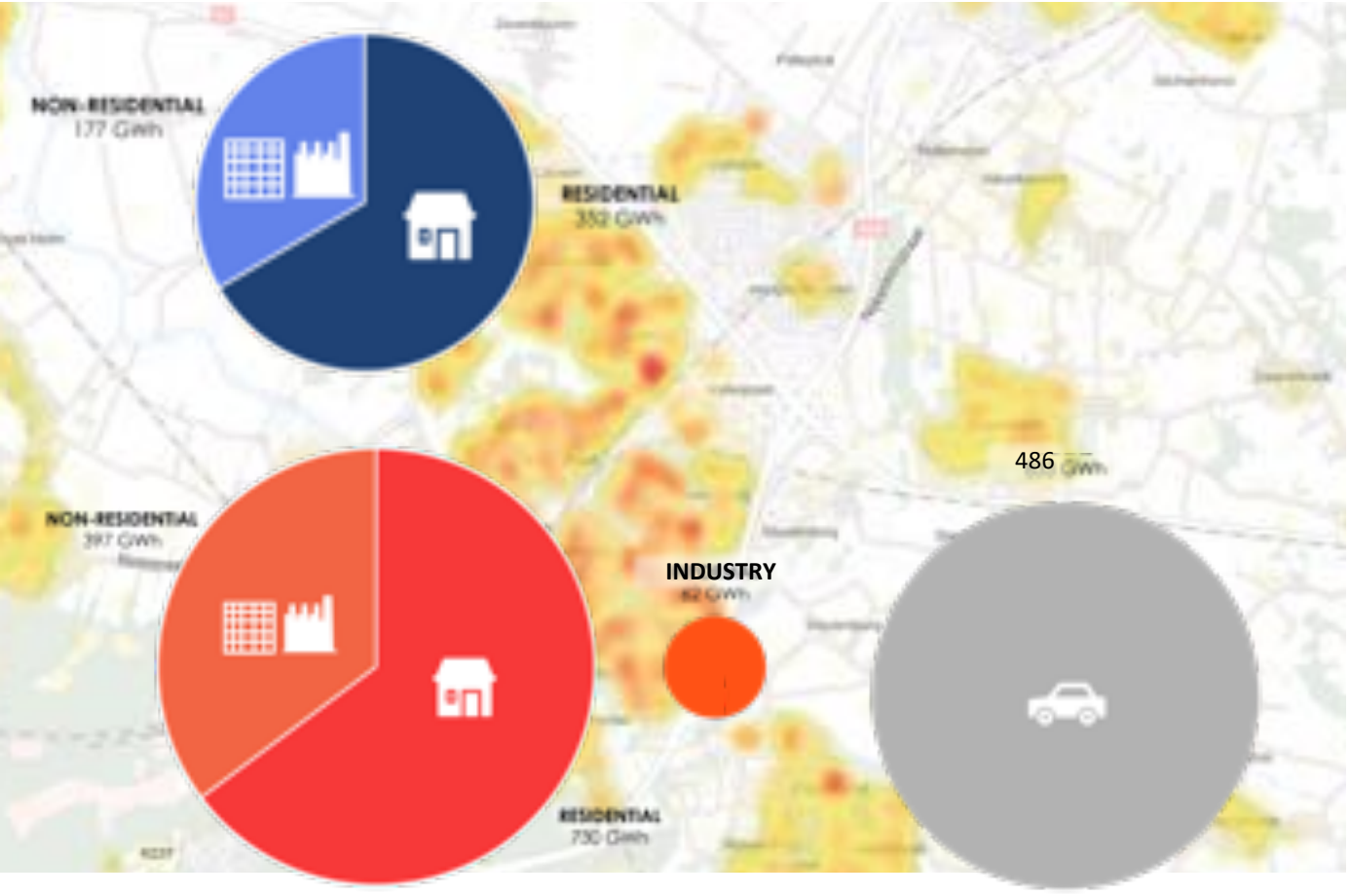
Transformation

Transformation

Transformation


Thank
you!

Energy demand Amersfoort 2017



Heat demand
1127 GWh_{th} in 2017
+
62 GWh_{pr} in 2017

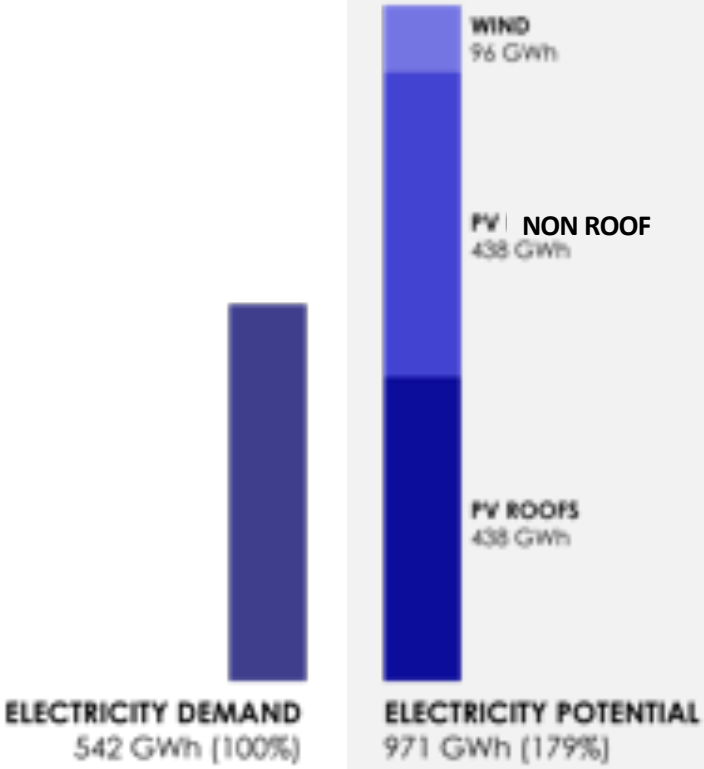
Electricity demand
529 GWh_e in 2017

Energy for mobility
486 GWh_e in 2017

Energy strategy: Siebe Broersma MSc, Technical University, Delft.

CITY-zen
New urban energy

Electricity potentials Amersfoort



Space for production

12 wind turbines

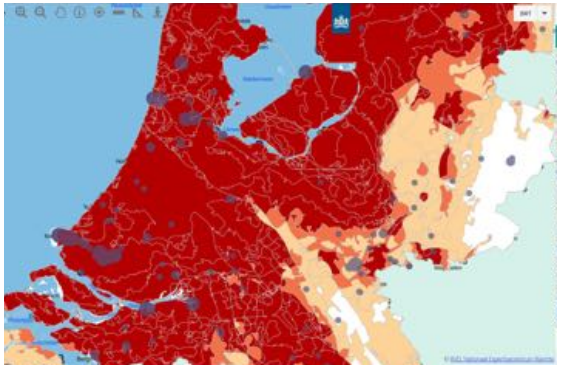
25% of all roofs (250 ha)

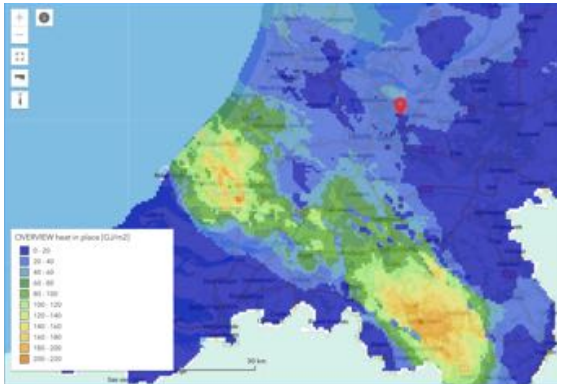
250 ha non-roof

Energy strategy: Siebe Broersma MSc, Technical University, Delft.

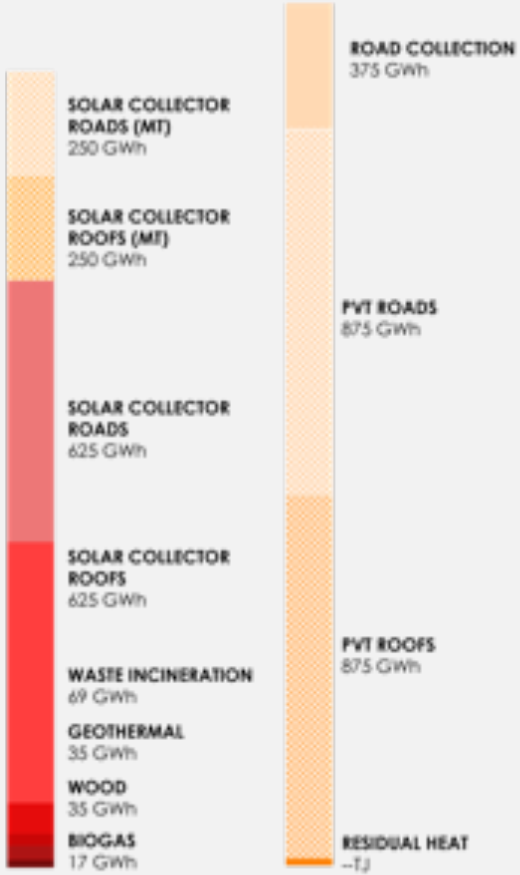
CITY-zen
New urban energy

Heat potentials Amersfoort





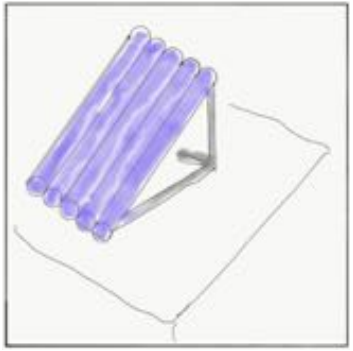
HEAT DEMAND
1190 GWh (100%)



HT
1906 GWh (352%)

MT
2125 GWh (392%)

HEAT POTENTIAL



Temperature levels

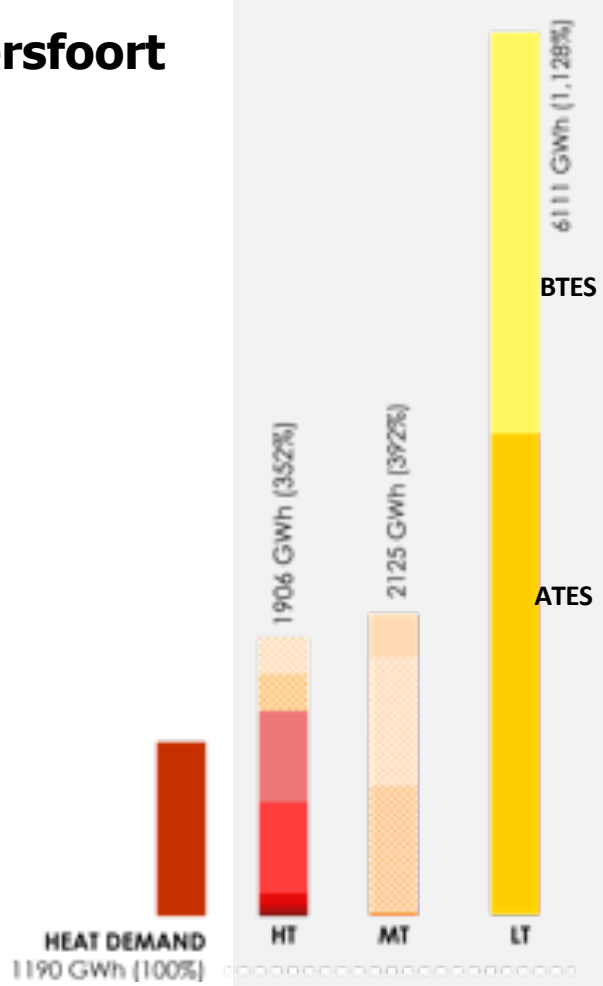
High-T for district heat network (DHN)

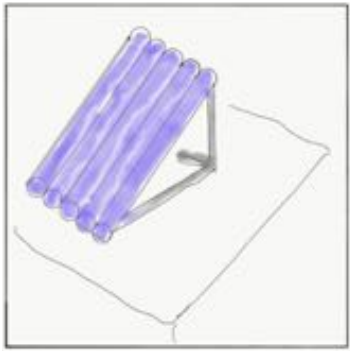
Mid-T often energy renovation is needed

CITY-zen
New urban energy

Energy strategy: Siebe Broersma MSc, Technical University, Delft.

Heat potentials Amersfoort



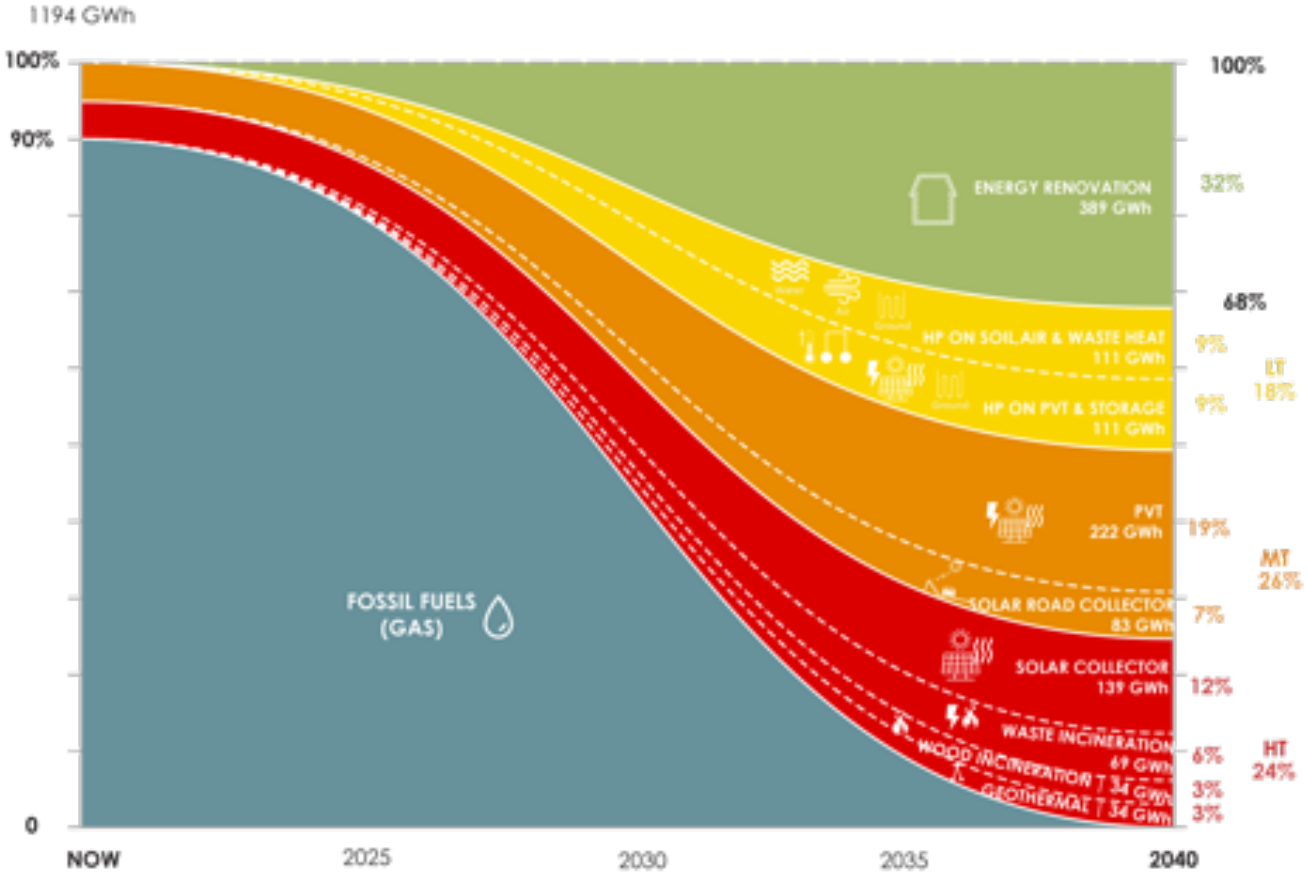


Temperature levels

Low-temperature
Often in combination
with heat pumps

Energy strategy: Siebe Broersma MSc, Technical University, Delft.

Heat balance scenario 2040



Temperature levels

32% reduction

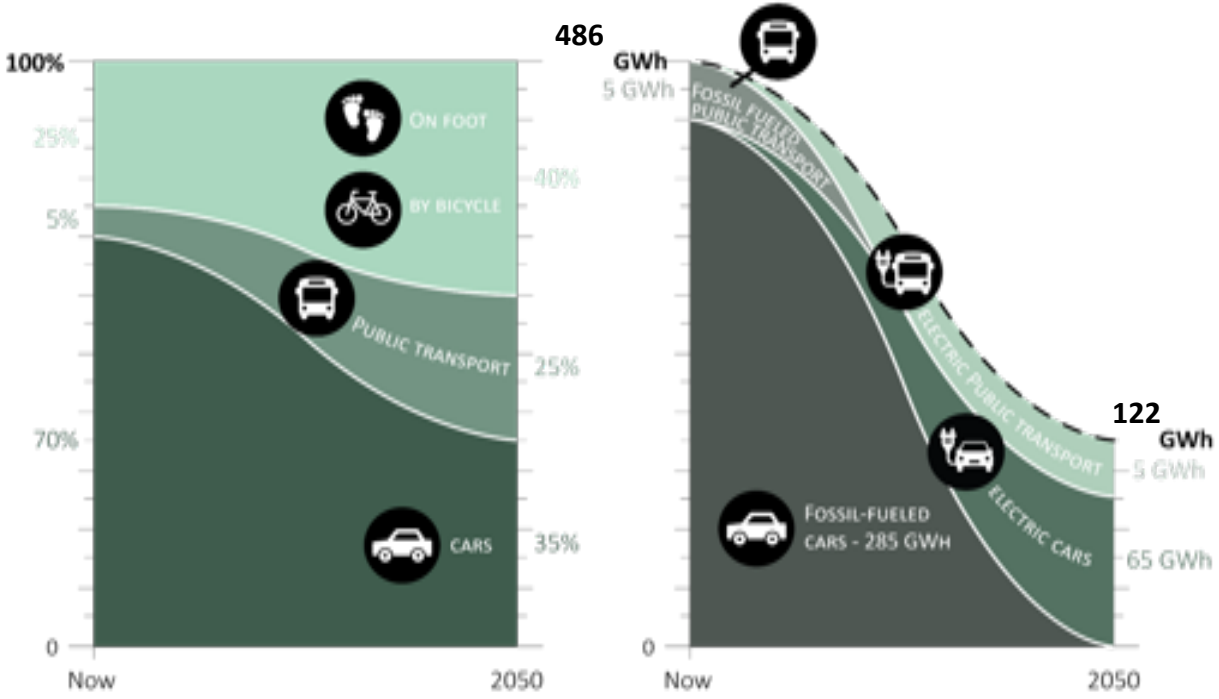
24% High-T for DHN

26% Mid-T

18% Low-T

Energy strategy: Siebe Broersma MSc, Technical University, Delft.

Sustainable transport scenario



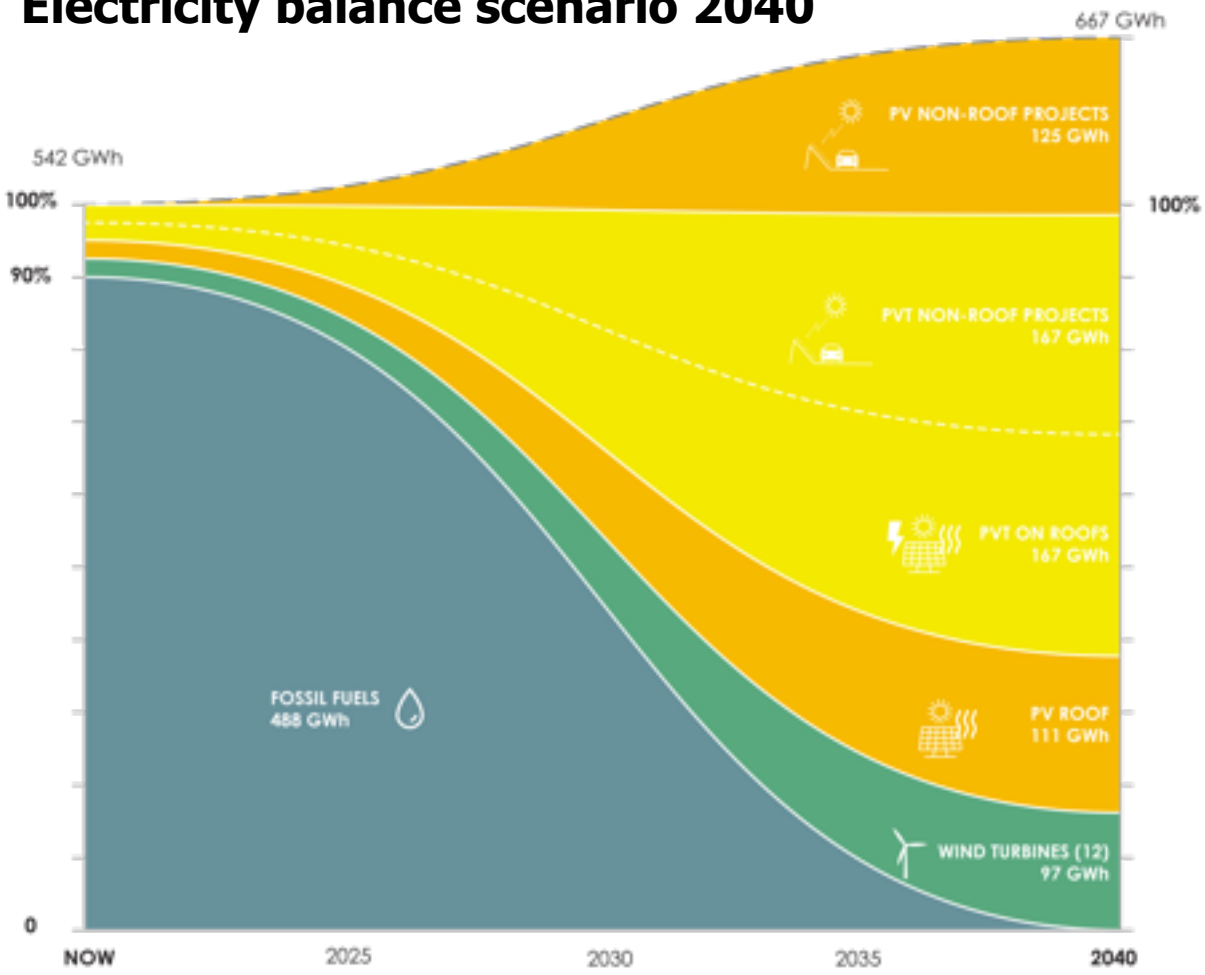
Main directions

Modal shift

Electrification

Energy strategy: Siebe Broersma MSc, Technical University, Delft.

Electricity balance scenario 2040



Energy strategy: Siebe Broersma MSc, Technical University, Delft.

Production of power

12 4MW Wind Turbines

20% of roof use

250 ha non-roof projects

Also co-generation (biomass + waste incineration)

CITY-zen
New urban energy

Collective Heating HT

Build a collective High-temperature (HT) District Heat Network

for the city centre and other historic/old buildings

with 20,000 (res. eq.) connections;

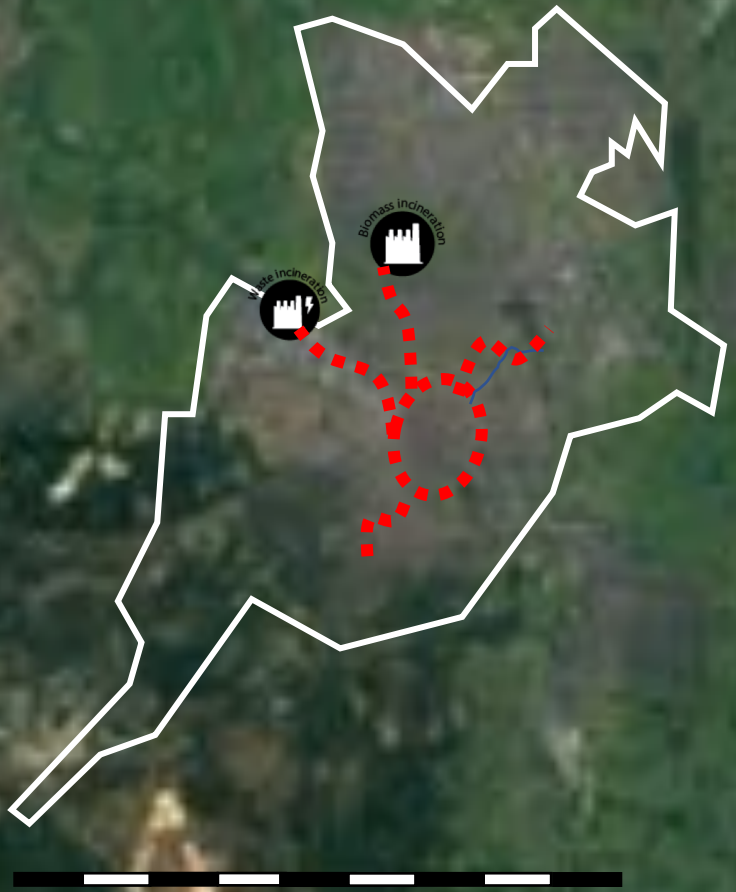
1000 connections per year

Biomass Heat and Power plant

Biomass incineration

Connect a biomass power plants to heat grid;

Based on the local waste wood only (35 GWh/yr)

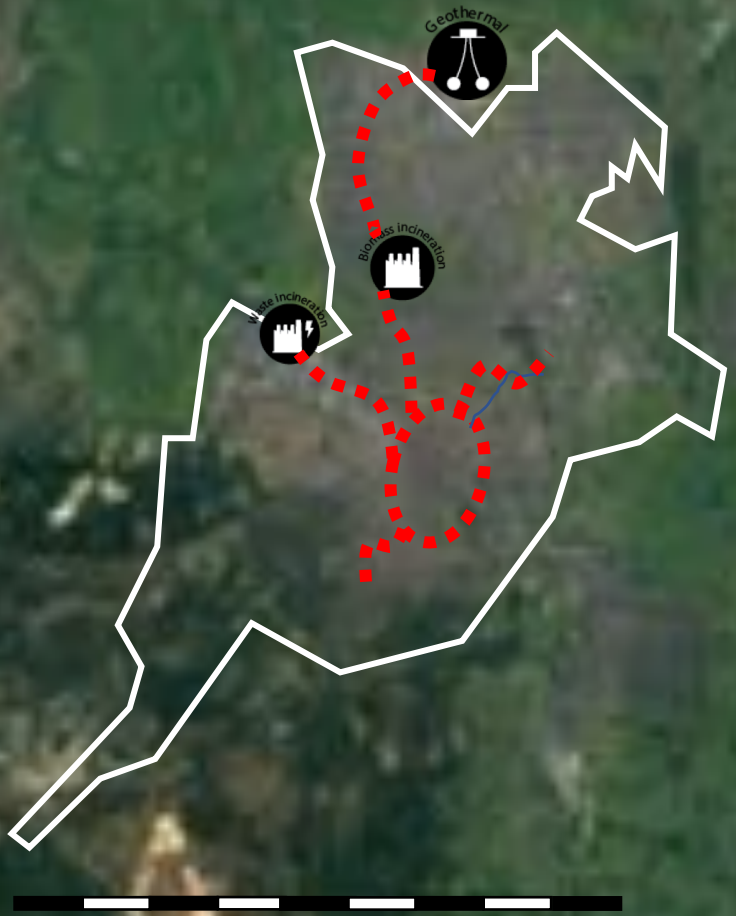


Waste incineration plant

Connect 1 (small) waste incineration plant to this grid

Based on the 10% of local non-recyclable waste

70 GWh/yr

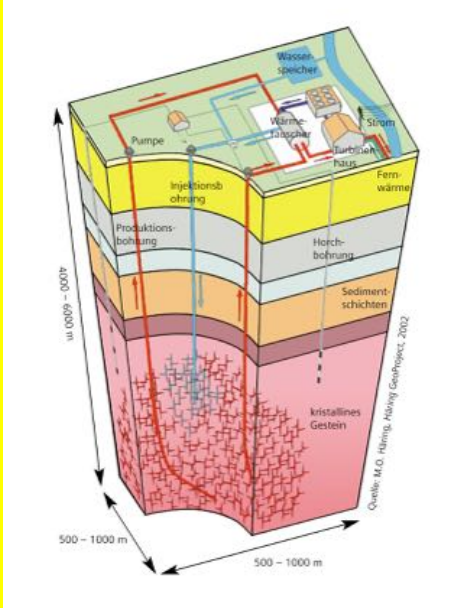


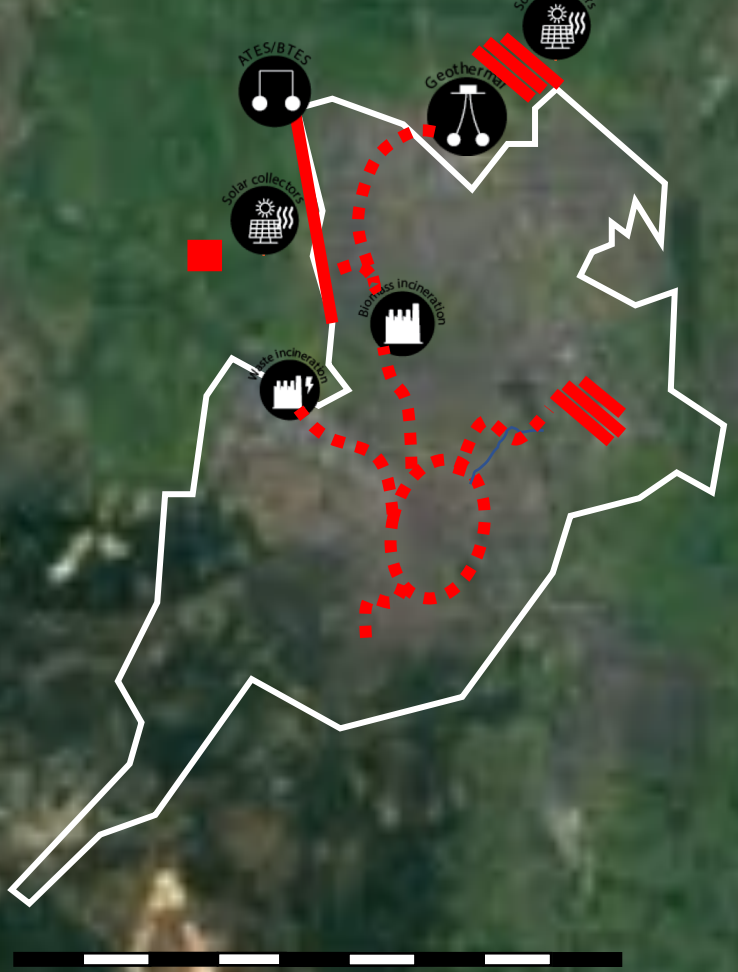
Deep geothermal well

Connect 1 >5MW deep geothermal well to this HT-grid

Nord of Amersfoort

35 GWh/yr





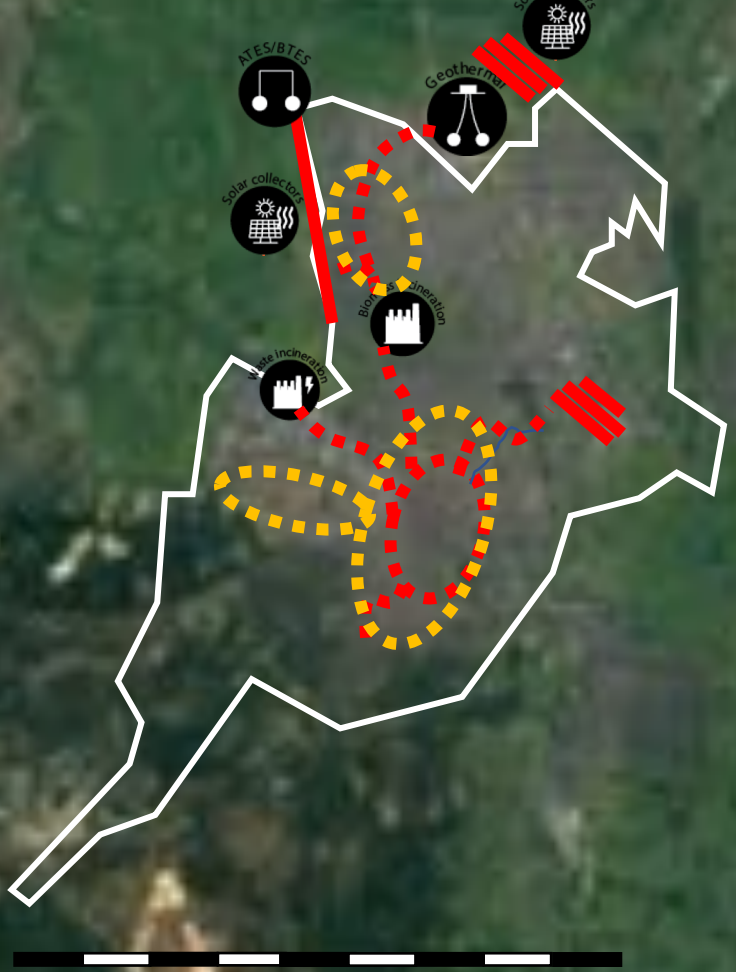
Solar collector parks

Install 56 ha of solar collectors in non-roof project
(along roads, the highway, railways, etc.)
and connect to the HT-grid

2,5 ha/yr = 17.000 modules

Facilitate 80 GWh of HT/MT seasonal storage in deep ATES systems

8 ATES wells/yr



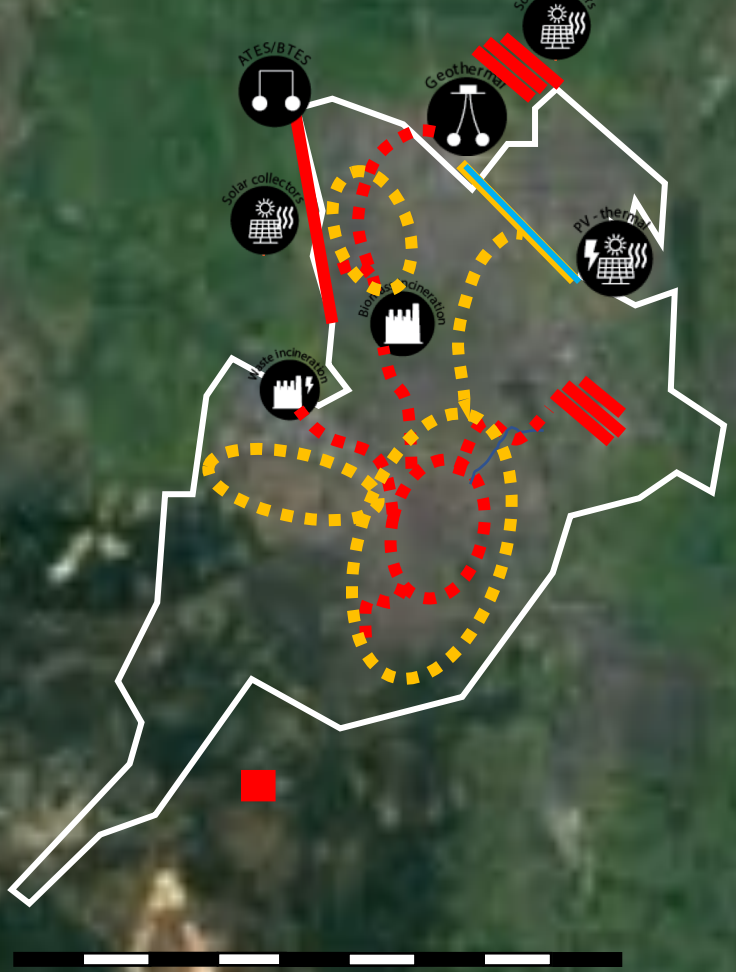
Collective Heating MT

Construct mid-temperature DHN with 18,000 connections

around the city centre – Soesterkwartier - Hoogland

this is also connected in a cascaded way to the HT net

For DHW boosters are required

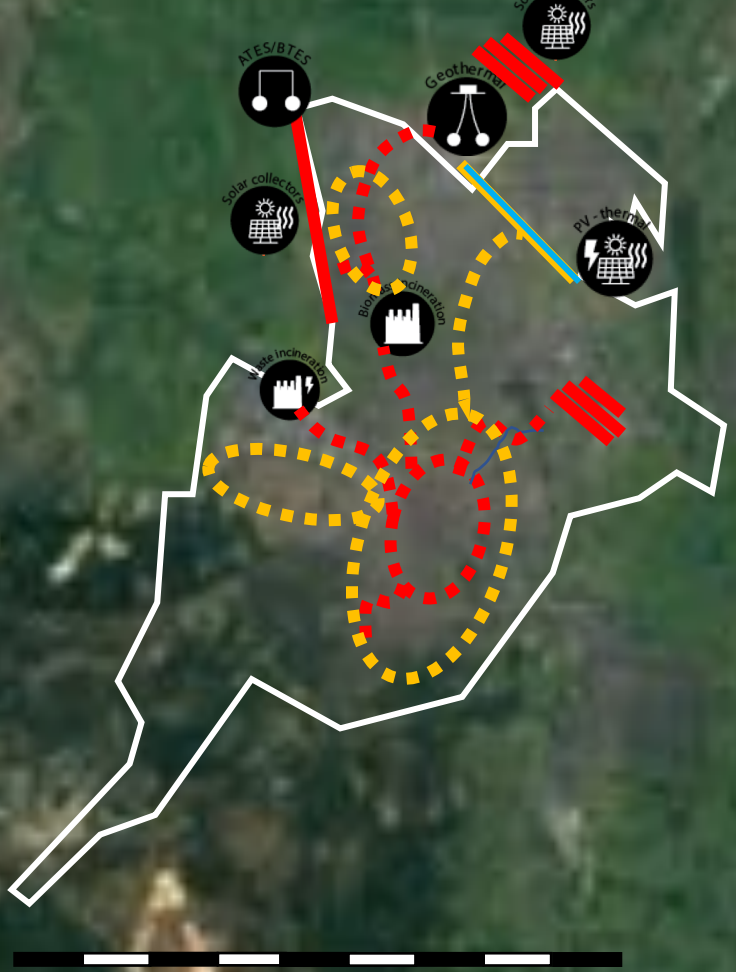


PV- Thermal parks

Install 48 ha of PV-Thermal parks
and connect to the MT heat grid or to individual projects.

along the highway and other roads

15,000 modules/yr

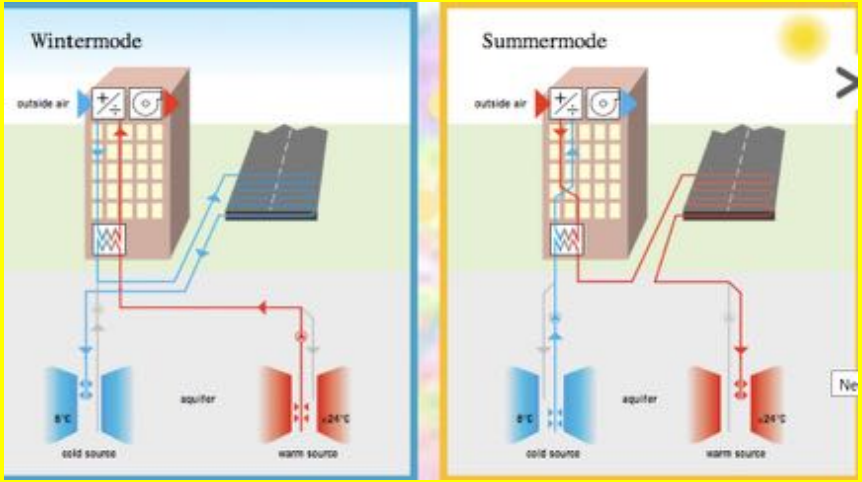


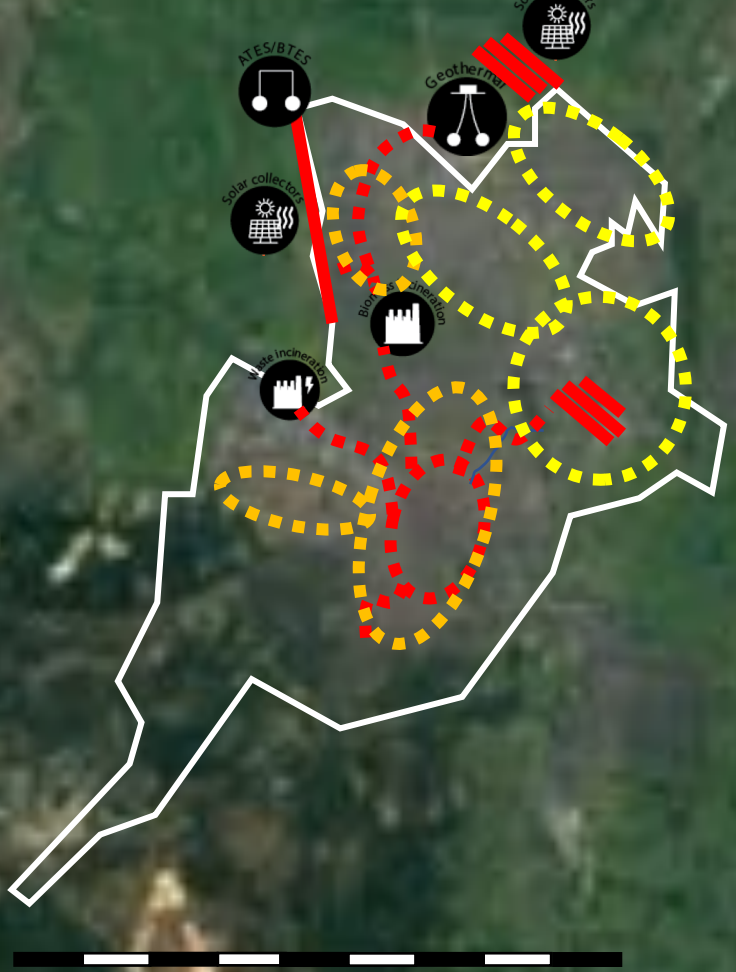
Road Solar Collectors + storage

Solar collectors

Integrate road solar collectors
in 28 ha of asphalt (1.5 ha/yr = 1km)

Facilitate 165 GWh of mid-temp seasonal storage capacity in ATES, BTES or tanks in/below buildings (15 ATES/BTES/yr)

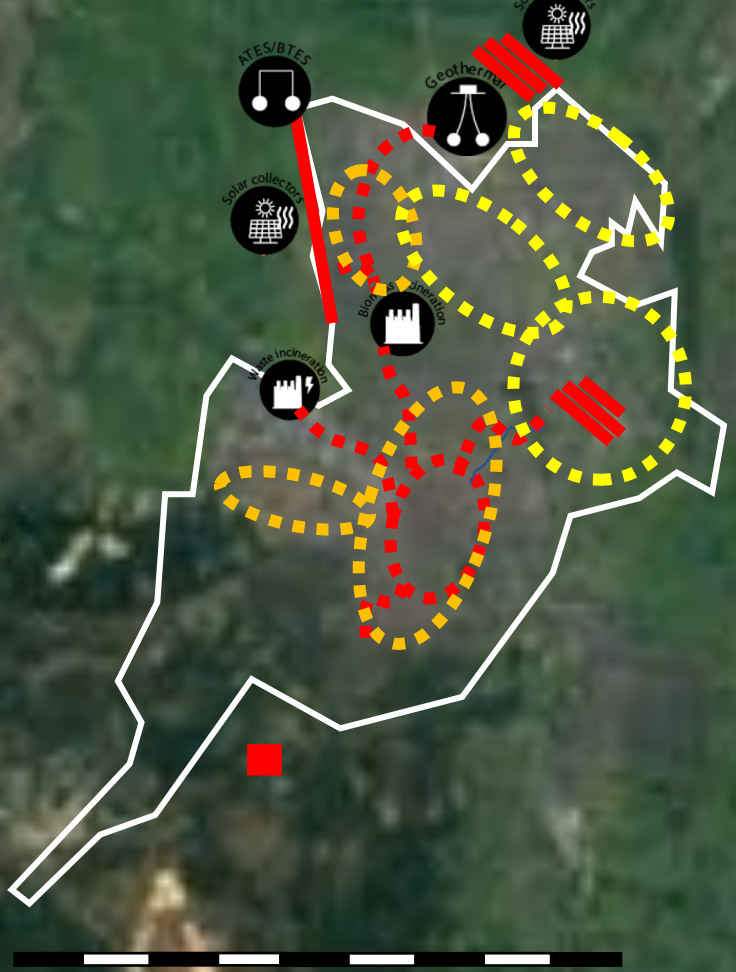




Collective Heating LT

Construct low-temperature heat grids for 15,000 res.eq. connections

connect 750 residential equivalents per year

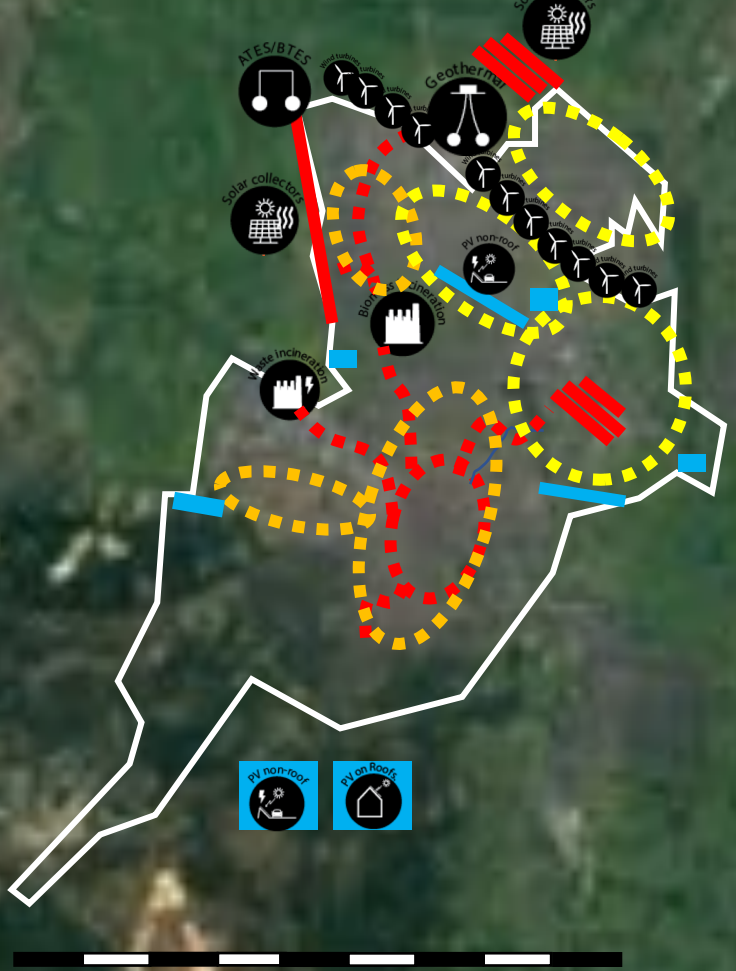


PVT on roofs

Install 48 ha of PV-Thermal modules on roofs

15,000 modules/yr)

connect these to the LT and MT heat grids



Renewable electricity production

Wind turbines

PV on Roofs

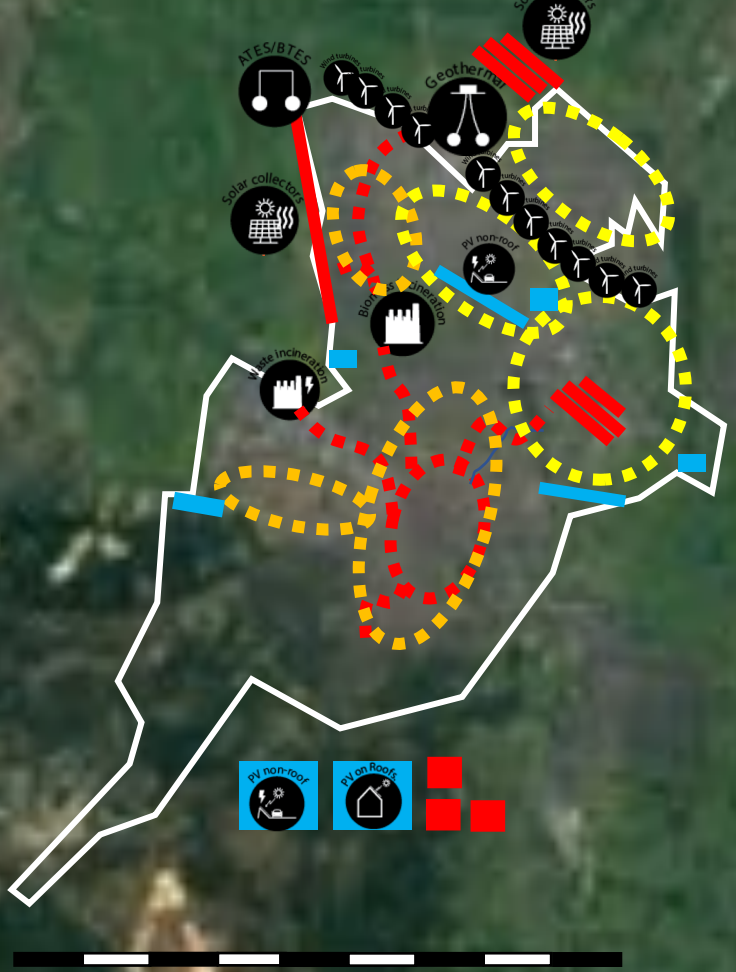
PV non-roof

Install 12x 4MW wind turbines a.s.a.p. along the A1

Install 135 ha op PV modules on roofs

And 135 ha's of PV modules in parks, along roads, railways on noise barriers and above bicycle lanes

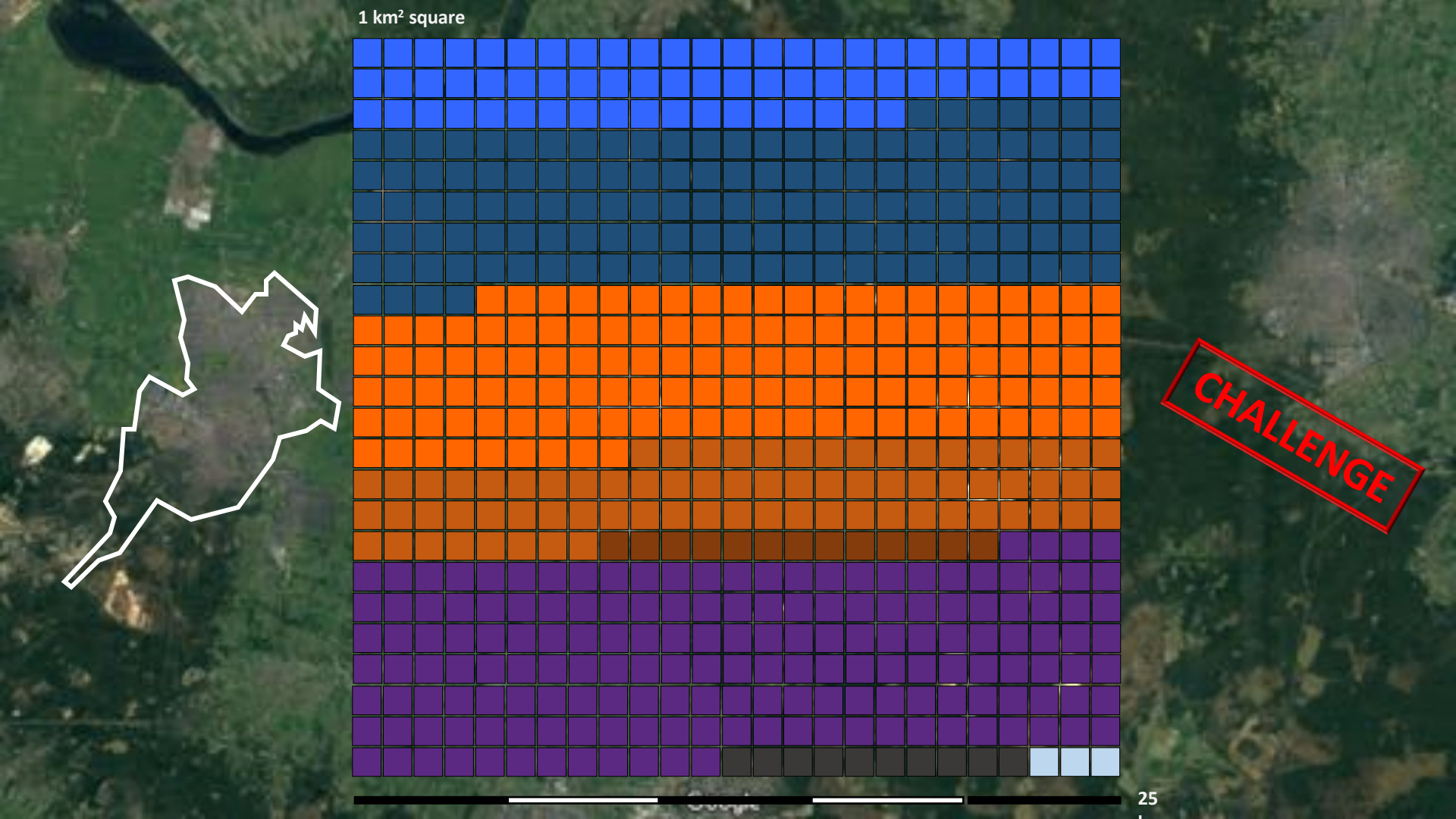
120,000 modules a year (160 per working day)



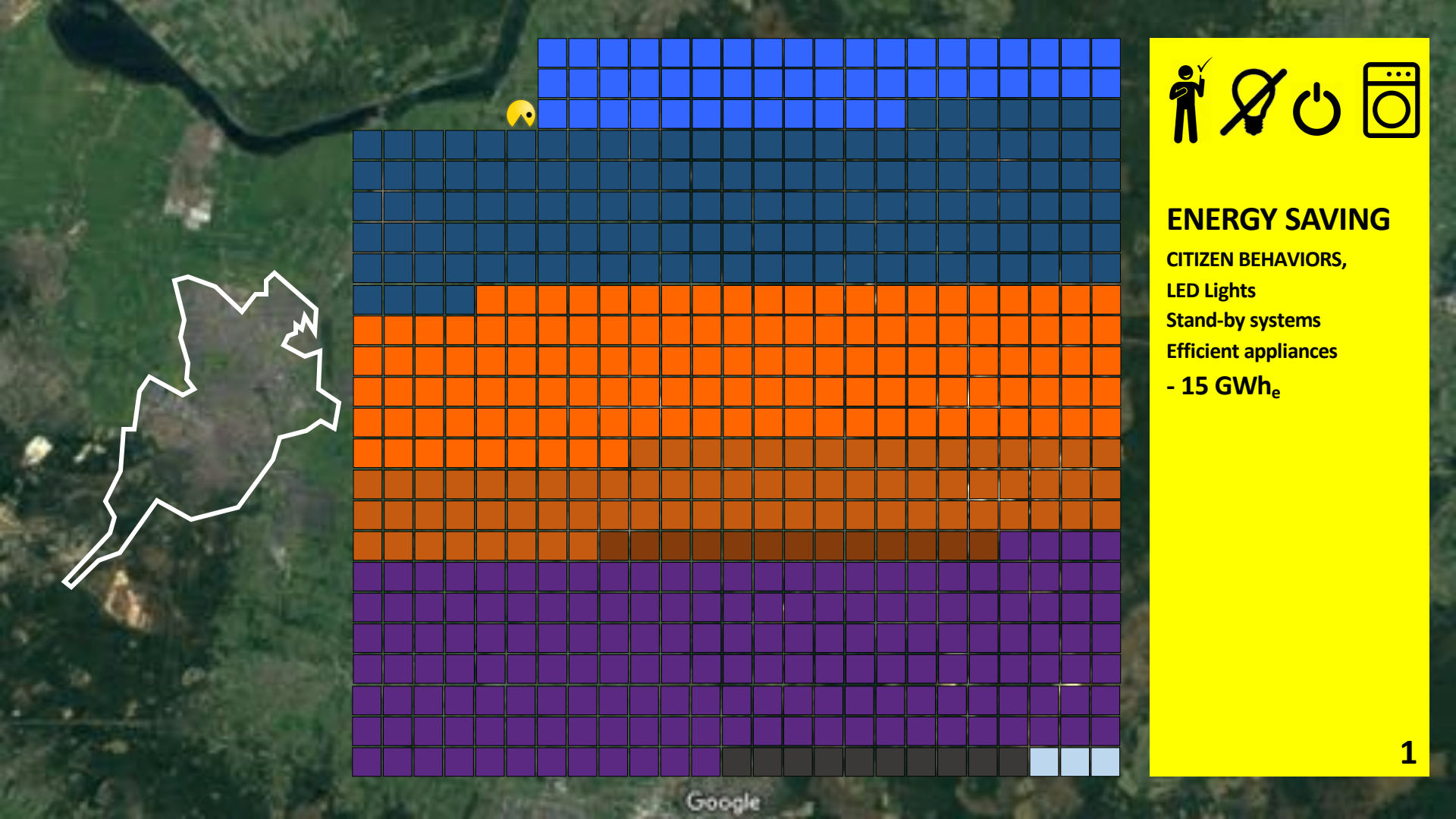
All electric buildings

40,000 res. eq. will individually become all electric with the help of heat pumps and the described energy renovations and installed PV

150,000 modules a year = 600 per day (1 for 250 persons)


1 km² square
CHALLENGE
25


I'M
CARBON
PACMAN
NICE TO MEET YOU!
Google



ENERGY SAVING

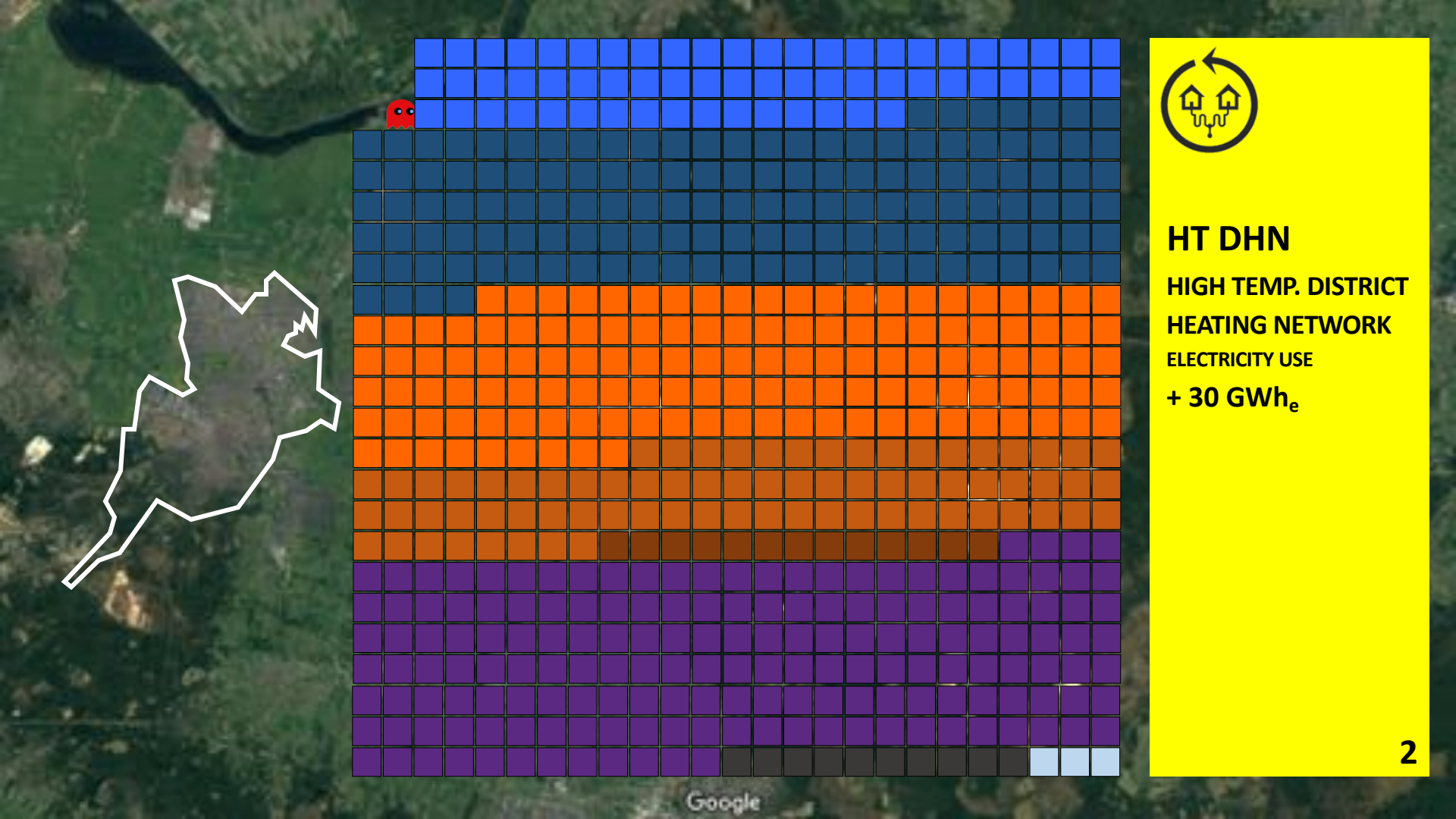
CITIZEN BEHAVIORS,

LED Lights

Stand-by systems

Efficient appliances

- 15 GWh_e

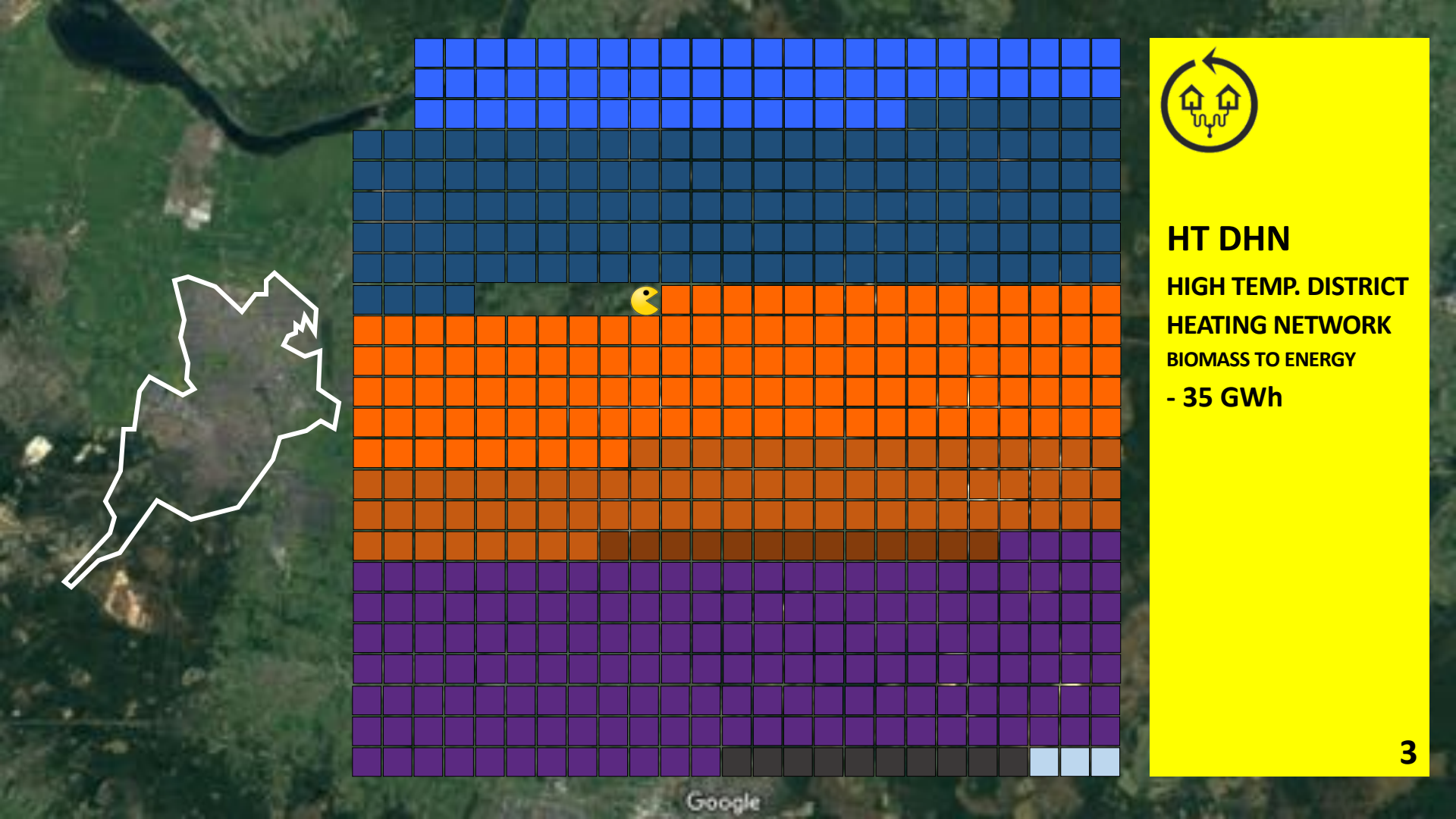


HT DHN

HIGH TEMP. DISTRICT HEATING NETWORK

ELECTRICITY USE

+ 30 GWh_e

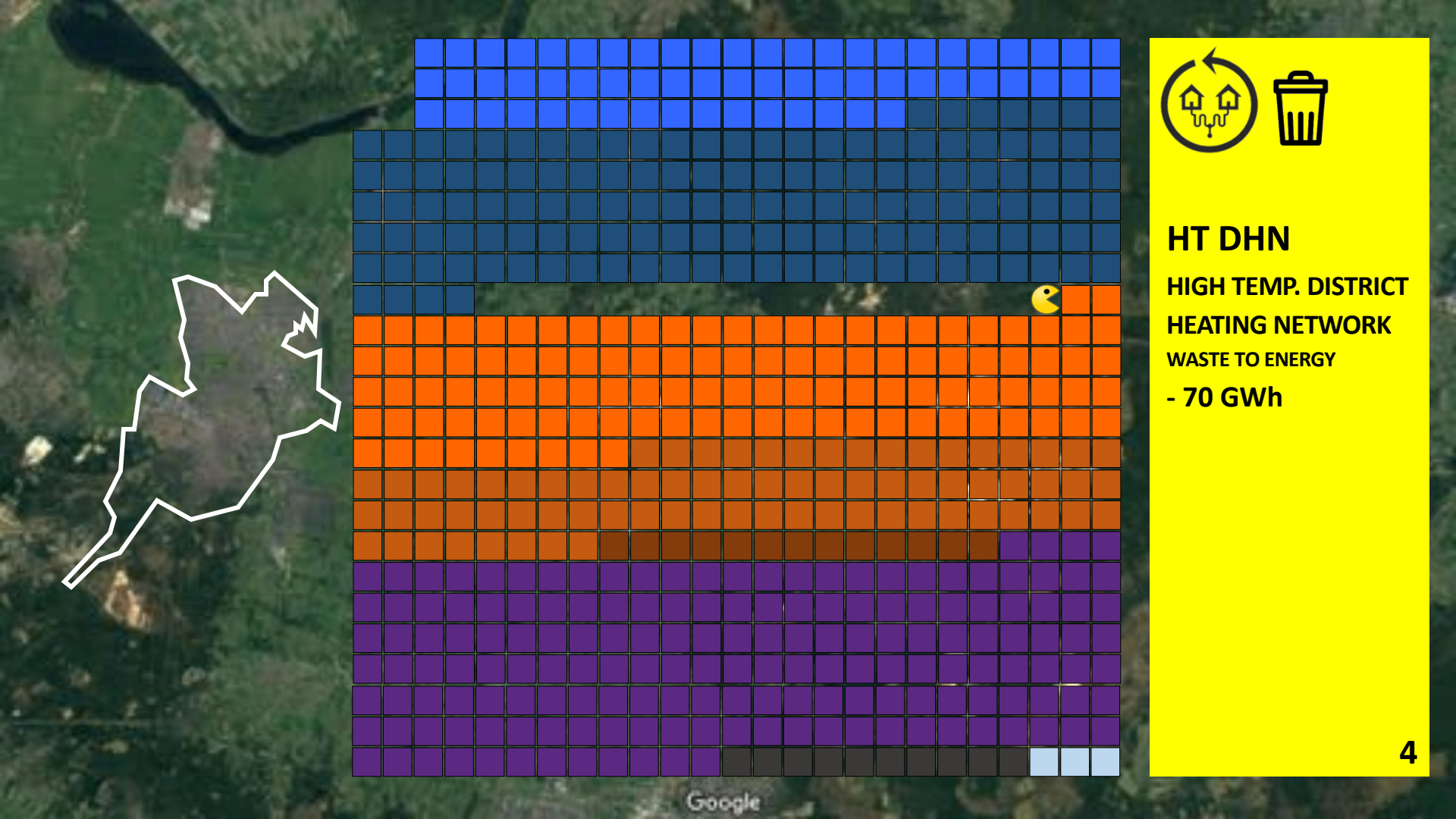


HT DHN

HIGH TEMP. DISTRICT HEATING NETWORK

BIOMASS TO ENERGY

- 35 GWh

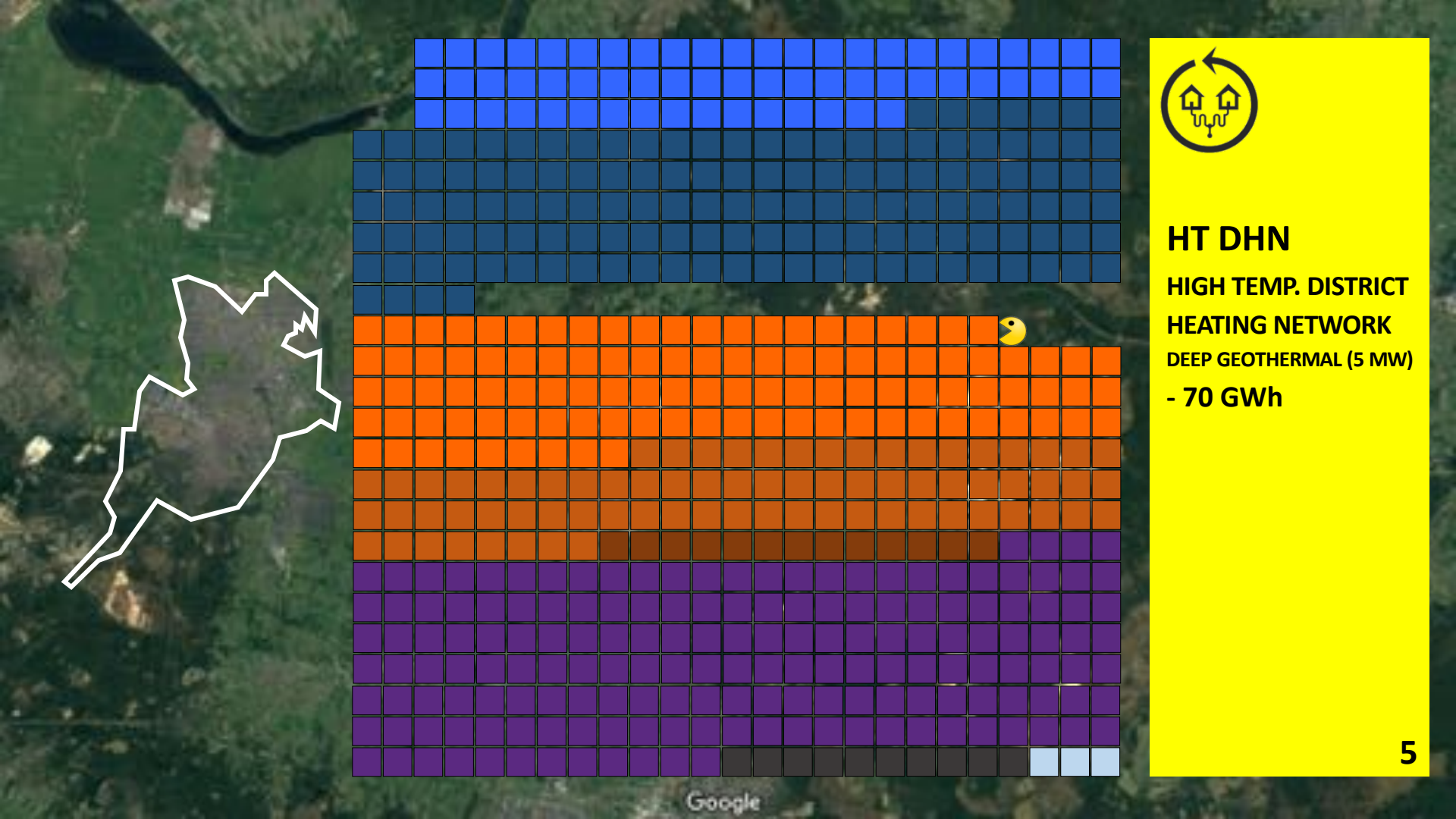


HT DHN

HIGH TEMP. DISTRICT HEATING NETWORK

WASTE TO ENERGY

- 70 GWh

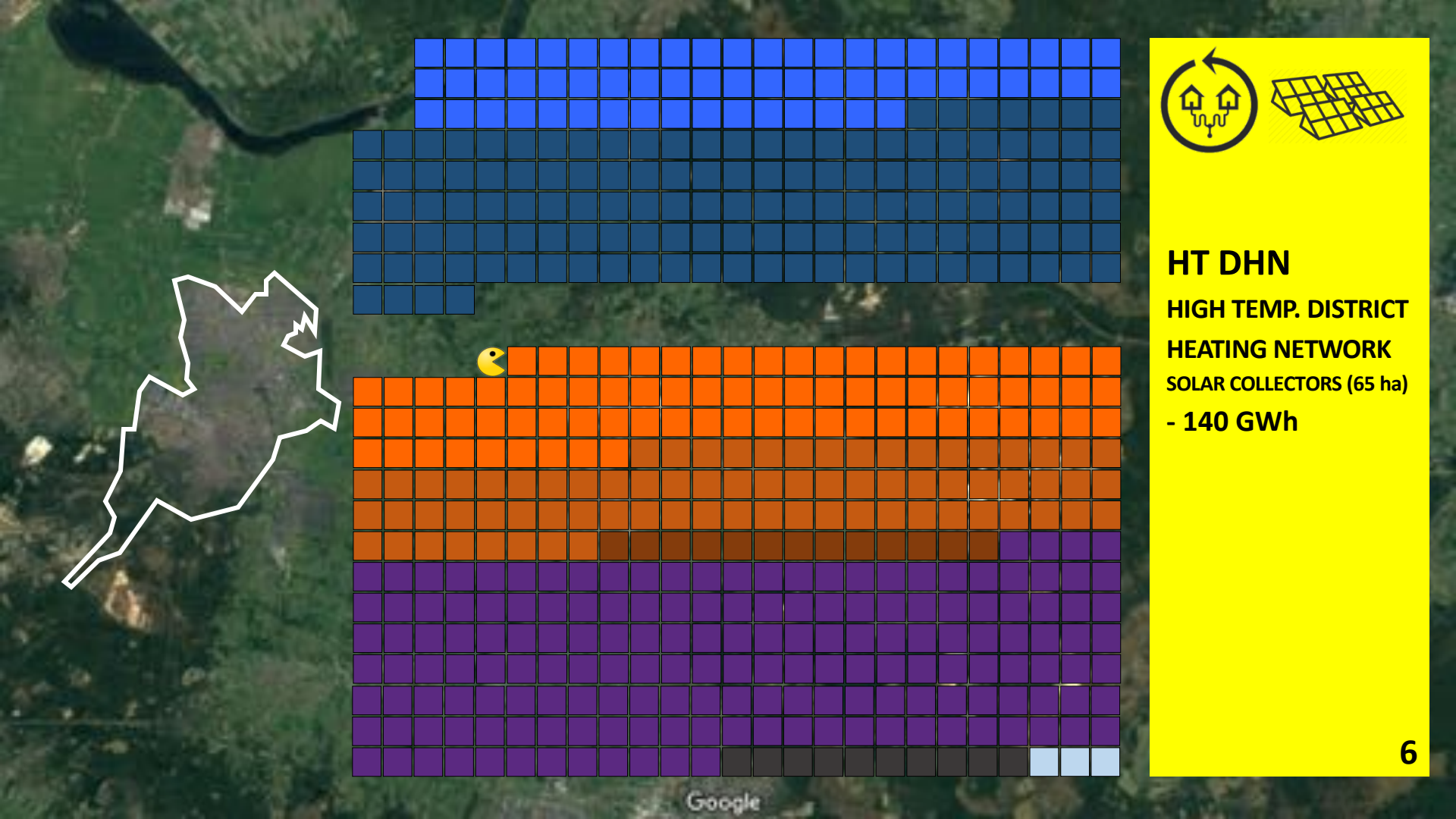


HT DHN

HIGH TEMP. DISTRICT HEATING NETWORK

DEEP GEOTHERMAL (5 MW)

- 70 GWh

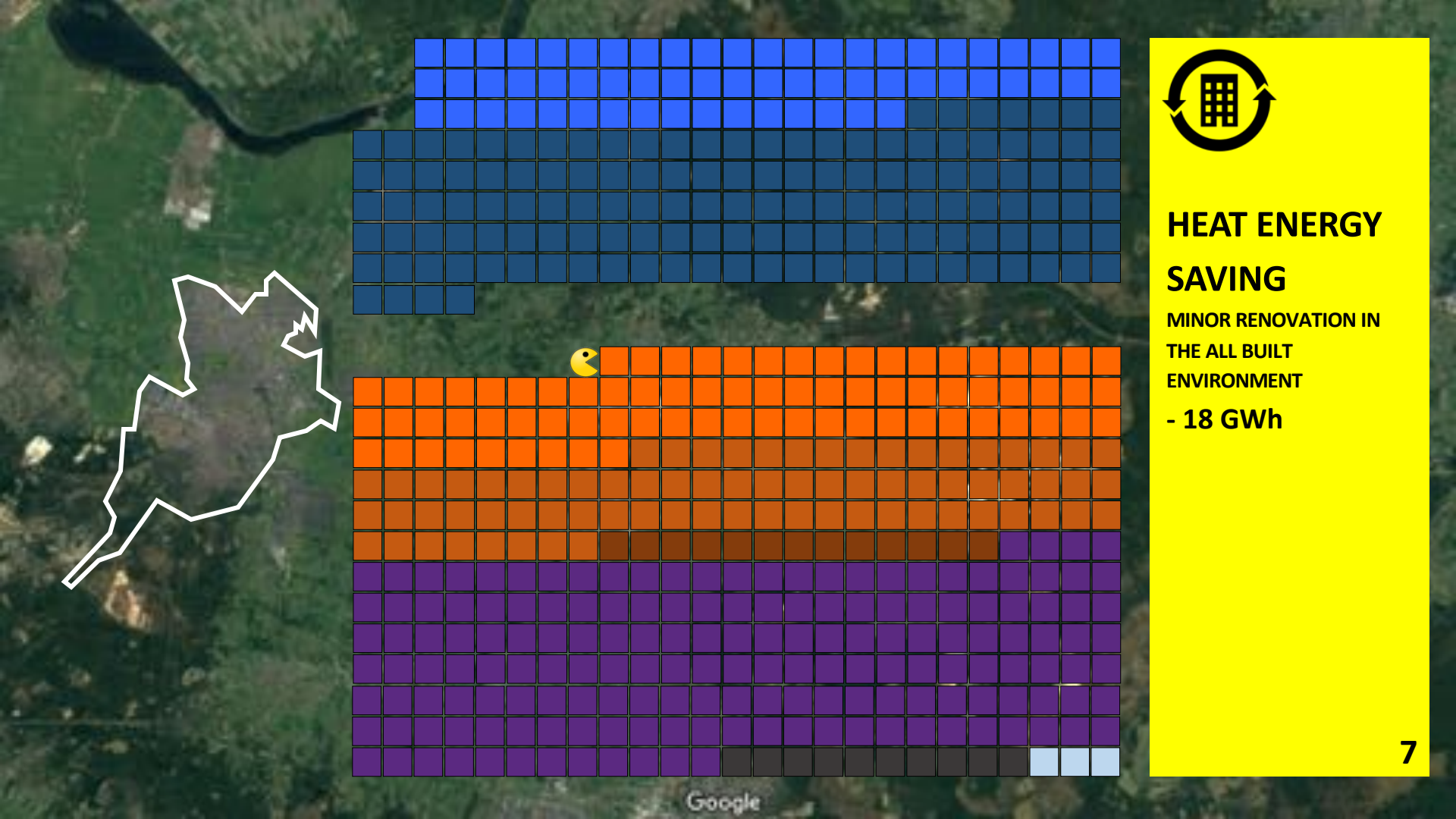


HT DHN

HIGH TEMP. DISTRICT HEATING NETWORK

SOLAR COLLECTORS (65 ha)

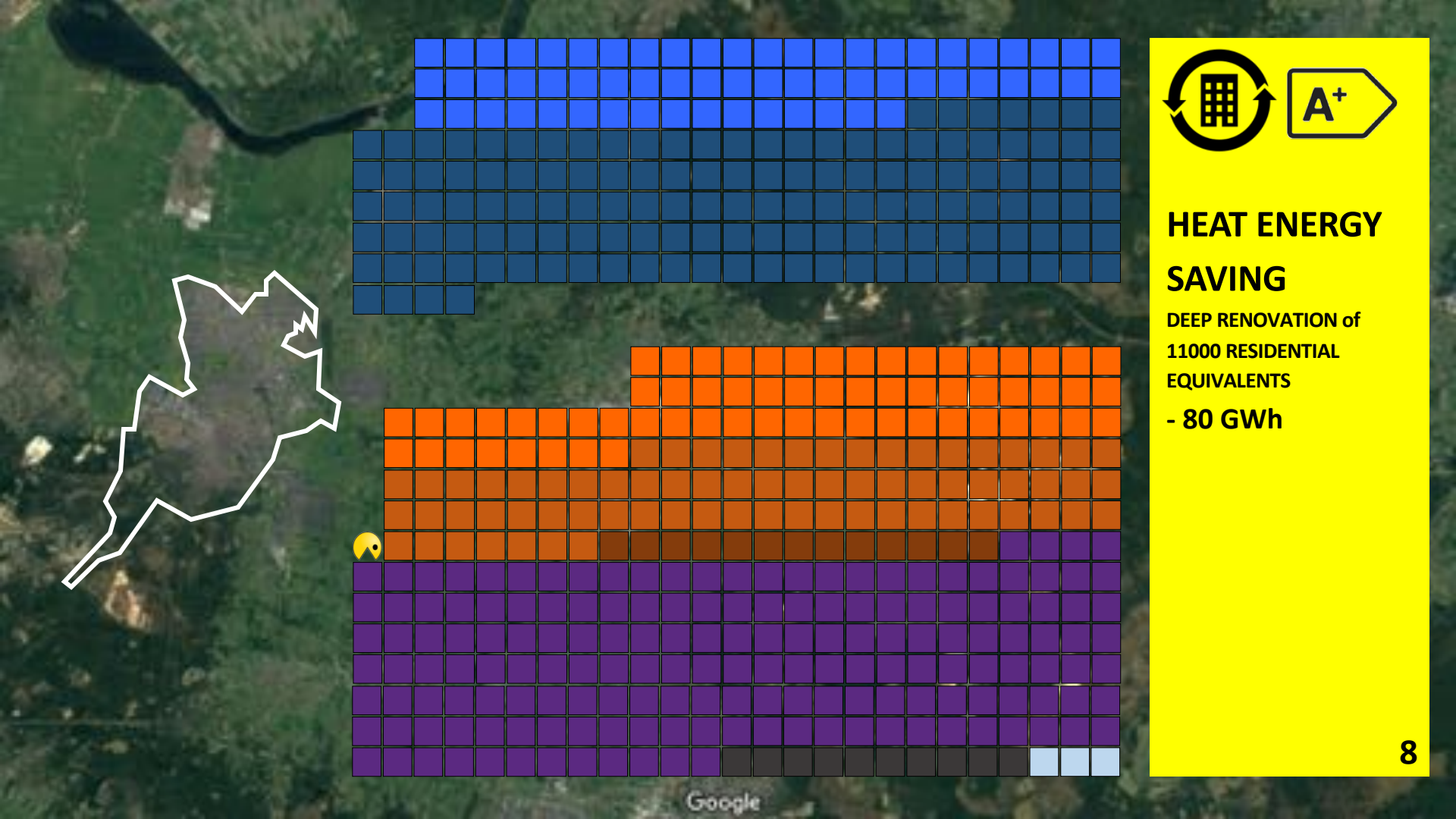
- 140 GWh

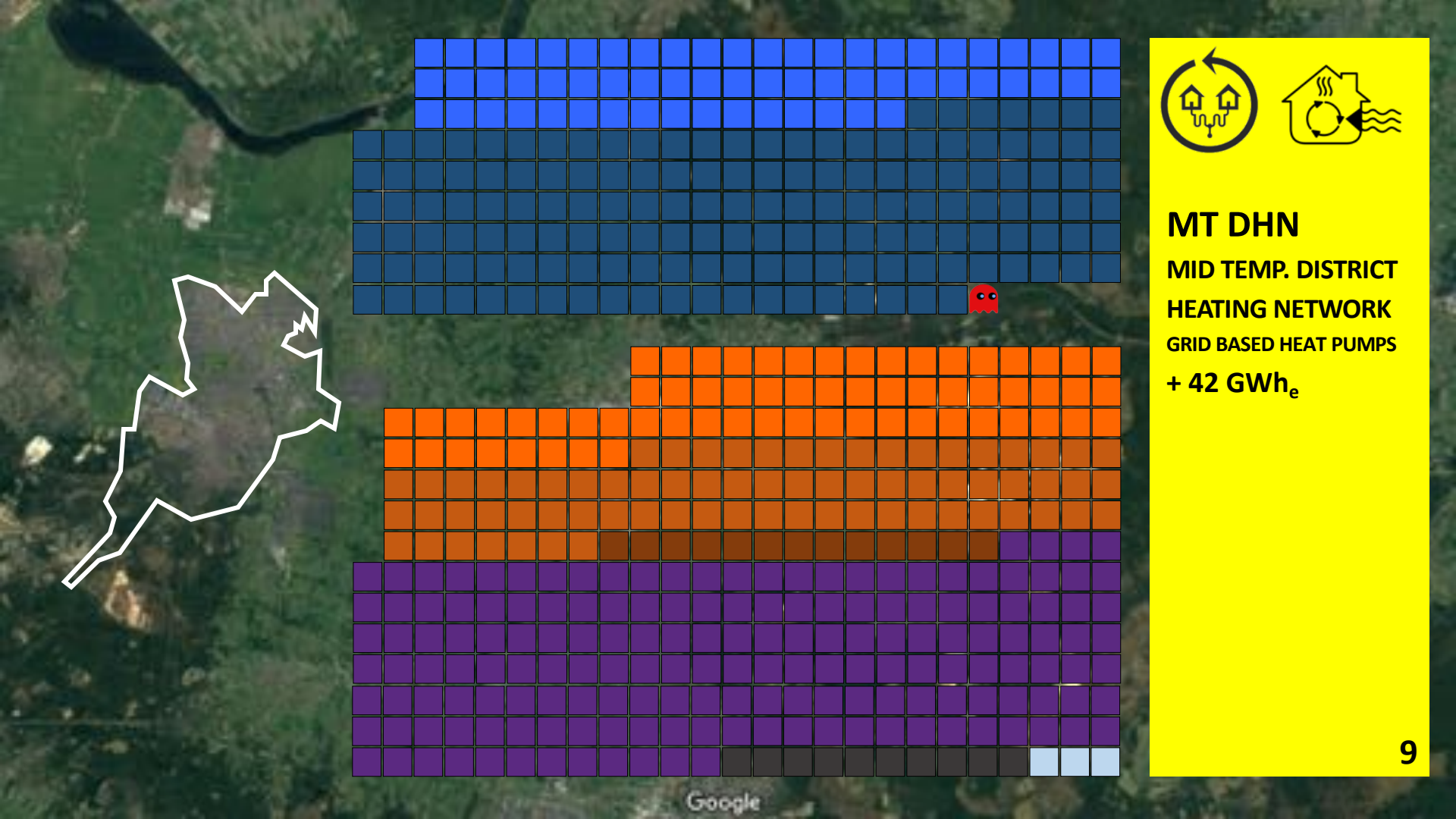


HEAT ENERGY SAVING

MINOR RENOVATION IN THE ALL BUILT ENVIRONMENT

- 18 GWh


A+
HEAT ENERGY SAVING
DEEP RENOVATION of 11000 RESIDENTIAL EQUIVALENTS
- 80 GWh
Google

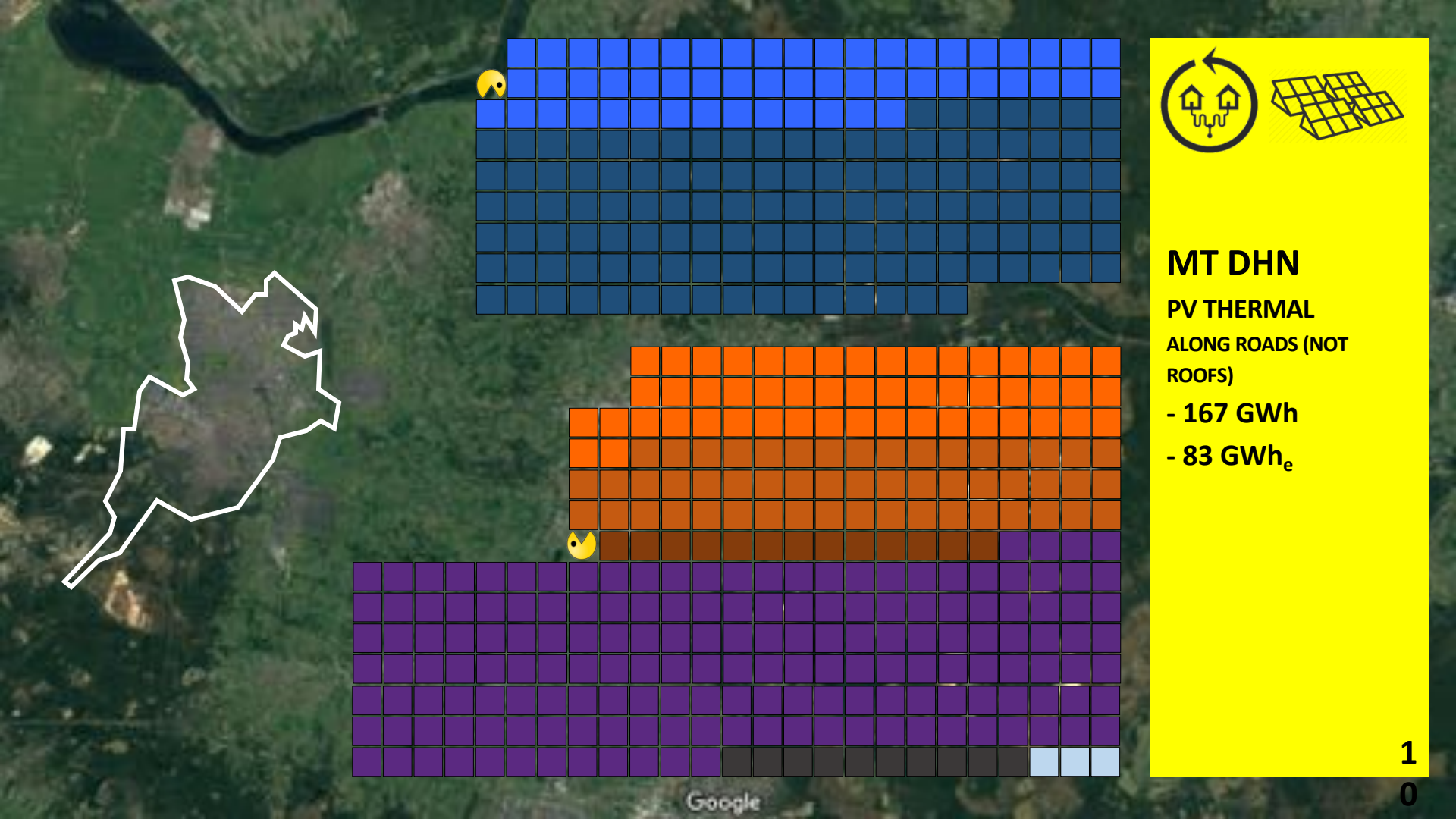


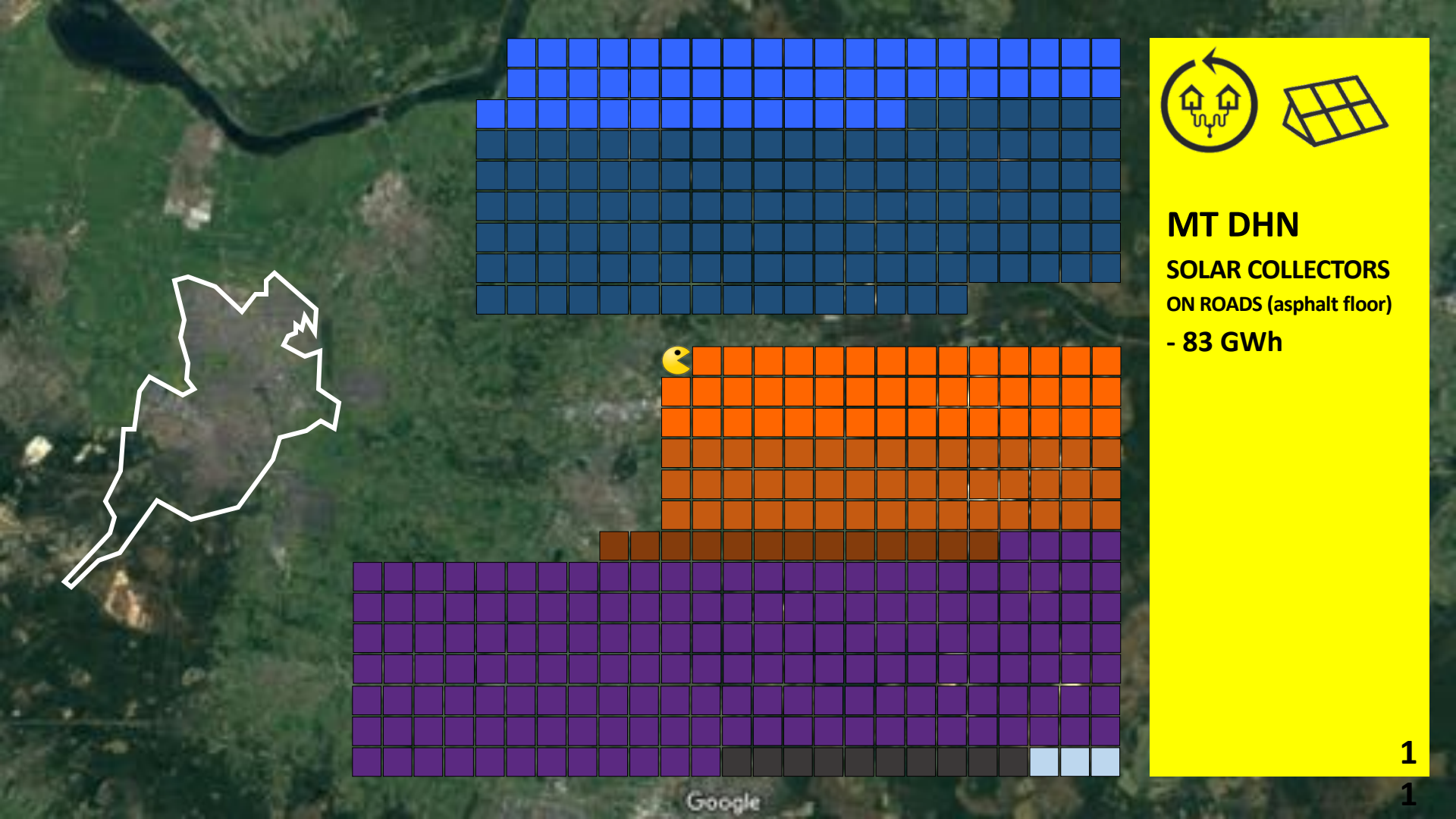
MT DHN

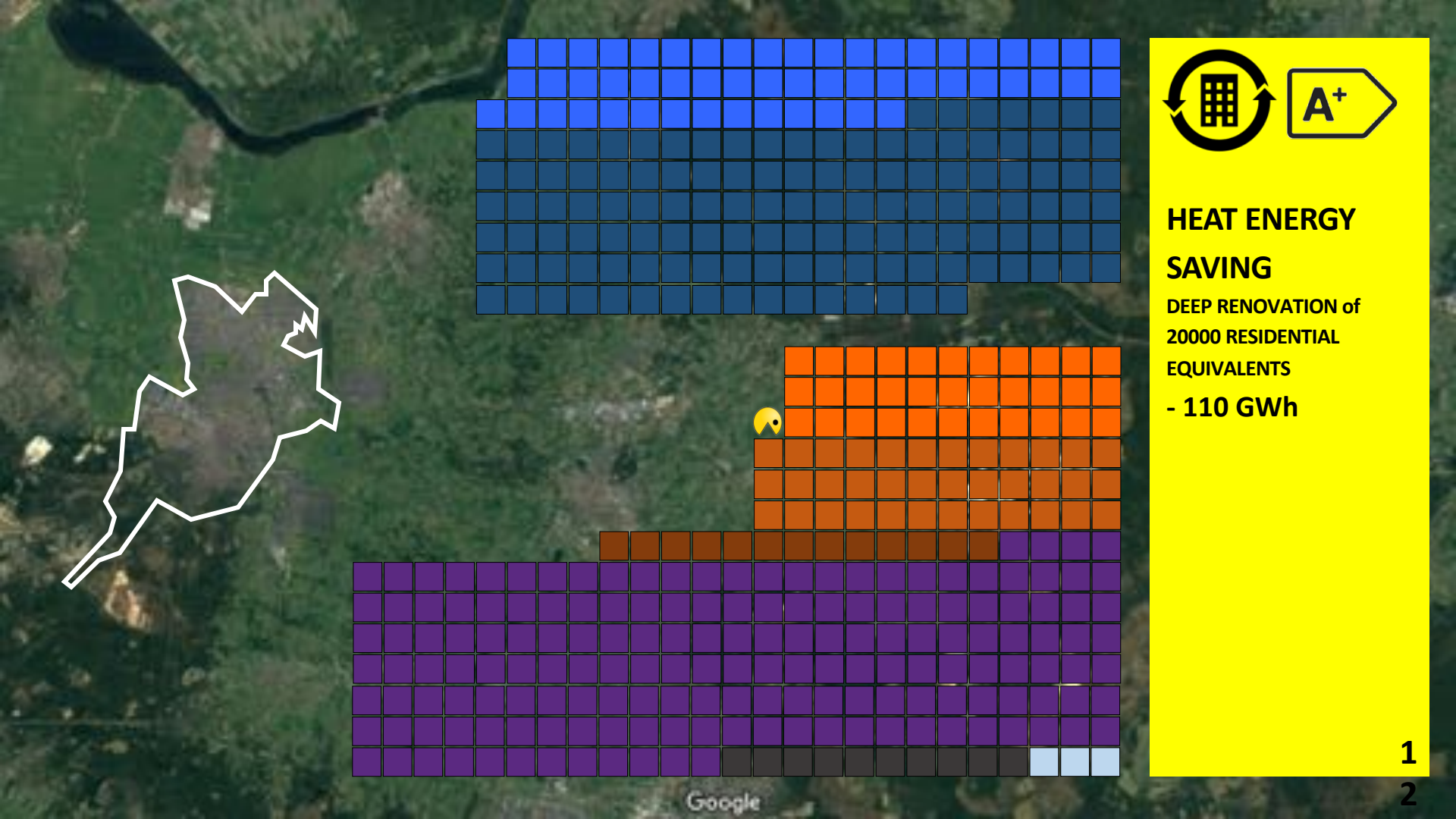
MID TEMP. DISTRICT HEATING NETWORK

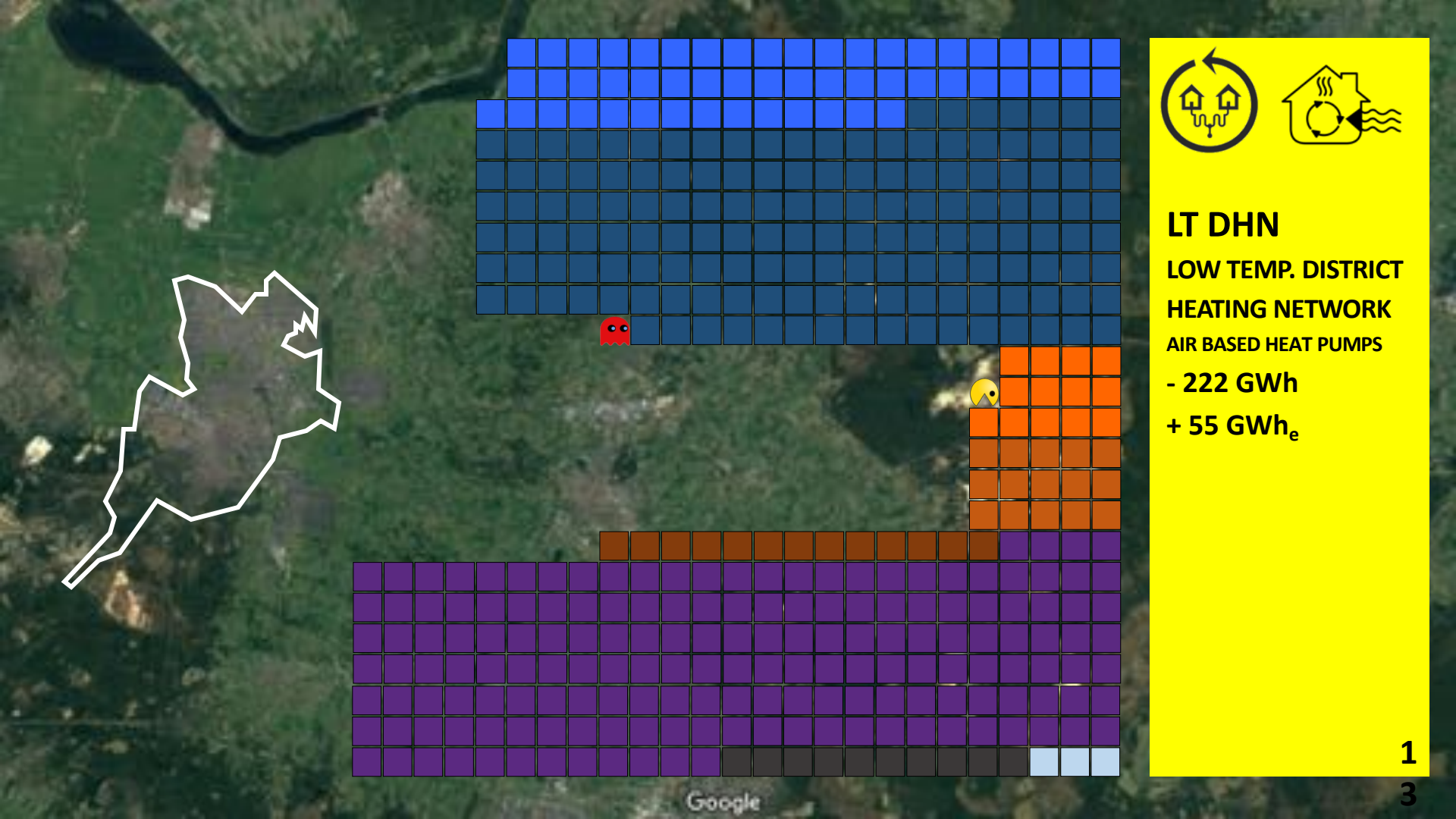
GRID BASED HEAT PUMPS

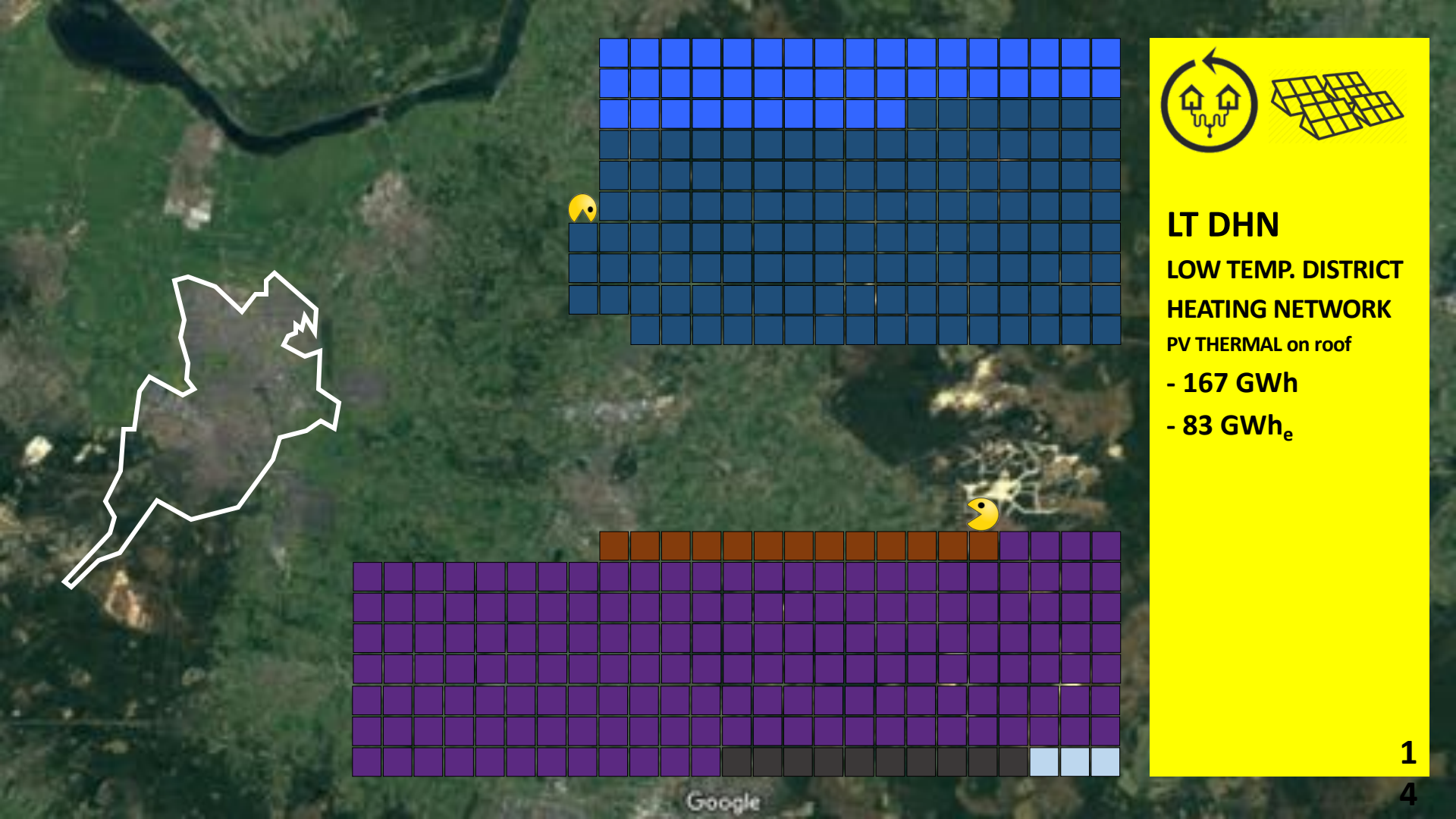
+ 42 GWh_e


MT DHN
PV THERMAL
ALONG ROADS (NOT ROOFS)
- 167 GWh
- 83 GWh$_e$
Google


MT DHN
SOLAR COLLECTORS
ON ROADS (asphalt floor)
- 83 GWh
1
Google


A+
HEAT ENERGY
SAVING
DEEP RENOVATION of
20000 RESIDENTIAL
EQUIVALENTS
- 110 GWh
Google


LT DHN
LOW TEMP. DISTRICT
HEATING NETWORK
AIR BASED HEAT PUMPS
- 222 GWh
+ 55 GWh$_e$
1
3
Google



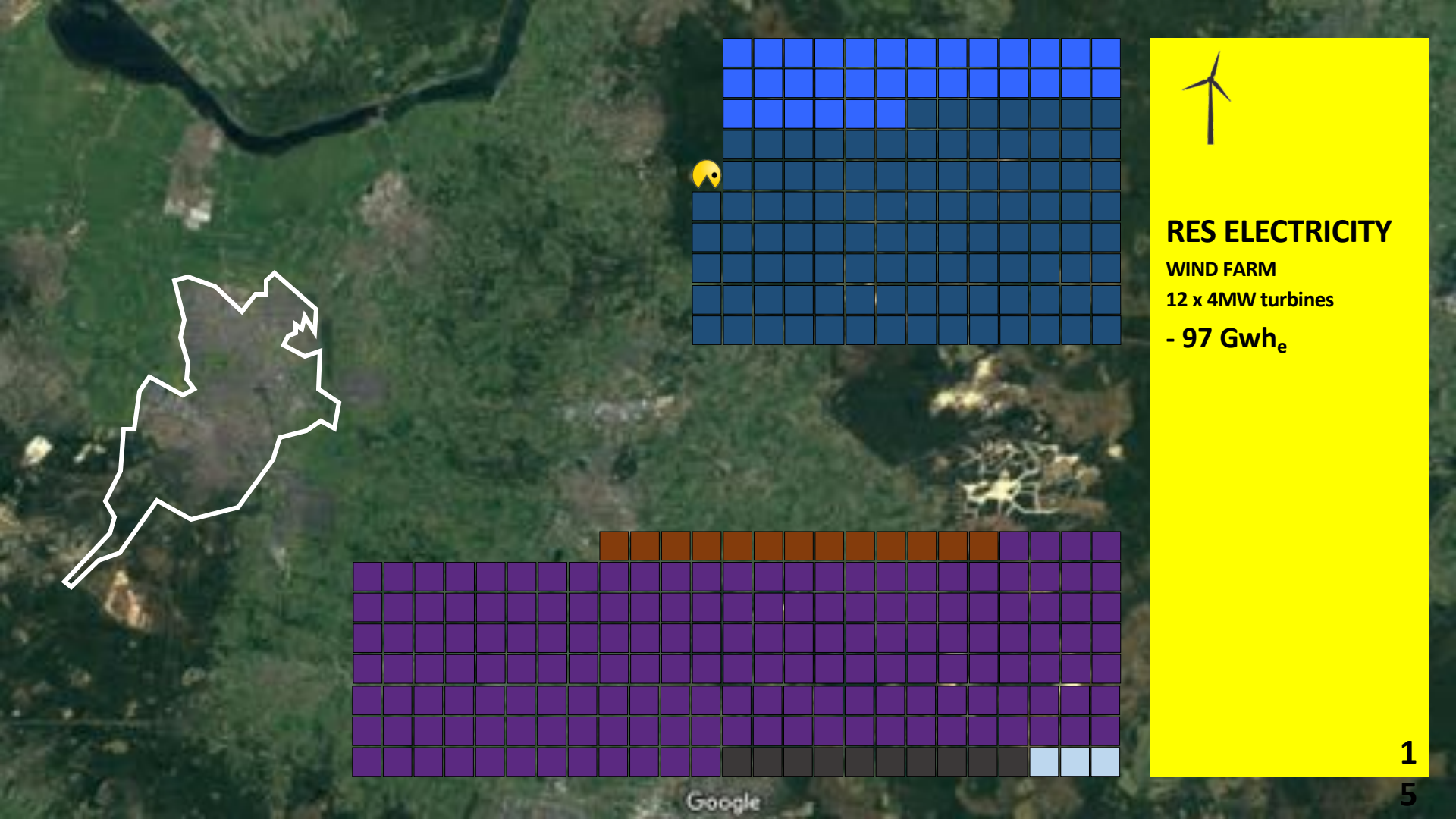
LT DHN

LOW TEMP. DISTRICT HEATING NETWORK

PV THERMAL on roof

- **167 GWh**
- **83 GWh_e**

1

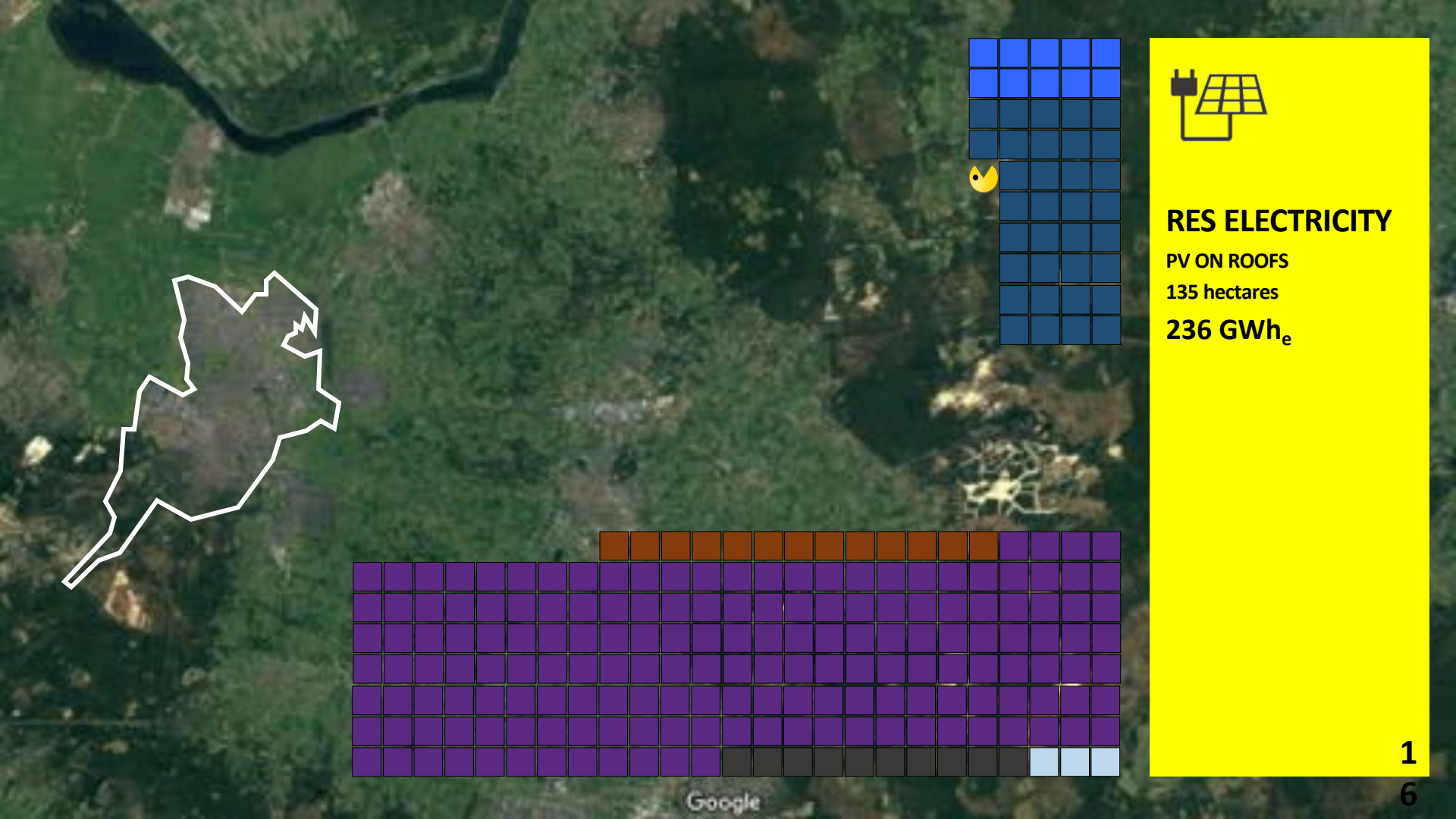


RES ELECTRICITY

WIND FARM

12 x 4MW turbines

- 97 Gwh_e



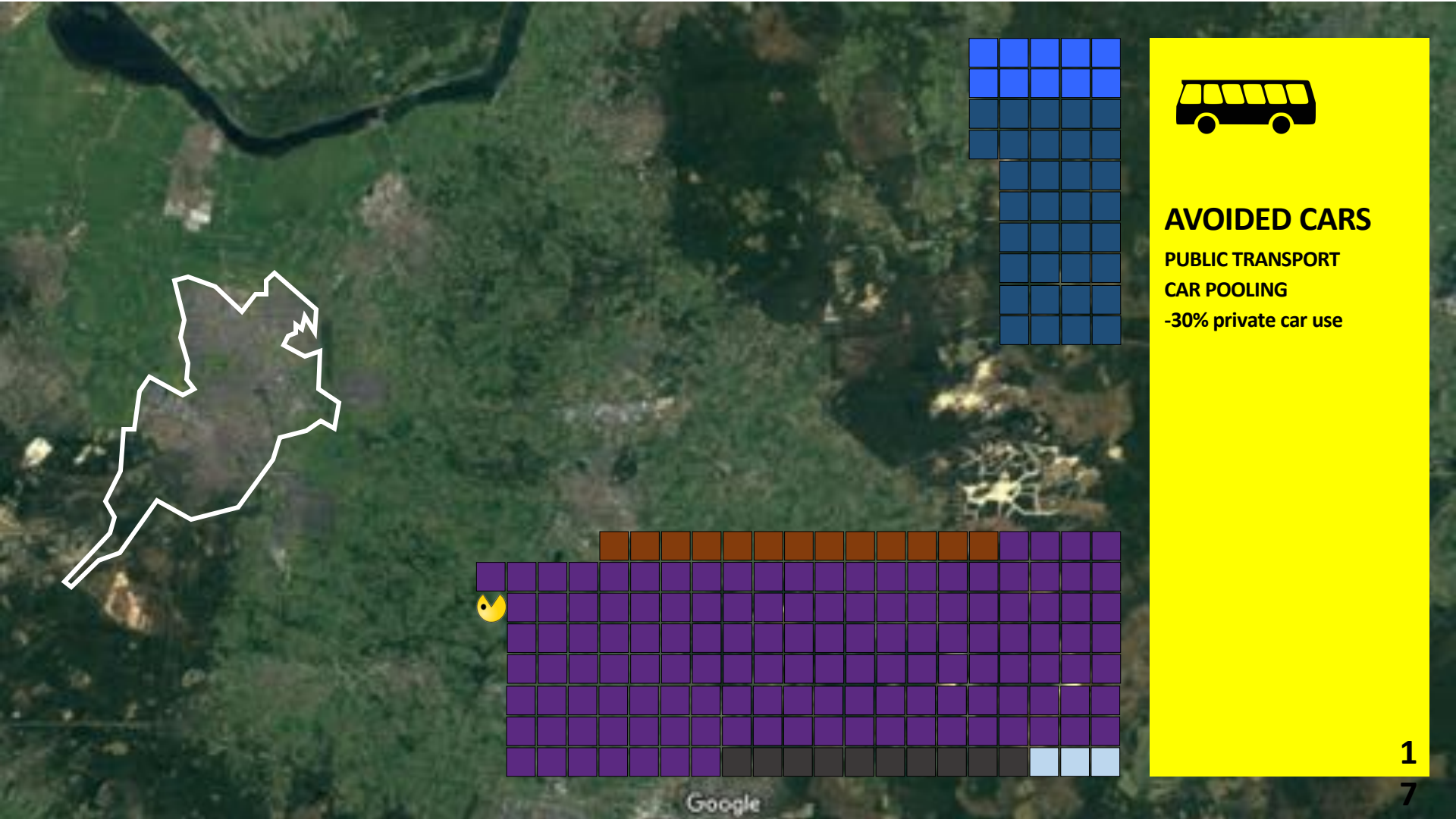
RES ELECTRICITY

PV ON ROOFS

135 hectares

236 GWh_e

1



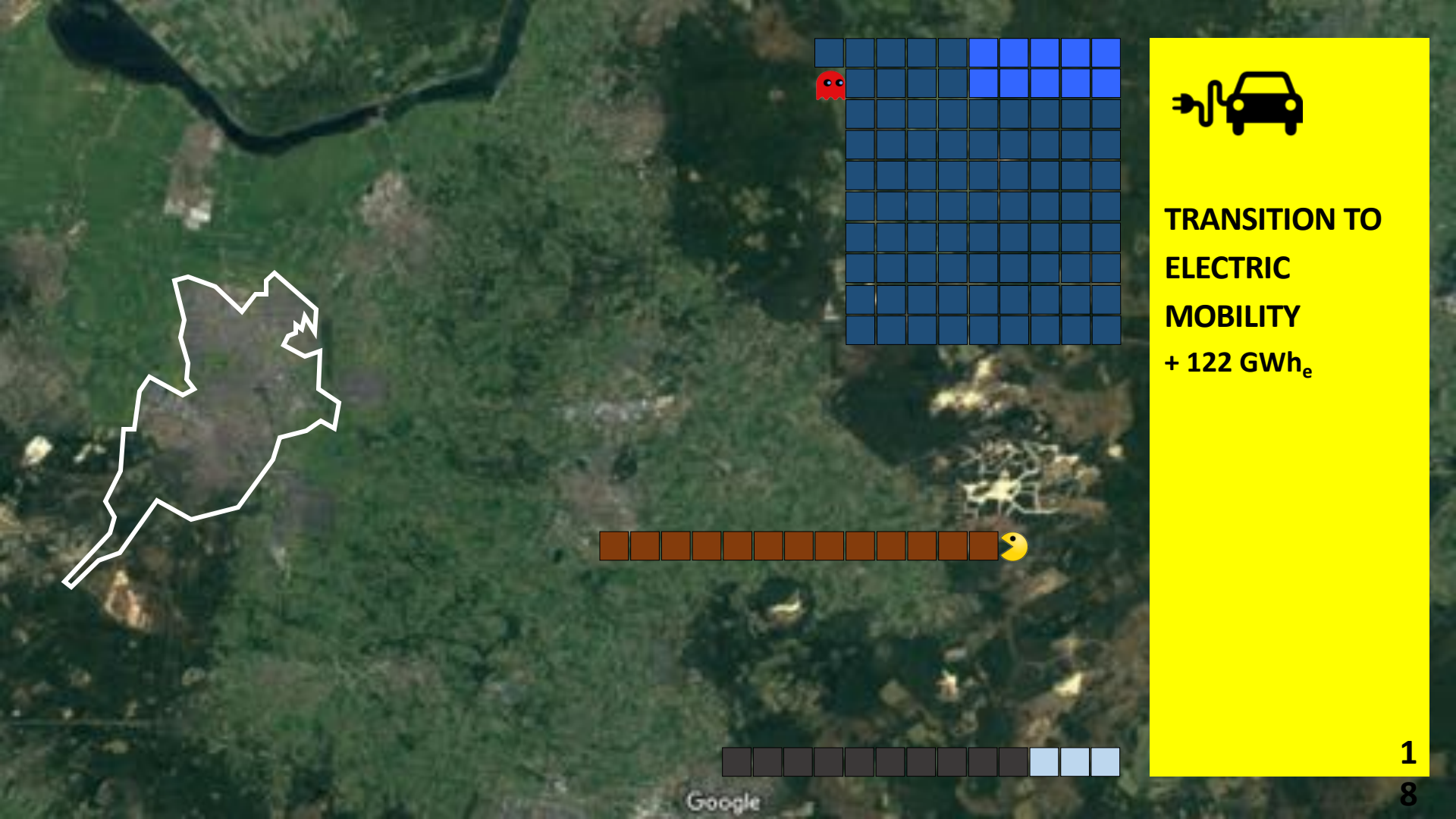
AVOIDED CARS

PUBLIC TRANSPORT

CAR POOLING

-30% private car use

1



TRANSITION TO ELECTRIC MOBILITY

+ 122 GWh_e

RES ELECTRICITY

Shared PV in parks

135 hectares

236 GWh_e

RESPONSIBLE PRODUCTION

CIRCULAR ECONOMY

LCA monitoring

Energy efficiency

WASTE & WATER MANAGEMENT

WASTE REDUCTION

WATER SAVING

URBAN

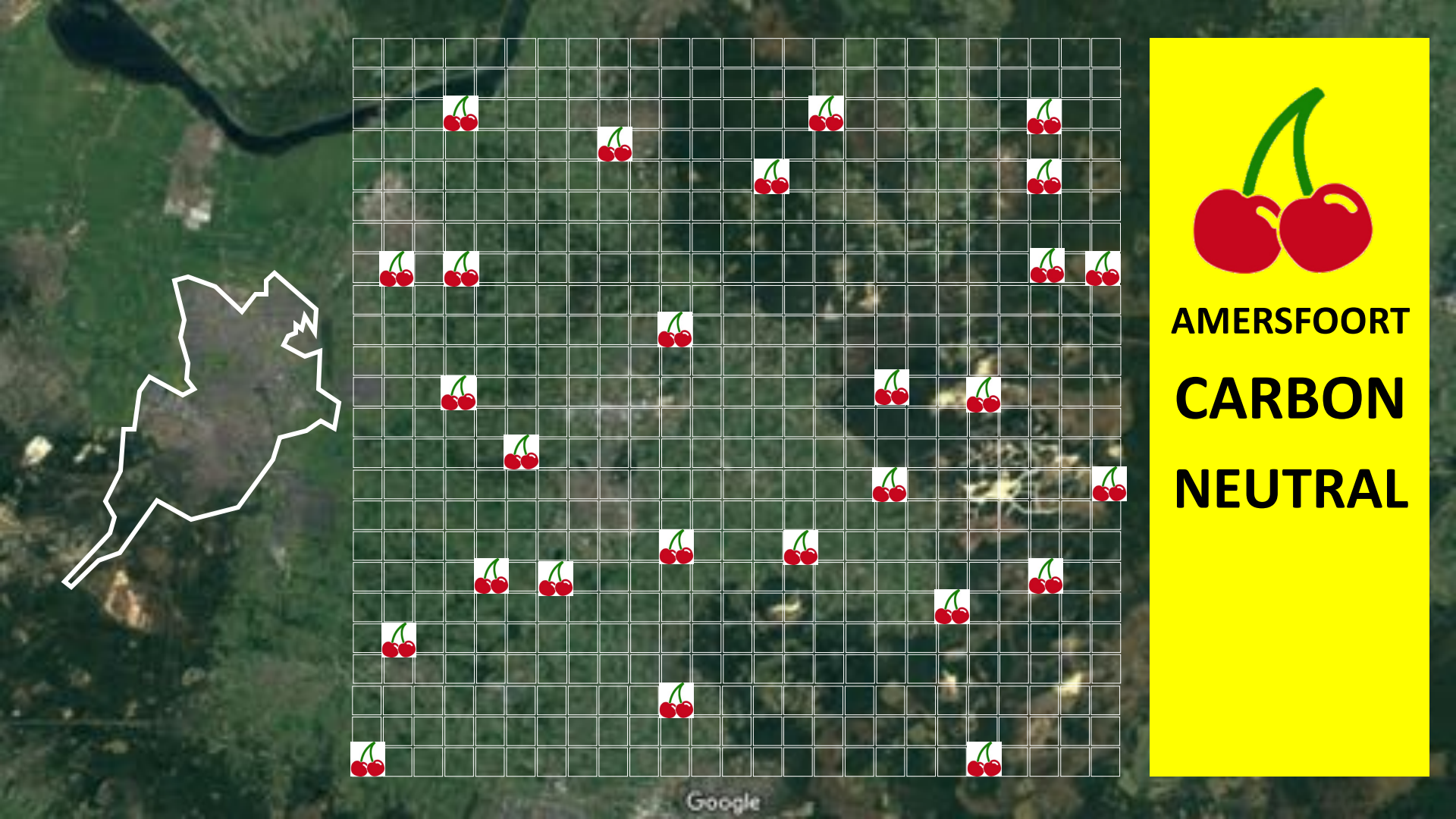
FORESTRY

CARBON UPTAKE

1500 hectares forest

2


AMERSFOORT
CARBON
NEUTRAL
Google


AMERSFOORT
CARBON
NEUTRAL
Google


11 SUSTAINABLE CITIES AND COMMUNITIES
10 REDUCED INEQUALITIES
15 LIFE ON LAND
13 CLIMATE ACTION
17 PARTNERSHIPS FOR THE GOALS
4 QUALITY EDUCATION
7 AFFORDABLE AND CLEAN ENERGY
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
1 NO POVERTY
6 CLEAN WATER AND SANITATION
8 DECENT WORK AND ECONOMIC GROWTH
2 ZERO HUNGER
14 LIFE BELOW WATER
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
5 GENDER EQUALITY
AMERSFOORT
CARBON
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City-zen Amersfoort Roadshow

Web: https:// www.cityzen-smartcity.eu/nl/home-nl/

@CityzenRoadshow

@CityzenRoadshow

cityzenroadshow

Roadshow Contacts:
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European Commission

CITY-zen New urban energy ROADSHOW

Greg Keeffe CityZEN Strategy Binnenstad

QUEEN'S UNIVERSITY BELFAST

Greg Keeffe
Professor of
Architecture + Urbanism

Head of School,
Natural and
Built Environment

CITY-zen
New urban energy
ROADSHOW

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: City team

Queens University Belfast

Greg Keeffe	Professor of Architecture + Urbanism
Dr Andy Jenkins.	Research Fellow

TU Delft

Siebe Boersma	Research Fellow
Javier Montemayor	Masters Student

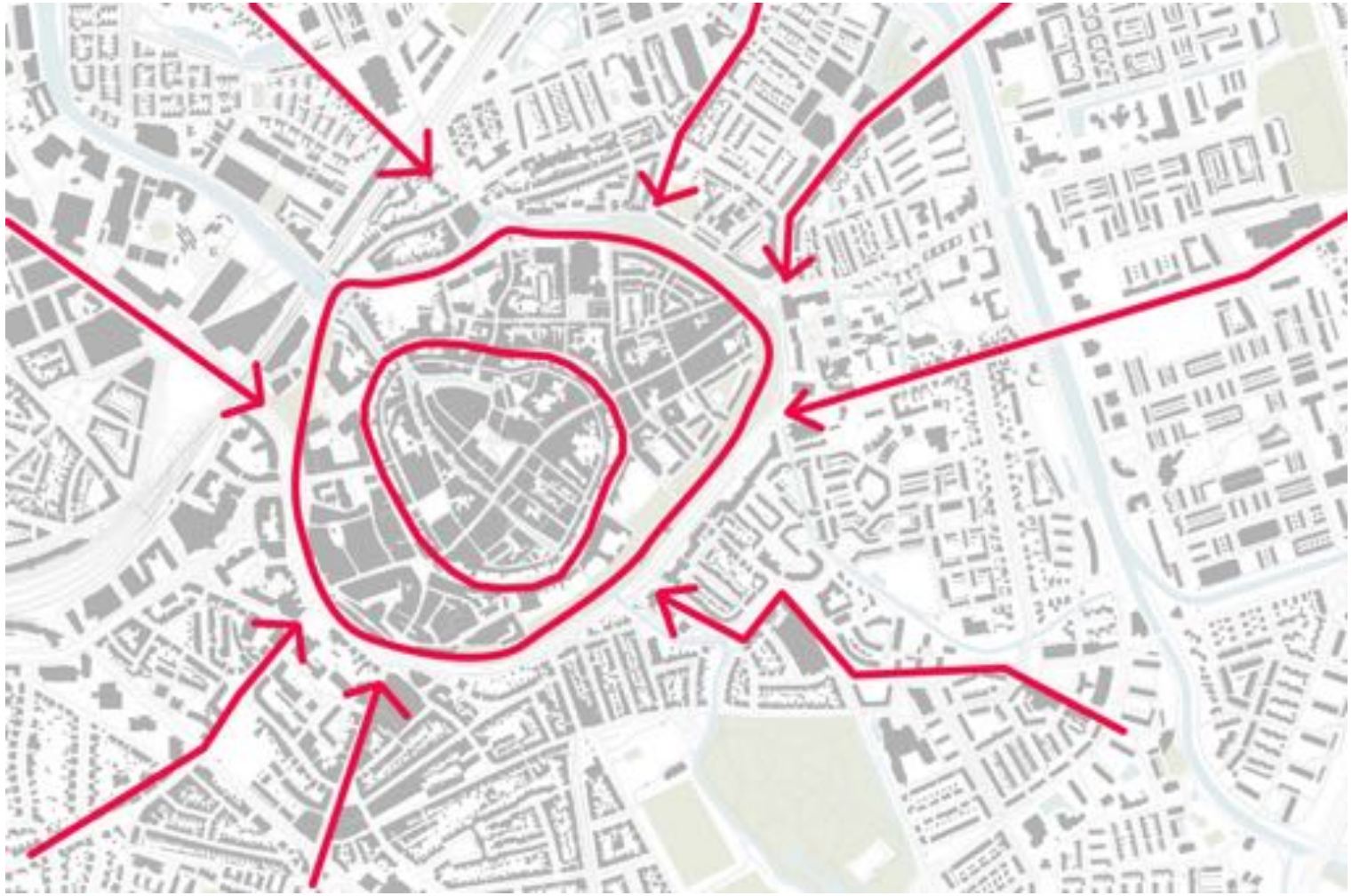
Think E

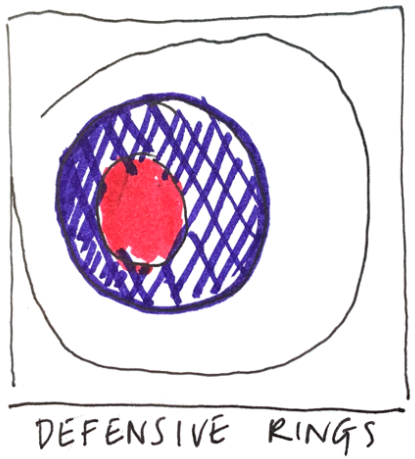
Anneleen Vanderlinden

Achille Hannoset

CITY-zen New urban energy ROADSHOW

Urban Design: Macro Context: city form

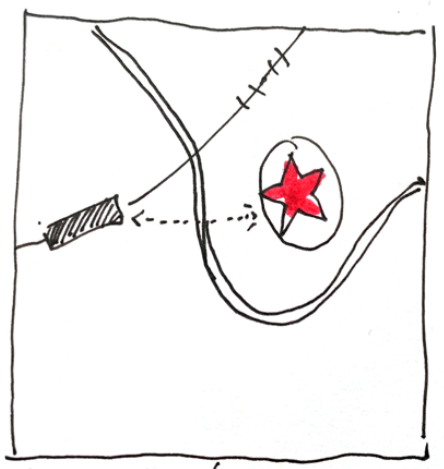


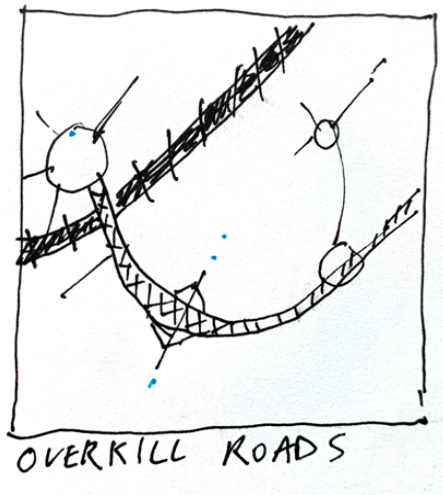


Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: Macro Context





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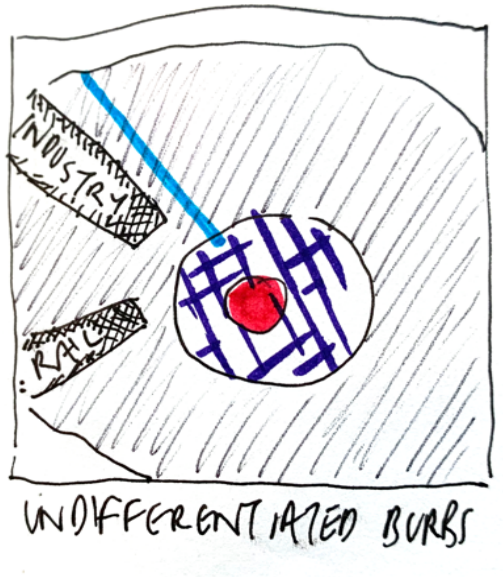
Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: Macro Context

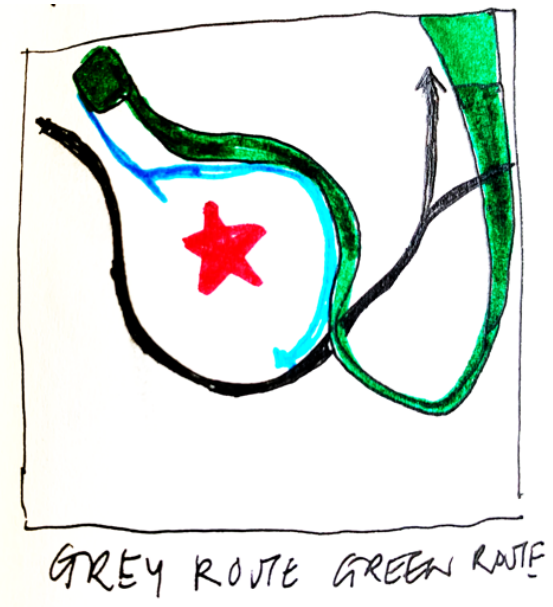


Undifferentiated suburbs

Low density

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Urban Design: Macro Context

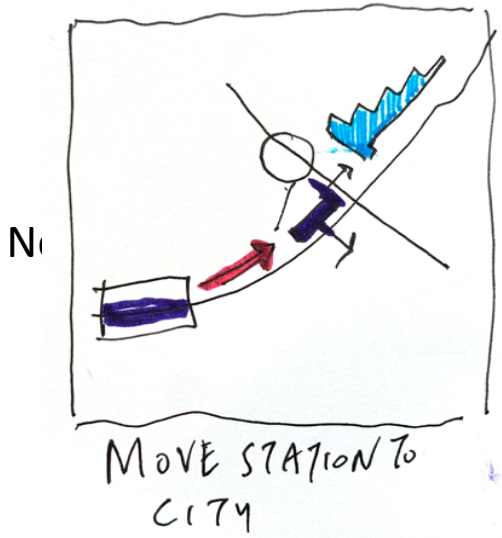


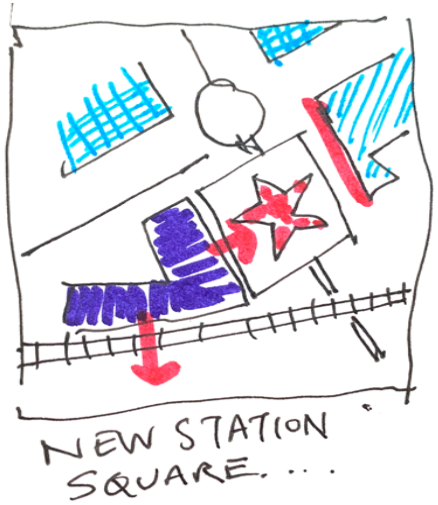
Two half loops

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: Macro solutions





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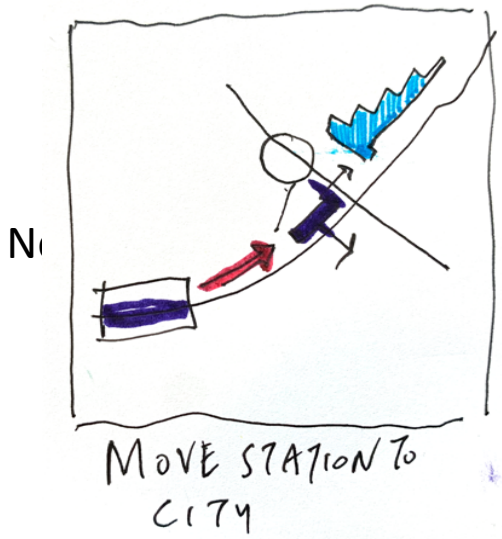
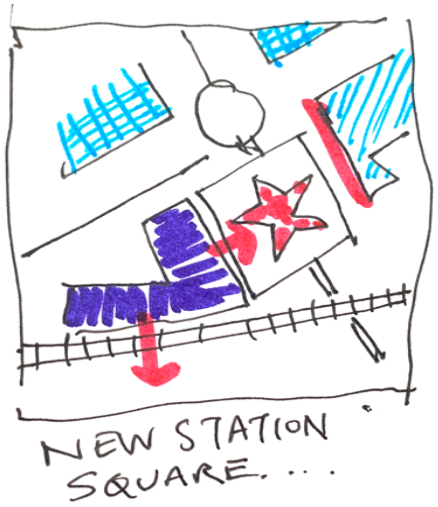
Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: Macro solutions





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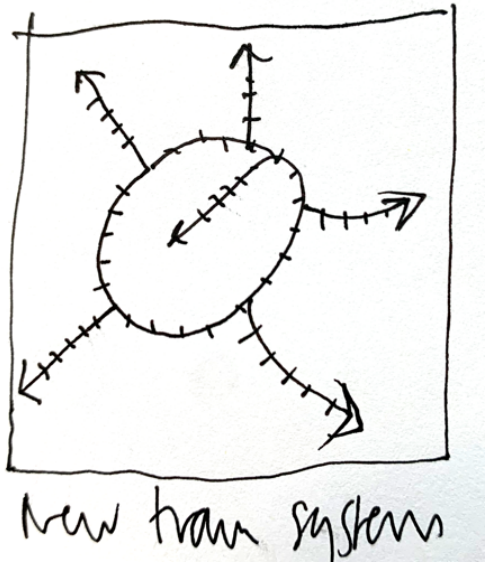
Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

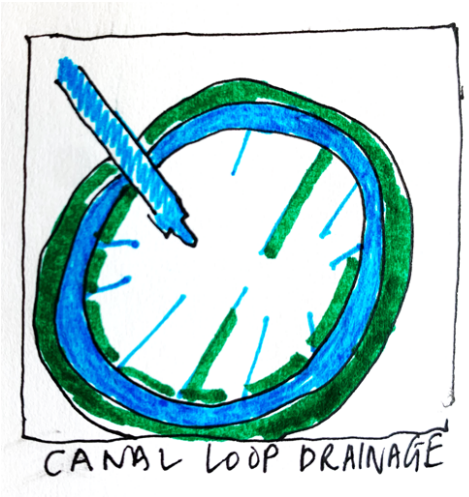
Urban Design: Macro solutions



Electric public mobility loop

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

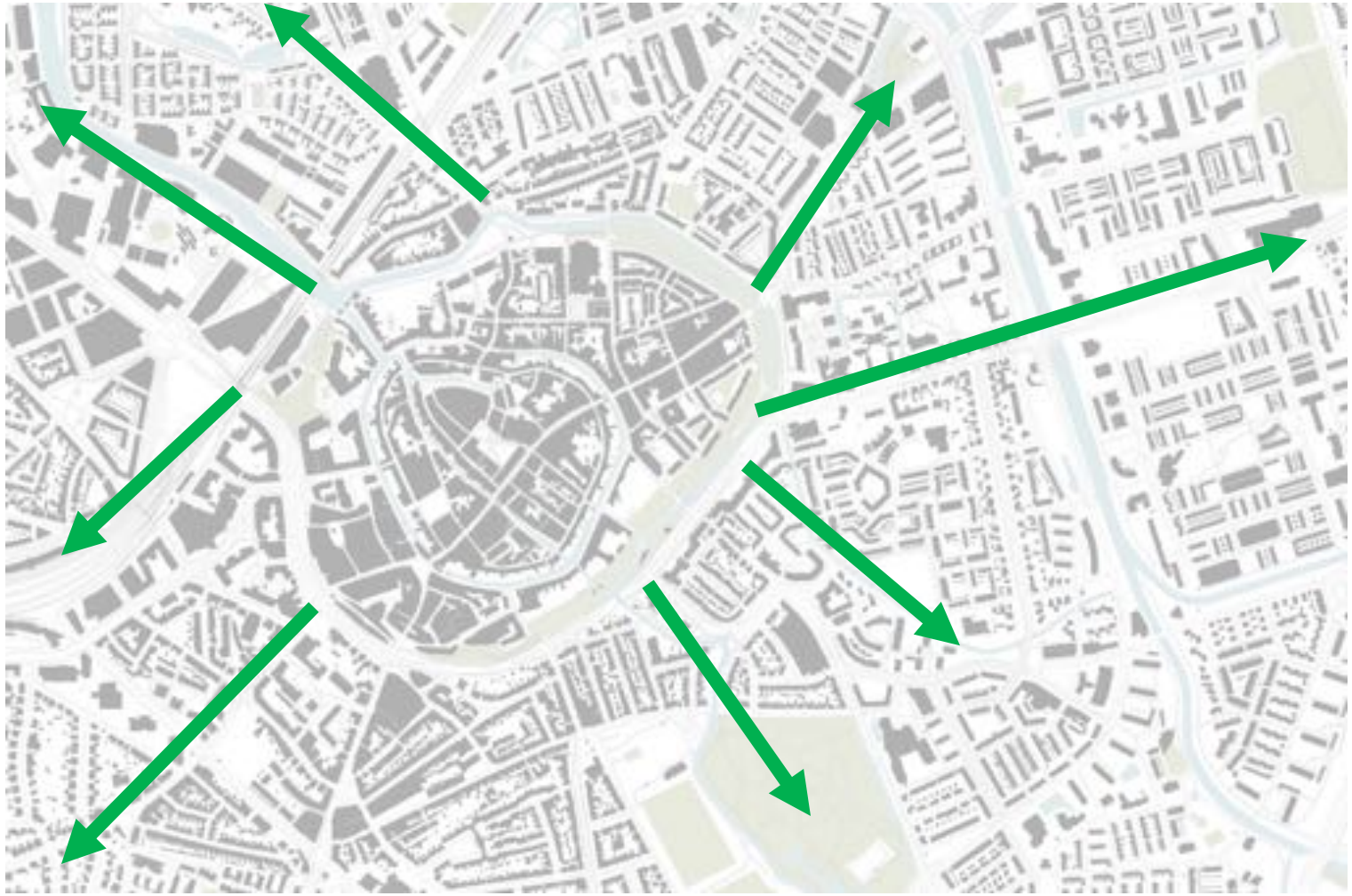
Urban Design: Macro solutions



Reinstate the canal loop

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Urban Design: Macro solutions



Contiguous green infrastructure

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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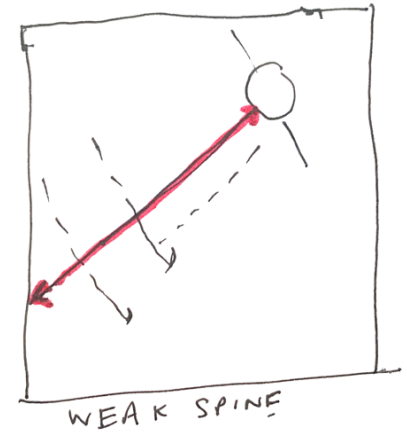
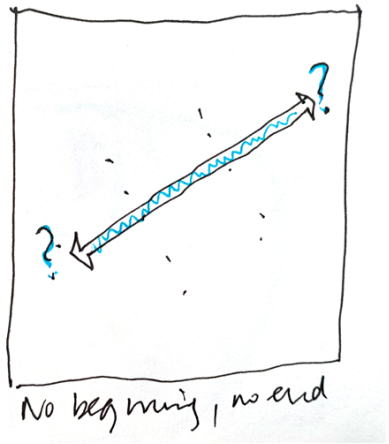
Urban Design: Macro solutions

New super neighbourhoods

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Urban Design: Neighbourhood Context, Binnenstad

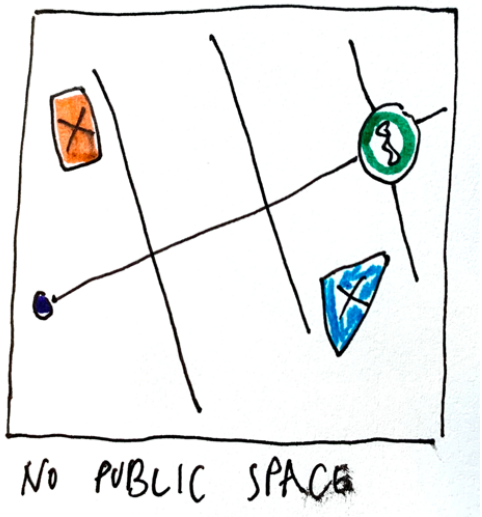




No distinctiveness

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Urban Design: Neighbourhood Context

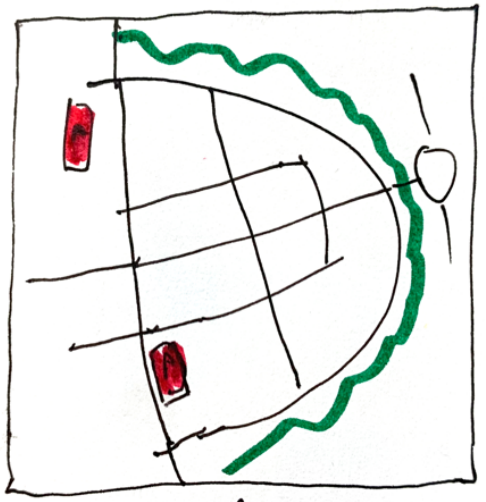


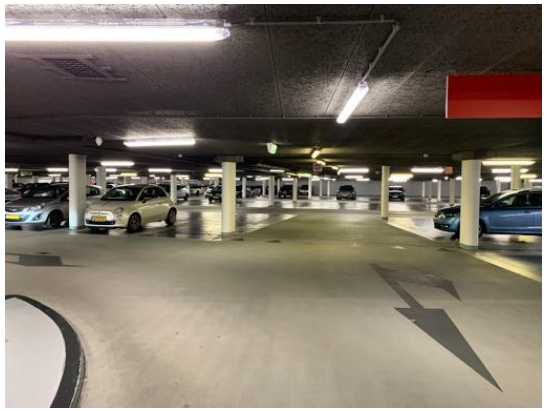
Little public space

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: Neighbourhood Context





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Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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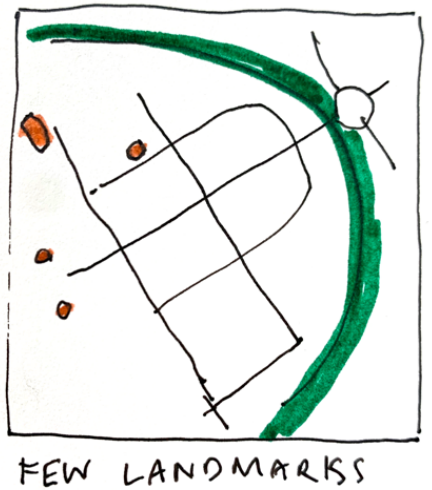
Urban Design: Context



Few landmarks

Urban Design: Issues

Issues

Historic stock
Difficult to change
Eighties housing has engagement issues

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Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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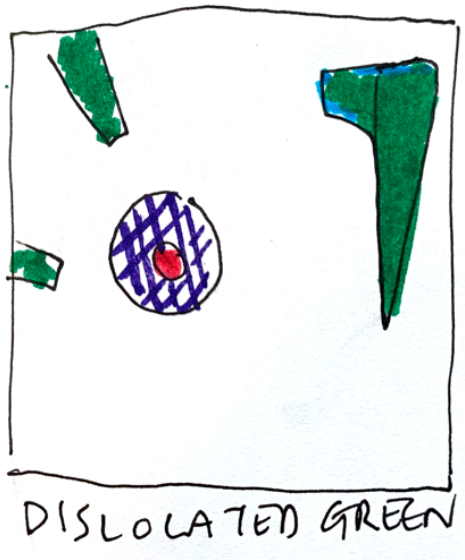
Urban Design: Issues

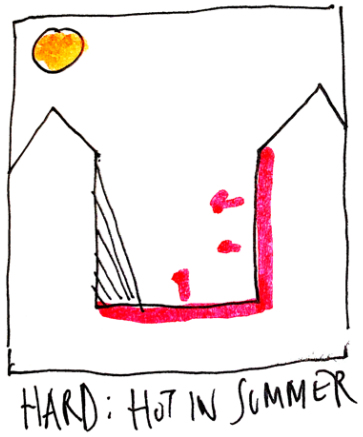


Dislocated greenspace

No local sports facilities

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Urban Design: Issues



Hard landscape

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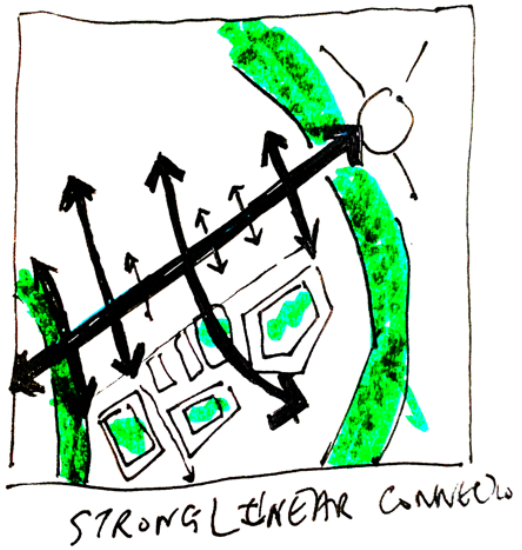
Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: Solutions



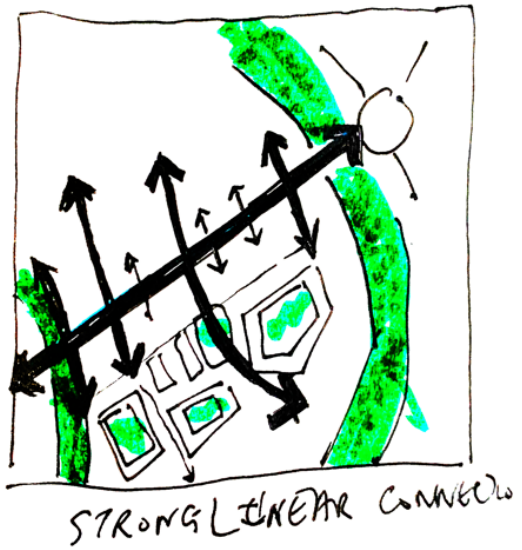
Solutions

New spine
Linear public space

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: Solutions



Solutions

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Linear public space

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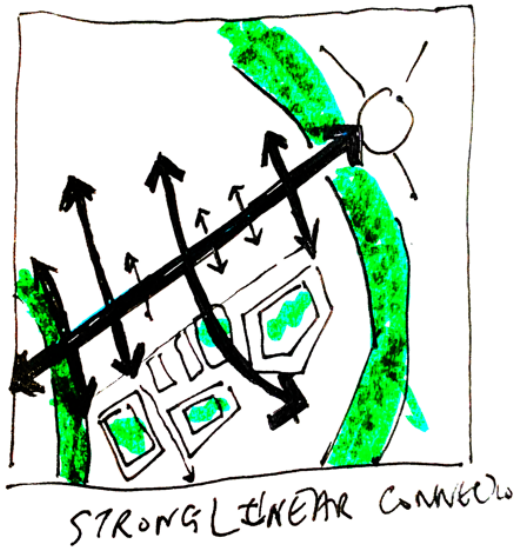
Amersfoort, NL October 2019

Urban Design: Solutions



Solutions

New spine
Linear public space

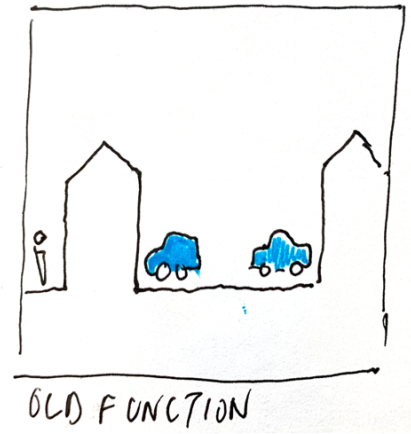
Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

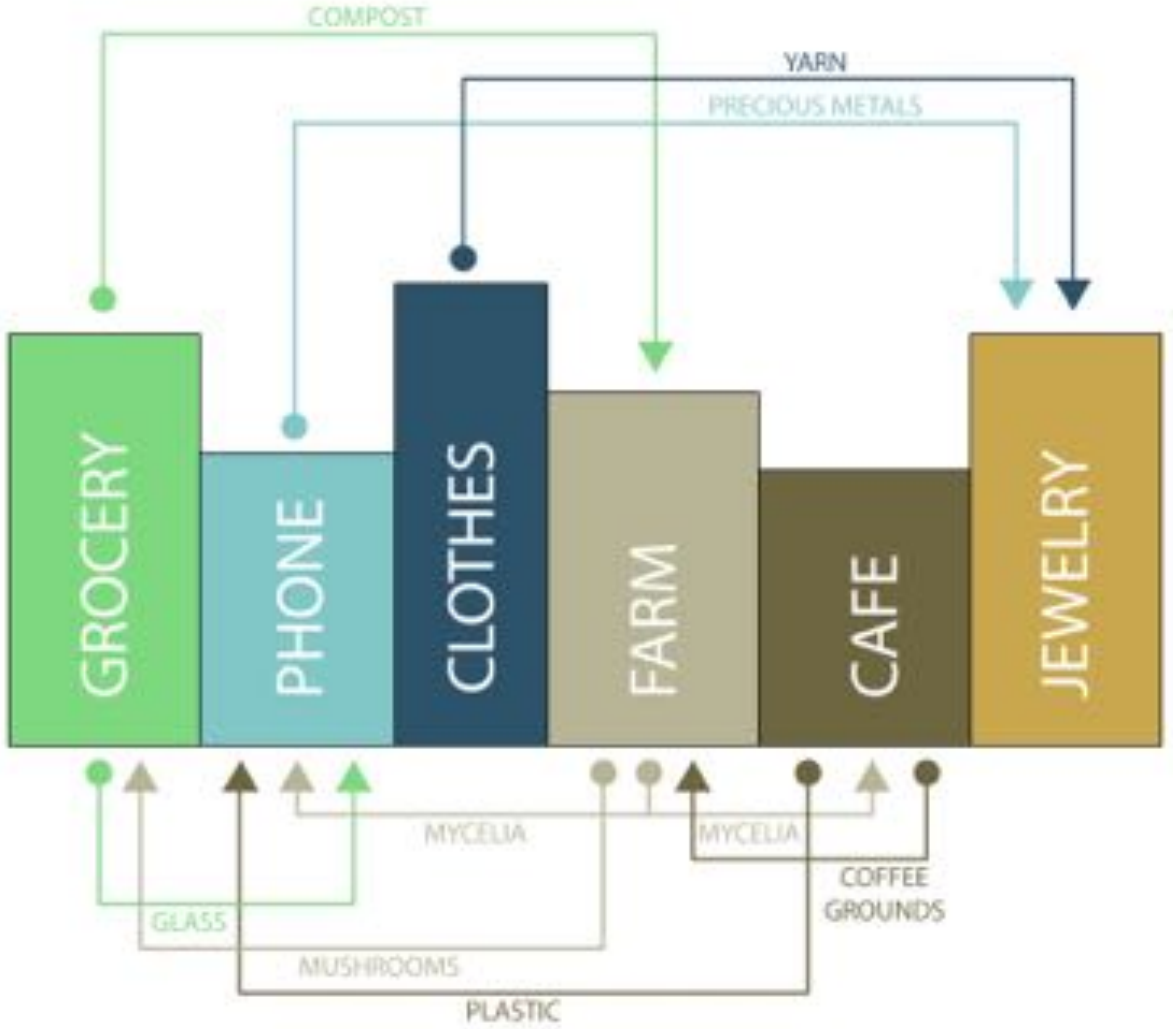
Amersfoort, NL October 2019

Urban Design: Solutions

New circular high street

market

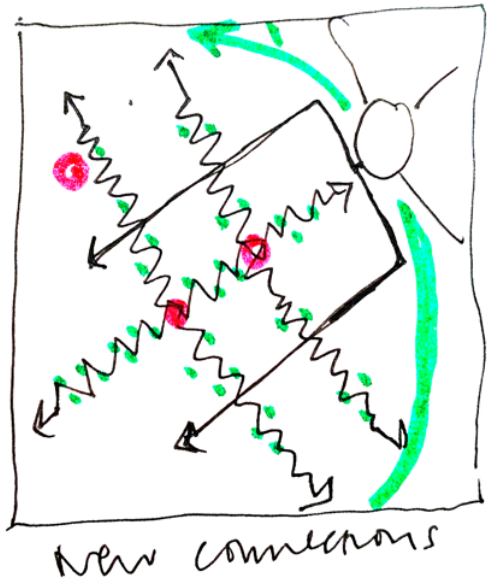




Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: Solutions

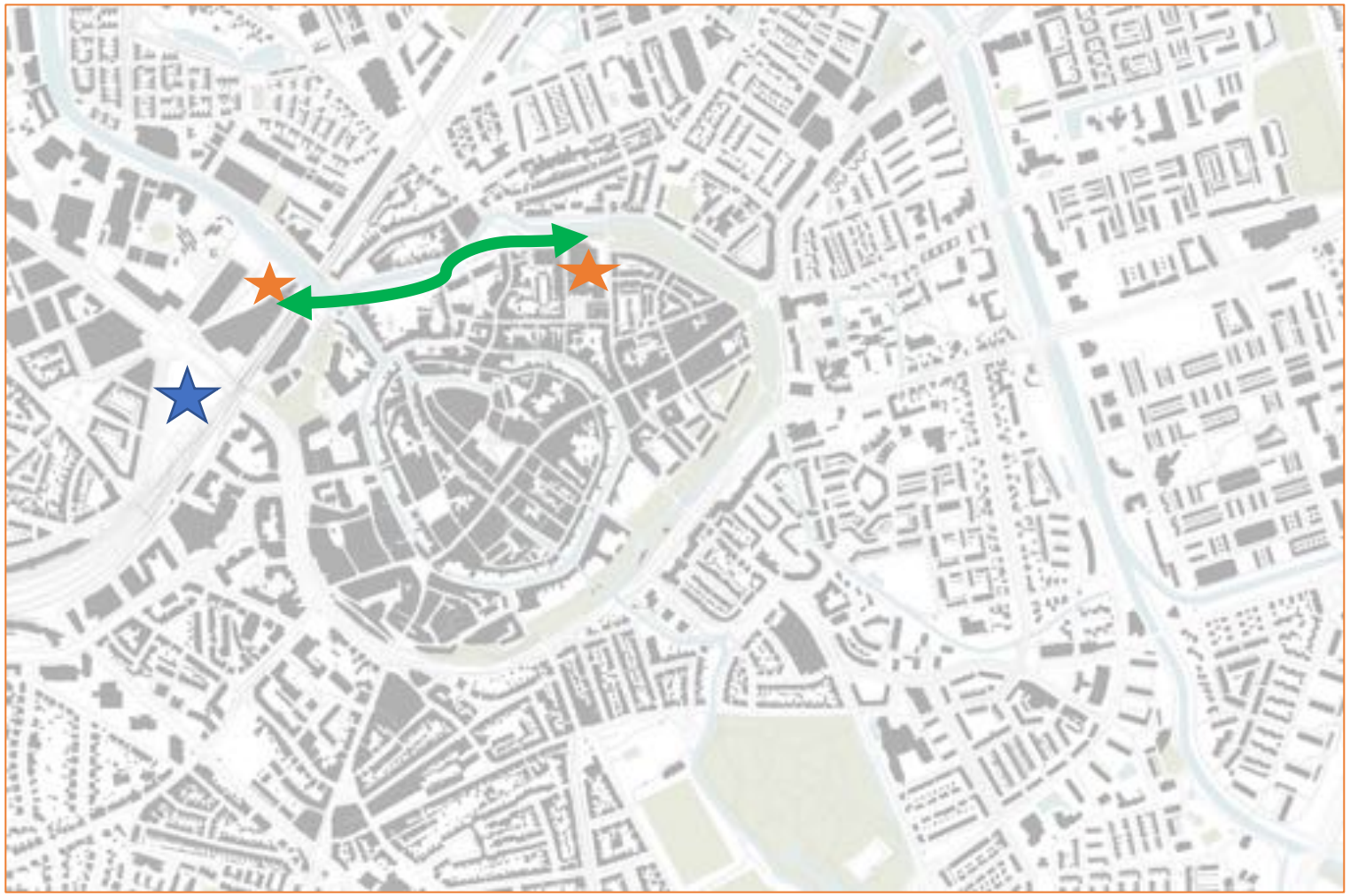


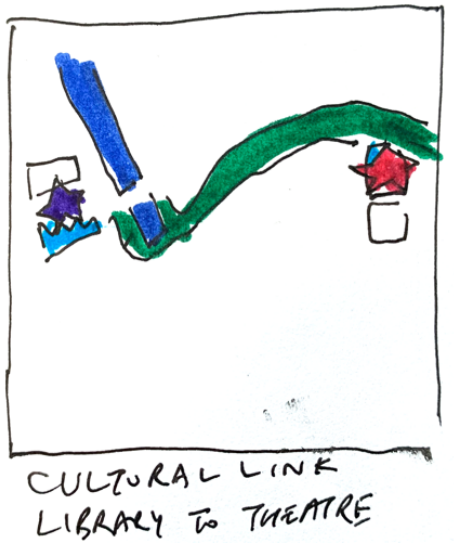
Connect….

To the theatre
To the greenspace

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Urban Design: Macro Context





New link

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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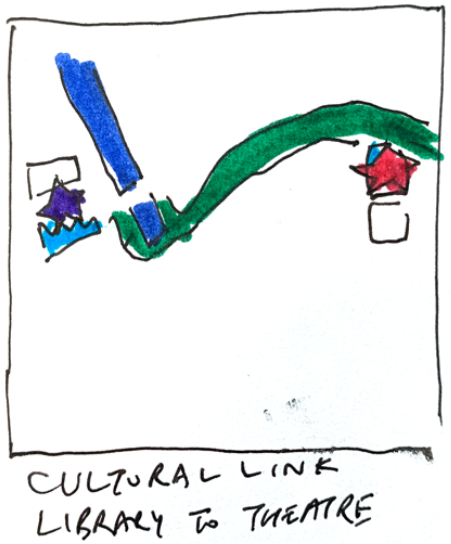
Urban Design: Macro solutions



CITY-zen
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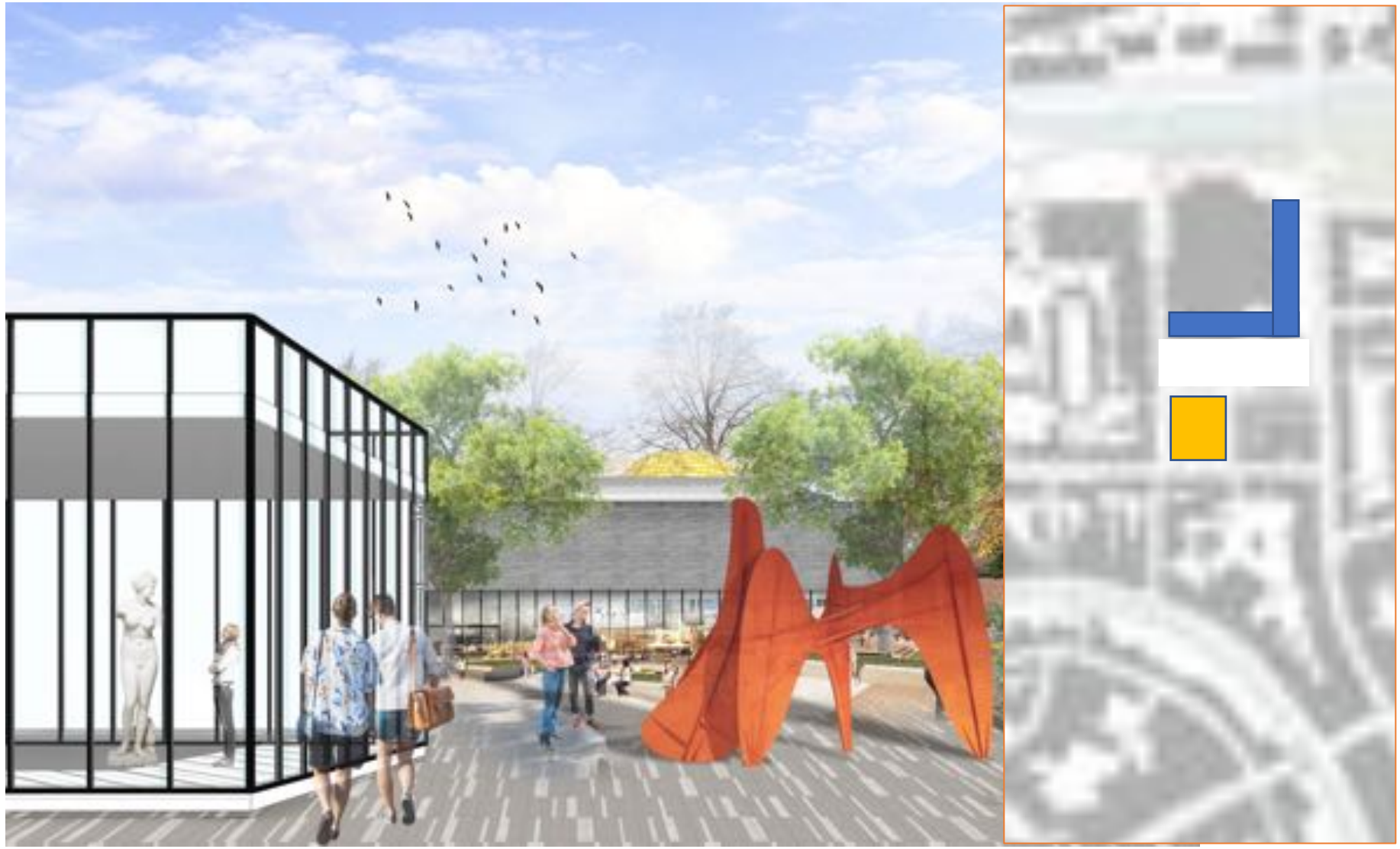
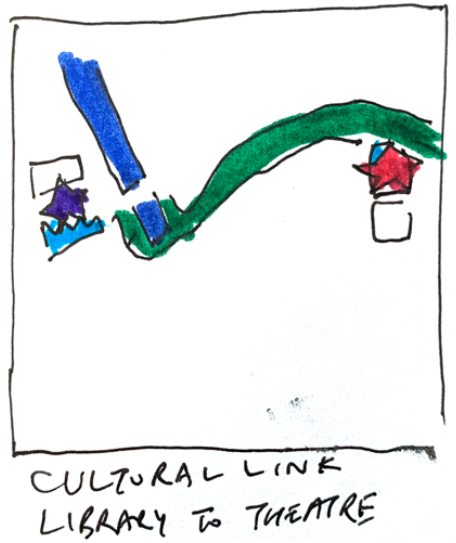
Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: Macro solutions





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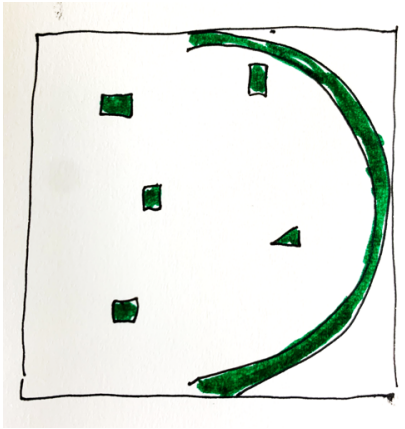
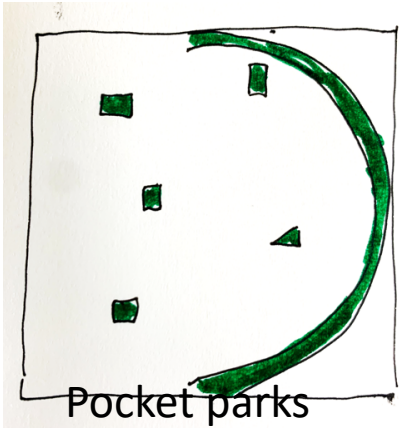
Urban Design: Solutions



Pocket parks

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Urban Design: Solutions



Connect with green streets

CITY-zen
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Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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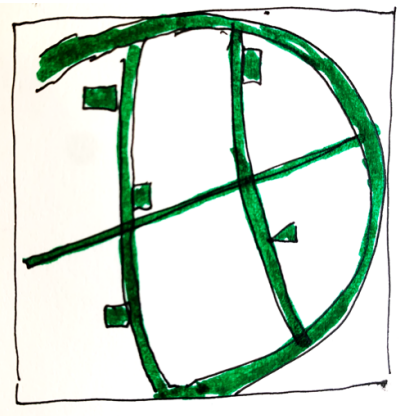
Urban Design: Solutions

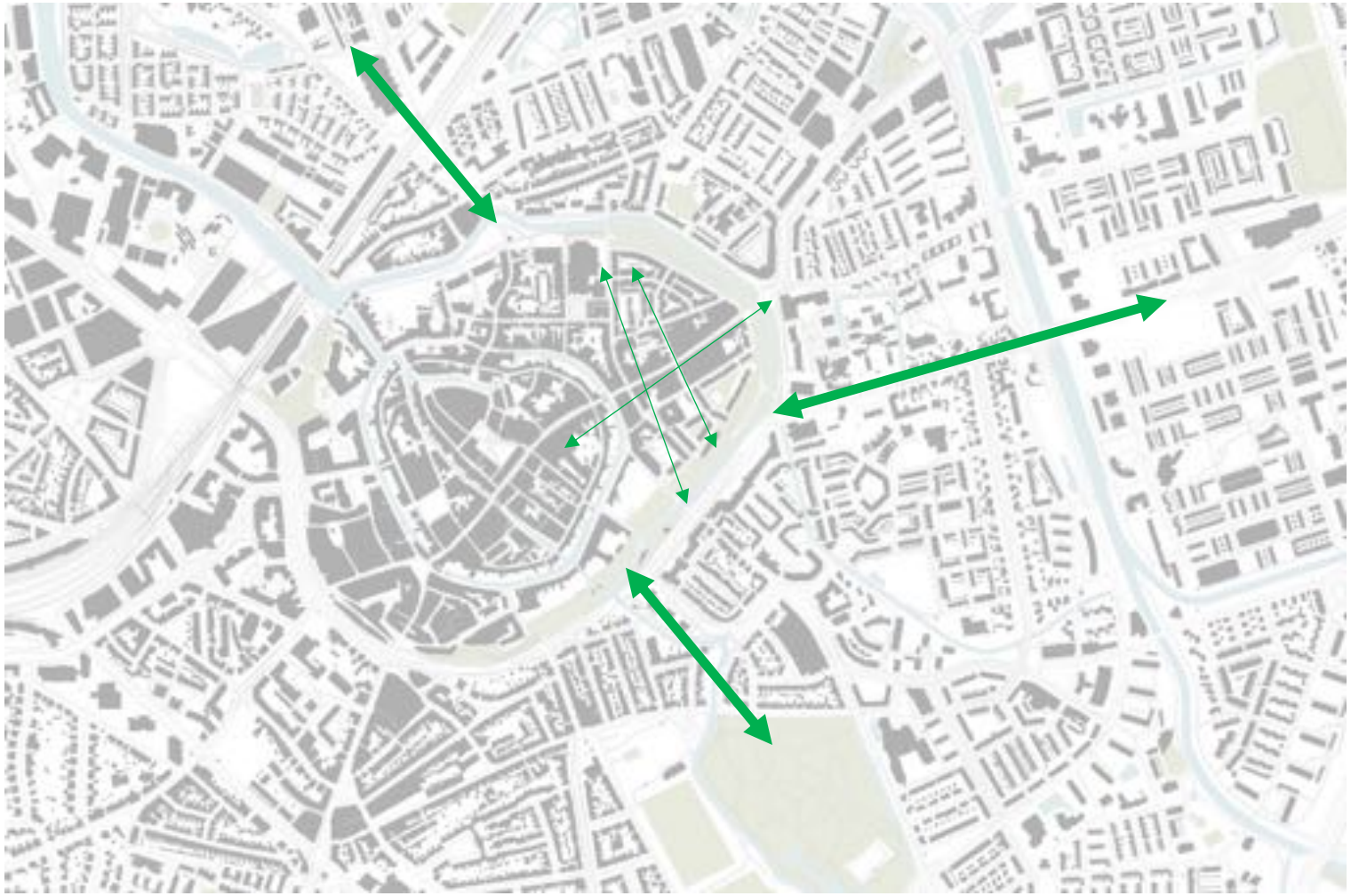


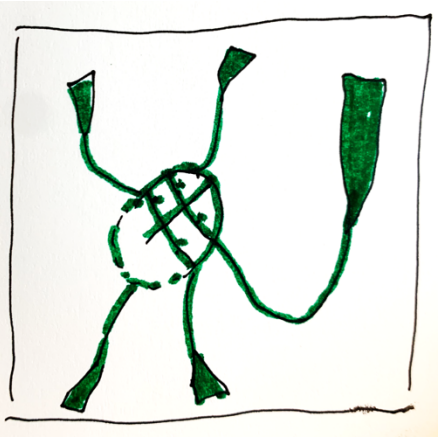
Connect with

new green grids

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Urban Design: Solutions

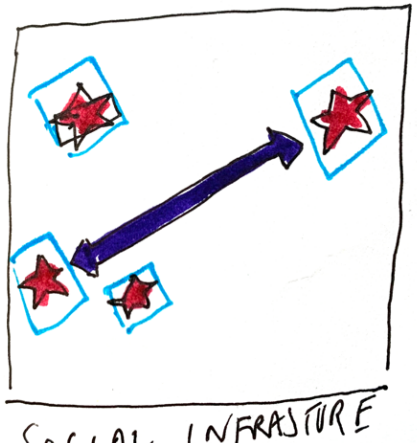


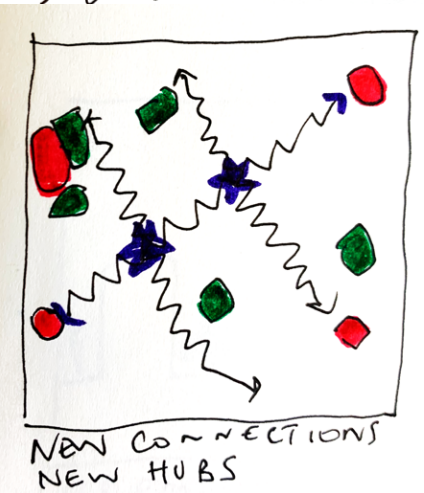


Connect green streets to wider green network

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Urban Design: Solutions





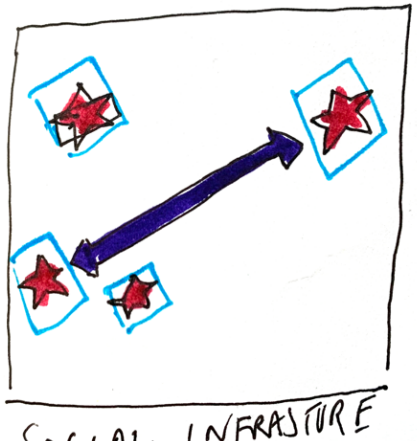
Connect

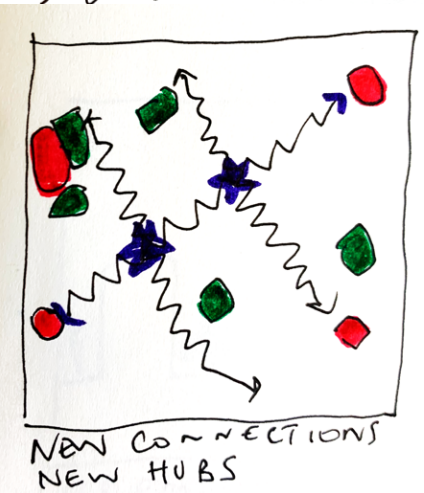
New public spaces

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Urban Design: Solutions





Connect

New public spaces

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Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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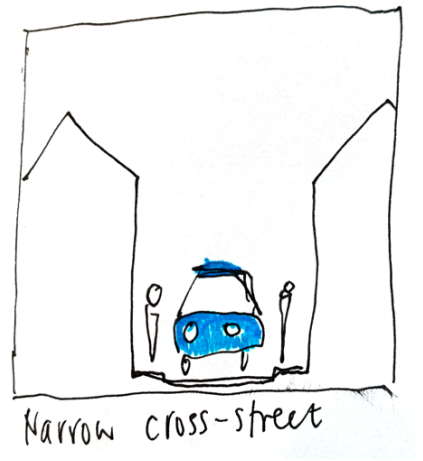
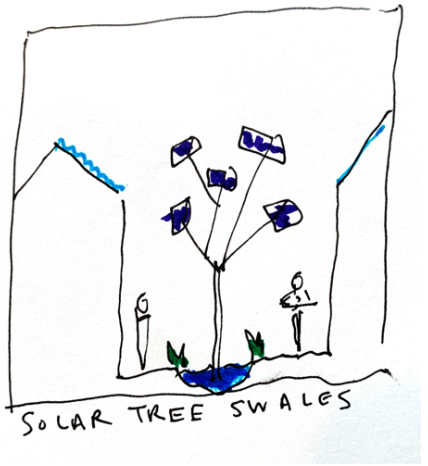
Urban Design: Solutions





Connection streets

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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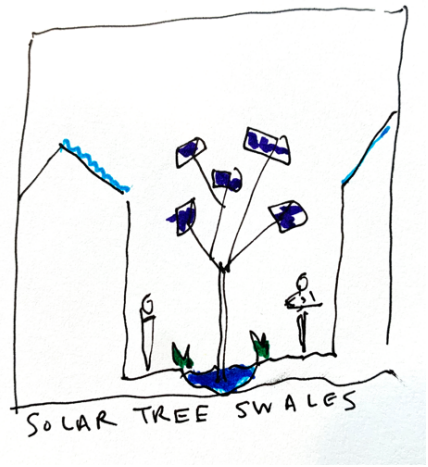
Urban Design: Solutions



Connection streets

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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Urban Design: Solutions

New car scape

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Urban Design: Solutions

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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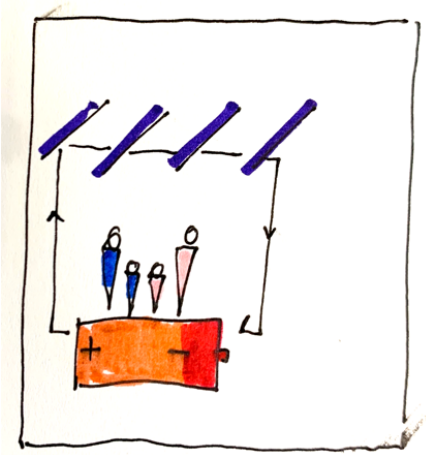
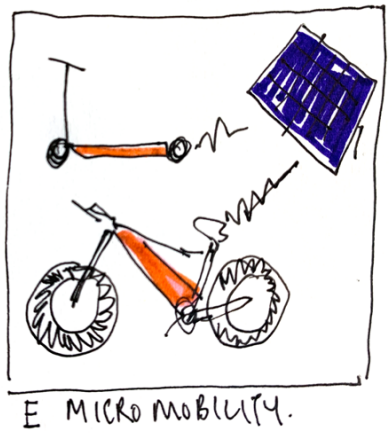
Urban Design: Solutions





Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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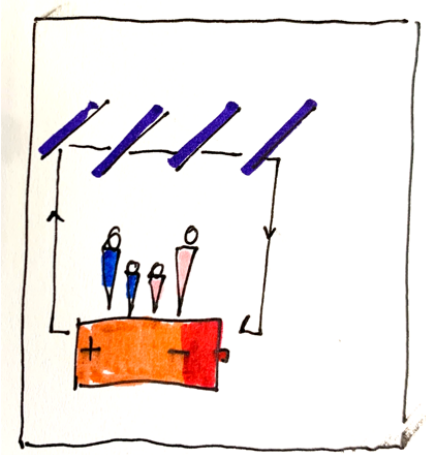
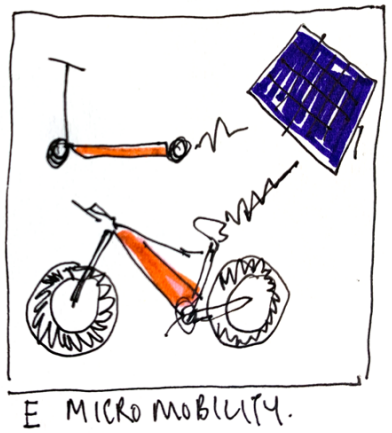
Urban Design: Solutions





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Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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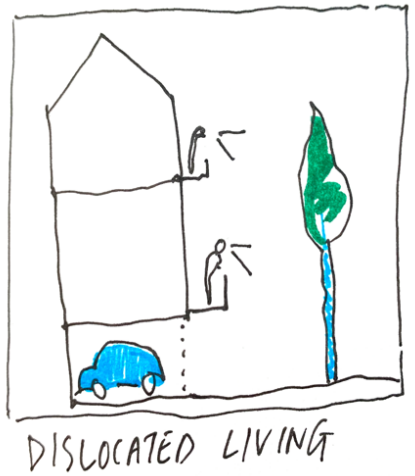
Housing Design: Solutions



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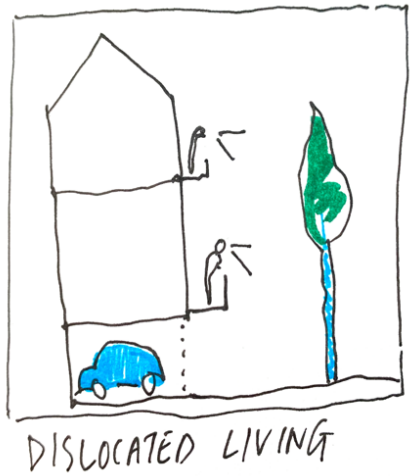
Housing Design: Solutions



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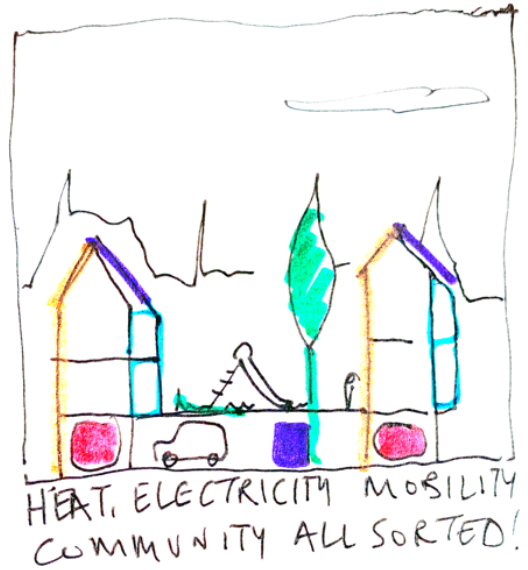
Housing Design: Solutions

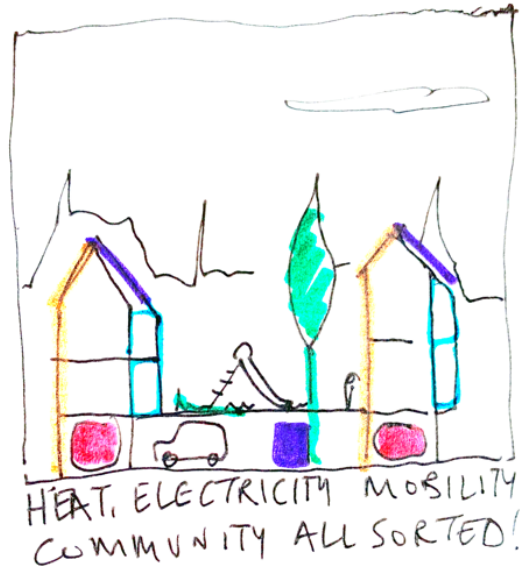


Heat
Electricity
Water
Waste
Mobility
Food

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

Amersfoort, NL October 2019

Housing Design: Solutions



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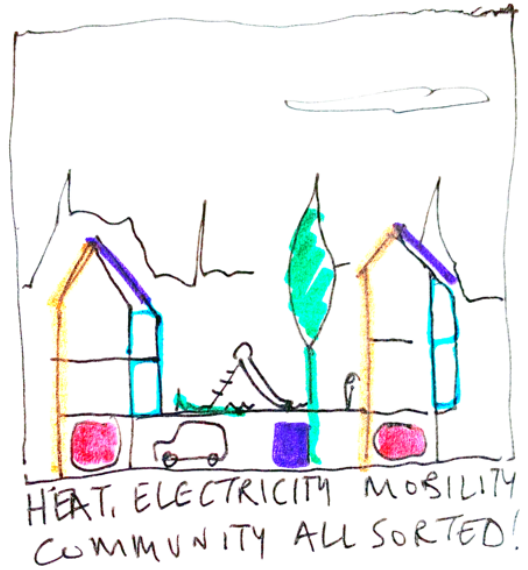

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New urban energy
ROADSHOW

Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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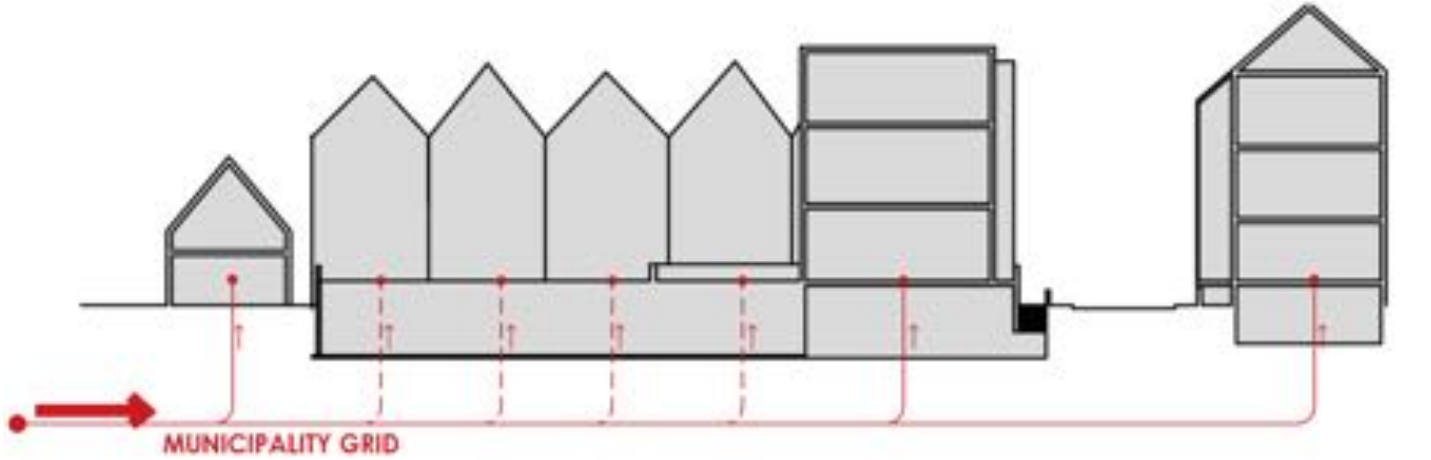
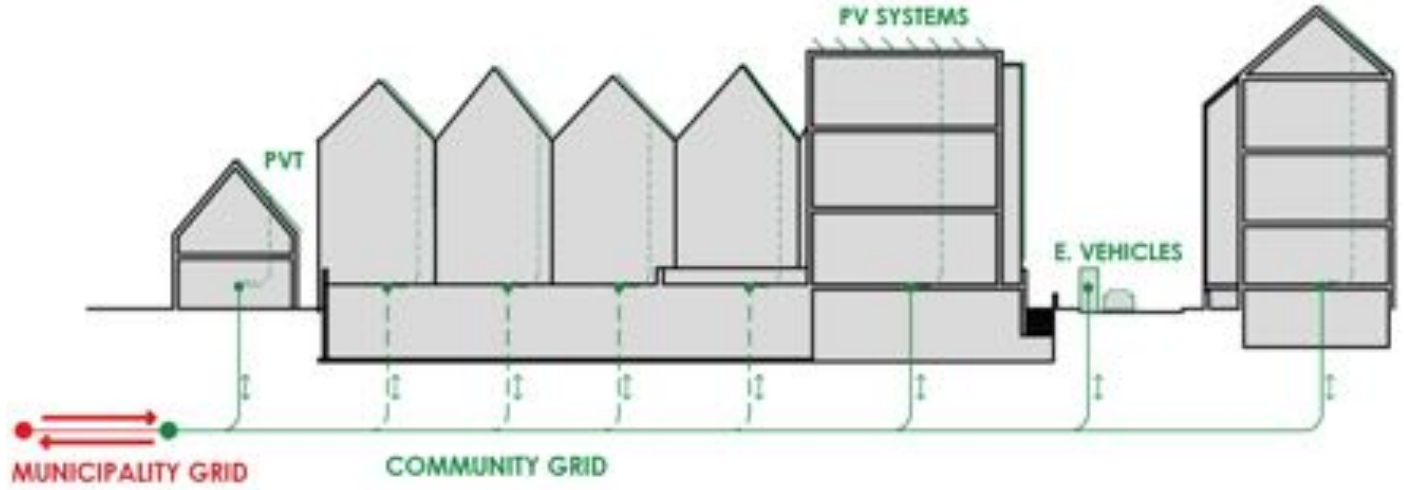
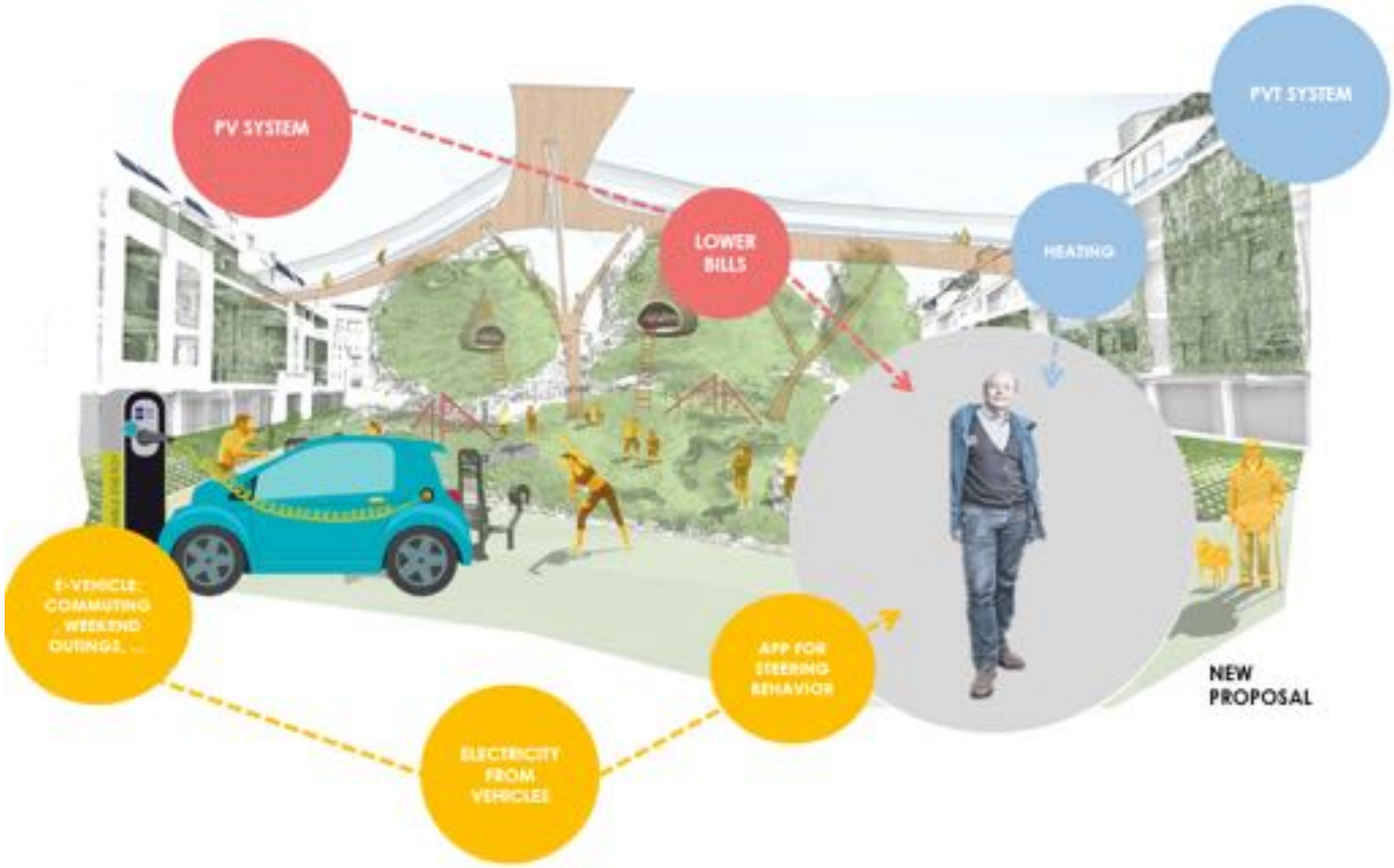
Energy community: sharing the ups and downs





Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

New Lifestyles: Solutions



'Hi, I'm Jo.

I live in the new energy community. Things have really changed because of it.

Firstly I have hardly an fuel bills, our roof mounted PV-T panels provide electricity and heat.

Our whole building share the electricity, and this equalizes our electricity consumption, so we hardly need any from the grid. Our houses are known as the tulip houses as they store the heat energy in summer in giant tanks in the old garages.

I got rid of my car too, the community have a range of shared E-vehicles – you can even go camping – in an e-camper, but there's no smoking allowed!

The new first-floor courtyard connects us all to community growing and we share produce with the other housing blocks.

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New Lifestyles: Solutions

Hi I'm Leen,

I run a shop selling hand roasted coffee and hand blended tea.

The new high street has really increased the number of people visiting me, and the weekends when the whole street is a local market is crazy!

The new circular infrastructure means that I buy cups and bags made of mushroom waste from the urban farm next door. These are compostable as well as disposable, so I don't feel bad giving them out.

I reciprocate with the farm by giving them my coffee grounds, they use them to produce mushrooms. It's great being waste free.

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New Lifestyles: Solutions

"Hi I'm Machiel

I'm a Theatre goer and I'm keen on art.

I live in the 'burbs, and usually come in by car in the evening.

The reallocation of the station and the new cultural connection between the library and Flint has really changed my experience. I can now get the train in and walk along the canal to the theatre. Afterwards I can go for a beer in the new public square and chat about the play, before leisurely ambling back to the station. I realise that not having to drive in has made my engagement with the city so much more rewarding."

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Urban design strategy: Prof Greg Keeffe, Queens University, Belfast.

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New Lifestyles: Solutions

"Hi I'm Mariette

People call me a hipster, but really I just know what I like.

I like quality stuff: the best of local, and the best of global.

I suppose I'm searching for the goodlife, and I've found it in Amersfoort: I live in Binnenstad, with all its new organic food shops and craft bakeries. You can live zero-carbon and eat hyper-locally.

However, I also need to have a global connection: The new station means I'm less than an hour from Schiphol and Amsterdam. One minute I'm supping organic coffee with friends, and then in AMS discussing my new startup with investors or I'm off the see the latest Keith Haring exhibition in NYC.. "

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New Lifestyles: Solutions

"Hi I'm Andy,

I'm a Brexit escapee from Britain.

I moved to Amersfoort to escape the right-wing coup that's happening in the UK right now.

I live with my partner Tillie and our two young kids. I've set up an urban farm selling edible flowers to restaurants, but I have to be a full-time parent too. Binnenstad gives me the best of both worlds, I can walk to work off Kamp street, and drop the kids off at School. At the weekend we can cycle out to the forest or go to a museum in Amsterdam without using a car. The energy community has been a great way to meet people and the new first-floor garden means the kids can play out without supervision.

If I actually need a car, I just click on an app.

It certainly beats hanging out with the EDL in Doncaster."

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