Interreg Baltic Sea Region

Co-funded by the European Union

SUSTAINABLE WATERS WaterMan

Overview of the pilot status

Rain garden for the greening of a public car park

Braniewo Municipality

Gdańsk University of Technology

30 April 2025

WP- 2 PILOTING

WaterMan pilot actions in Braniewo (Poland)

- 2.2 Pilot measure / recirculation of retained water: **Urban raingarden at public swimming pool**

Recirculation of retained water: Urban raingarden at public swimming pool

Responsible Project Partner:

Braniewo Municipality (PP 5)

Gdansk University of Technology (PP7),
Faculty of Civil and Environmental Engineering

Municipal Sports Center „Zatoka”

Recreation & Rehabilitation Complex „Healthy Braniewo”

[Source: geoportal.gov.pl]

Location:

Łąkowa 1 Street, **Braniewo**, Poland

[Source:mos.braniewo.pl]

Infrastructure:

- **Indoor pool complex:**
  - sport swimming pool
  - leisure pool with wading pool
  - SPA bath
- **Wellness facilities:**
  - sauna rooms (x2)
  - gym
  - massage parlour
  - rest zone
  - tanning beds

Recirculation of retained water: Urban raingarden at public swimming pool

issues and challenges

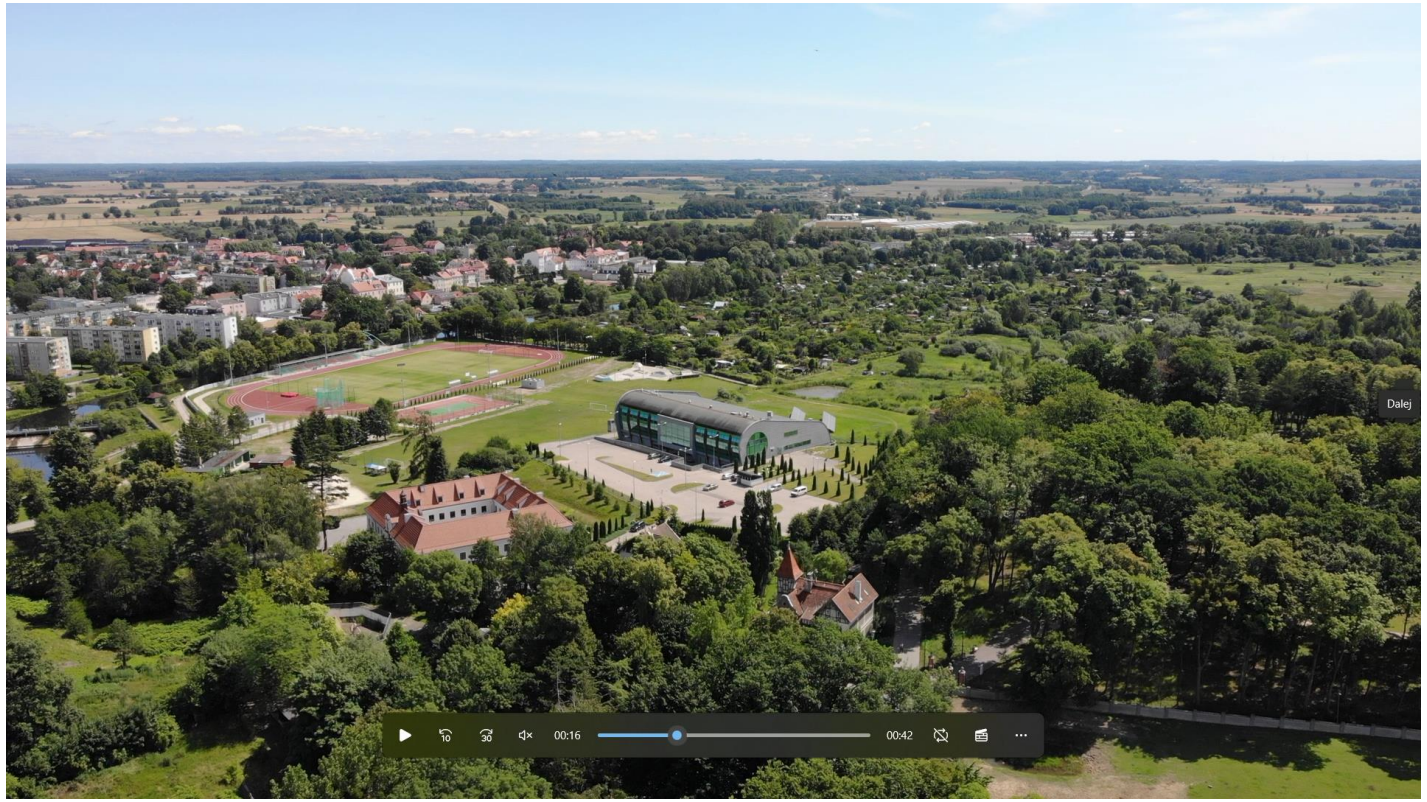
ISSUES

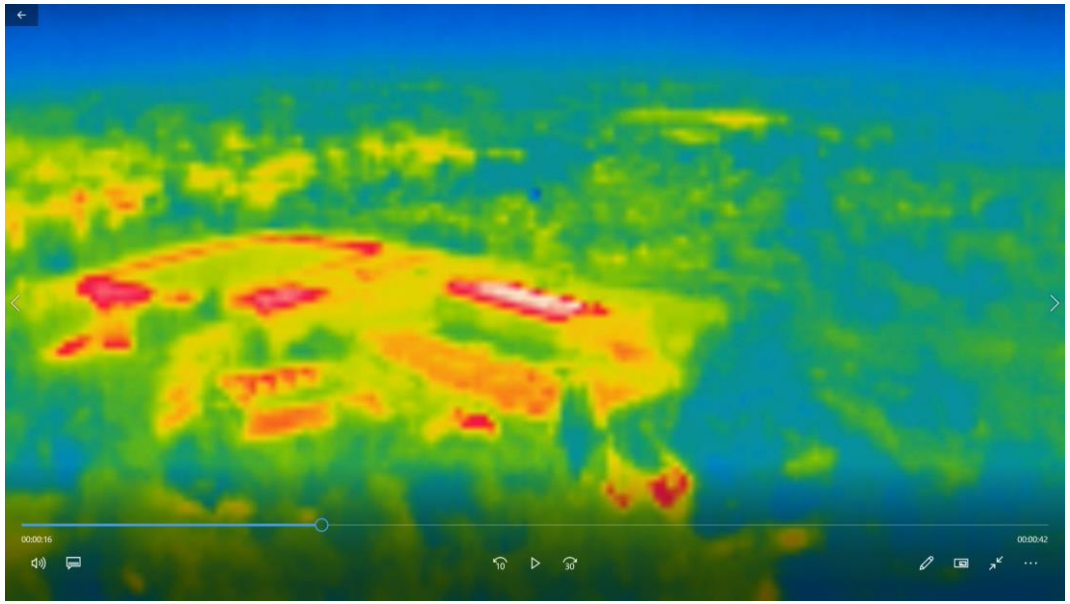
- concreted area around the swimming pool building - parking lot and surroundings:
- heats up (urban heat island effect)
- generates a large surface runoff during precipitation
- rainwater drained to the rainwater drainage system
- a small amount of urban greenery - mainly grass - dries up or is watered with tap water

CHALLENGES :

- transformation of urban greenery into functional greenery
- rataine rainwater at the point of origin

2.2 Pilot measure / recirculation of retained water: Urban raingarden at public swimming pool





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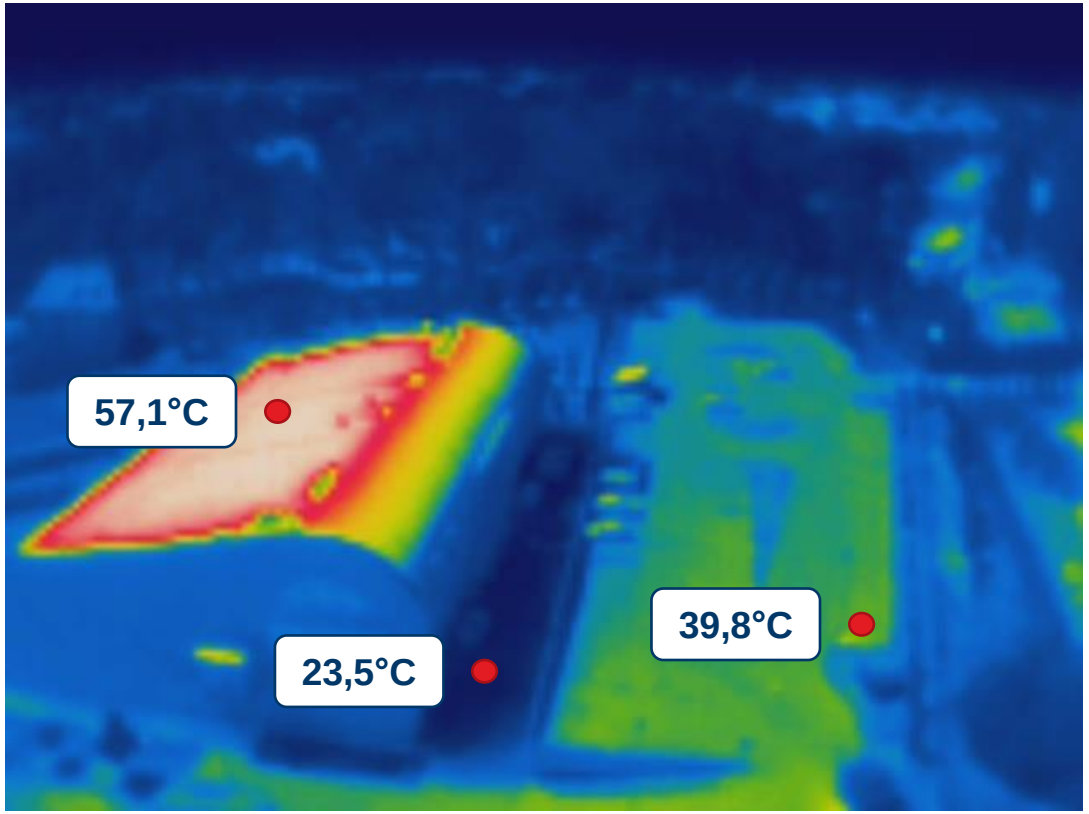

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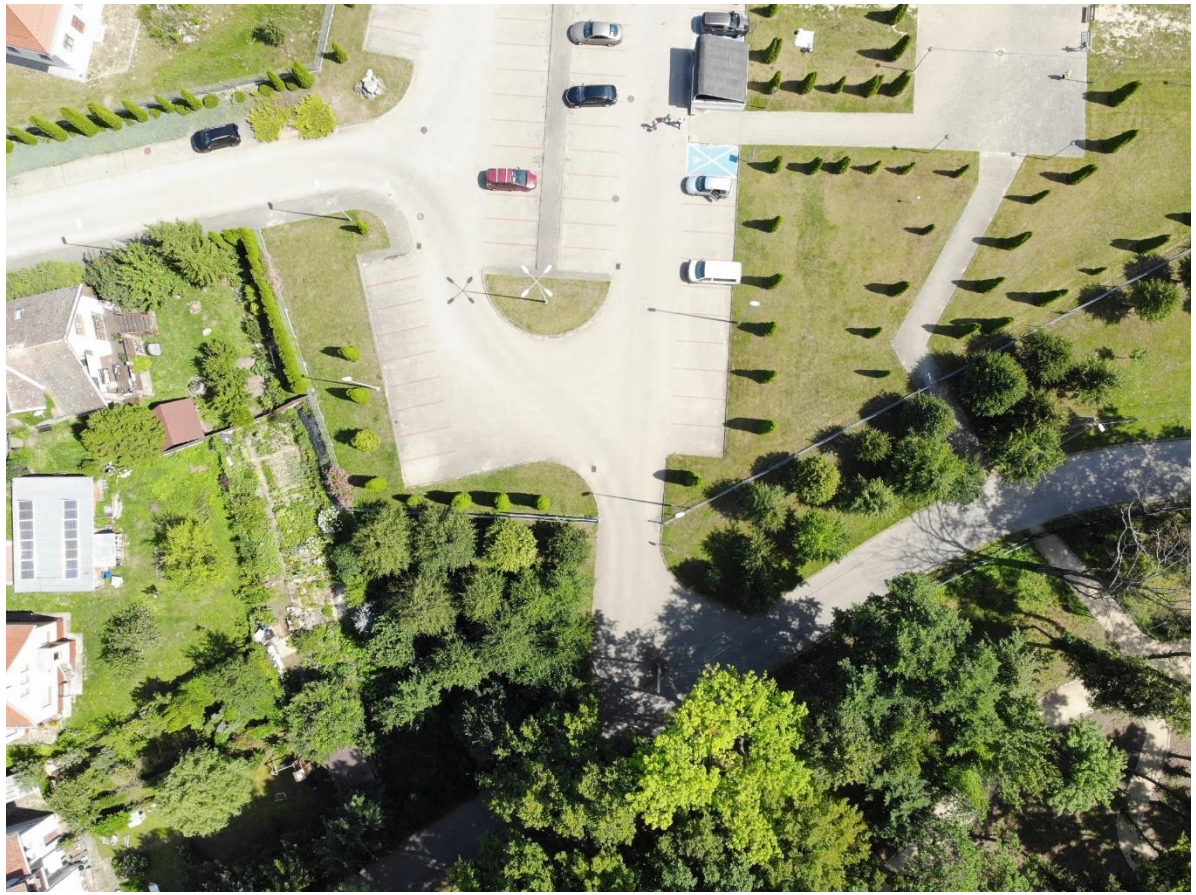

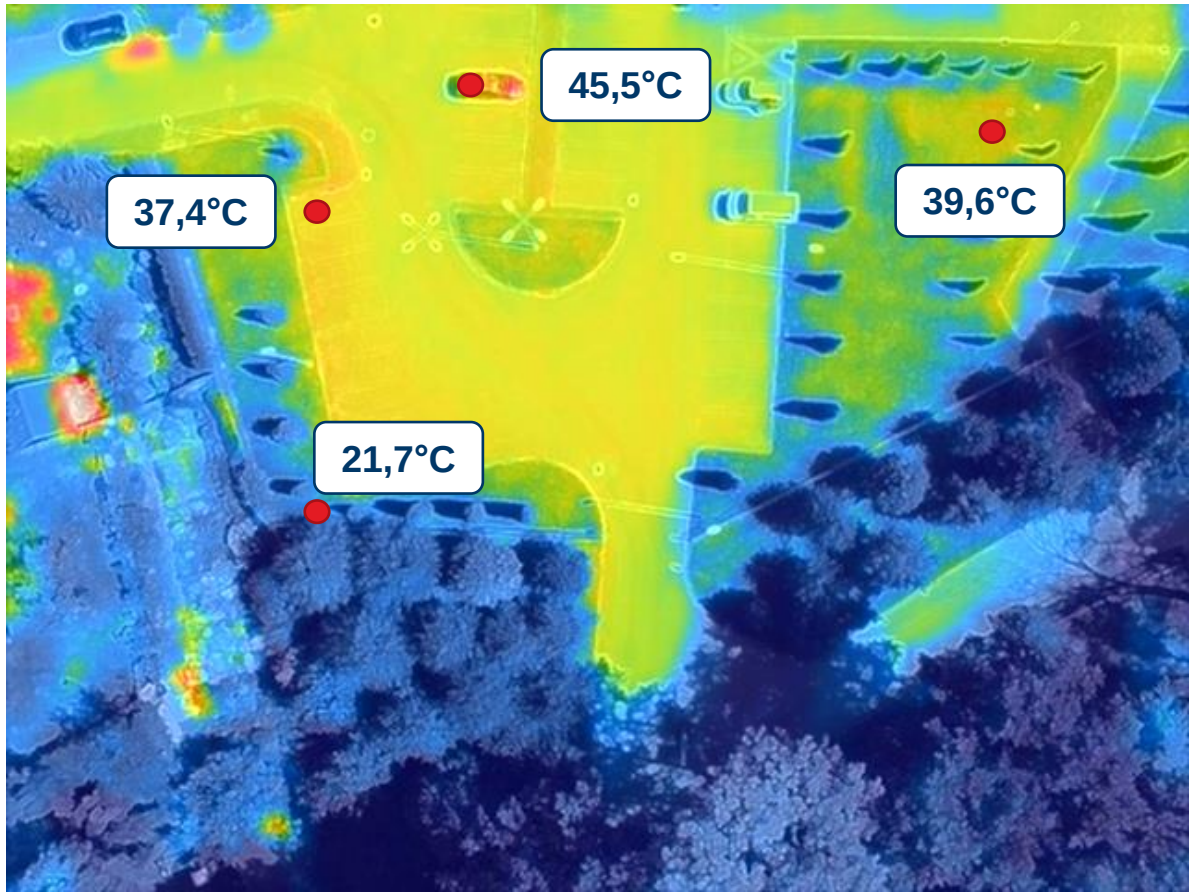

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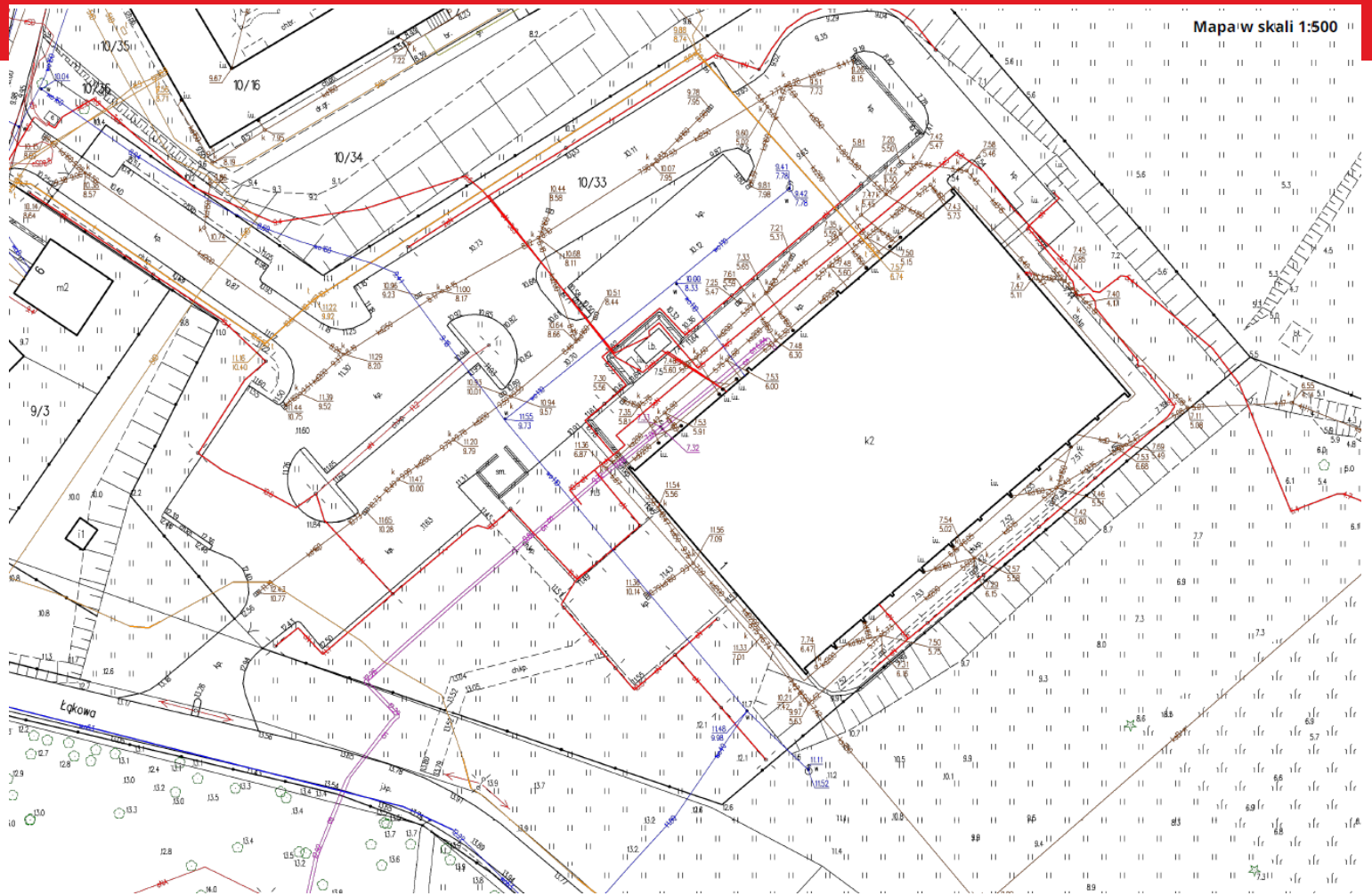


Catchment area:
~ 10 000 m^2

Main assumption - precipitation to manage:

30 mm from each m^2 of impermeable pavement

Roof area:
~ 2 000 m^2 → Rain water volume:
~ 65 m^3

Parking area:
~ 3 500 m^2

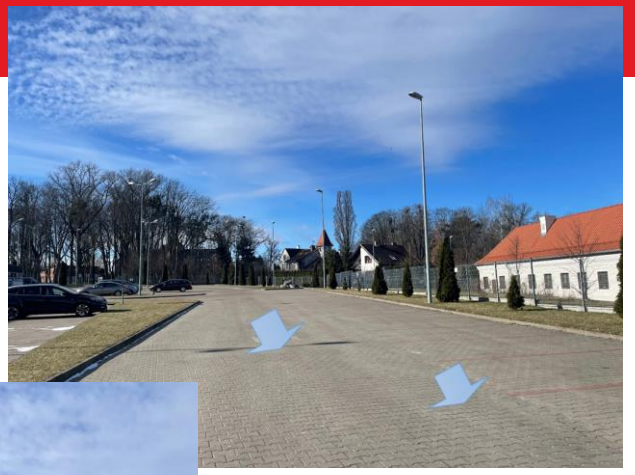
Street area:
~ 800 m^2 → Rain water volume:
~ 125 m^3

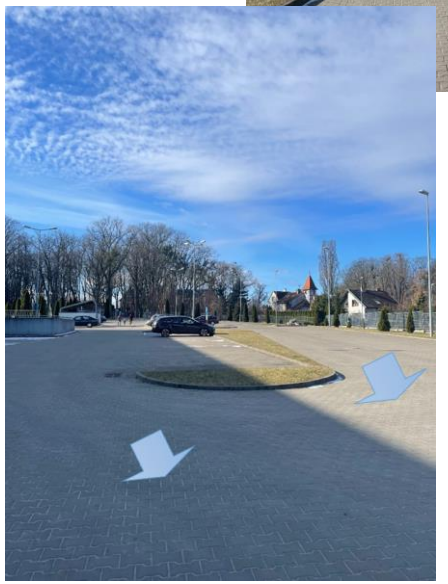
GDAŃSK UNIVERSITY OF TECHNOLOGY

RESEARCH UNIVERSITY EXCELLENCE INITIATIVE

SOLUTION

2.2 Pilot measure / recirculation of retained water: Urban raingarden at public swimming pool





https://iplywamy.pl/wp-content/uploads/2012/07/budynek01-800x600.jpg

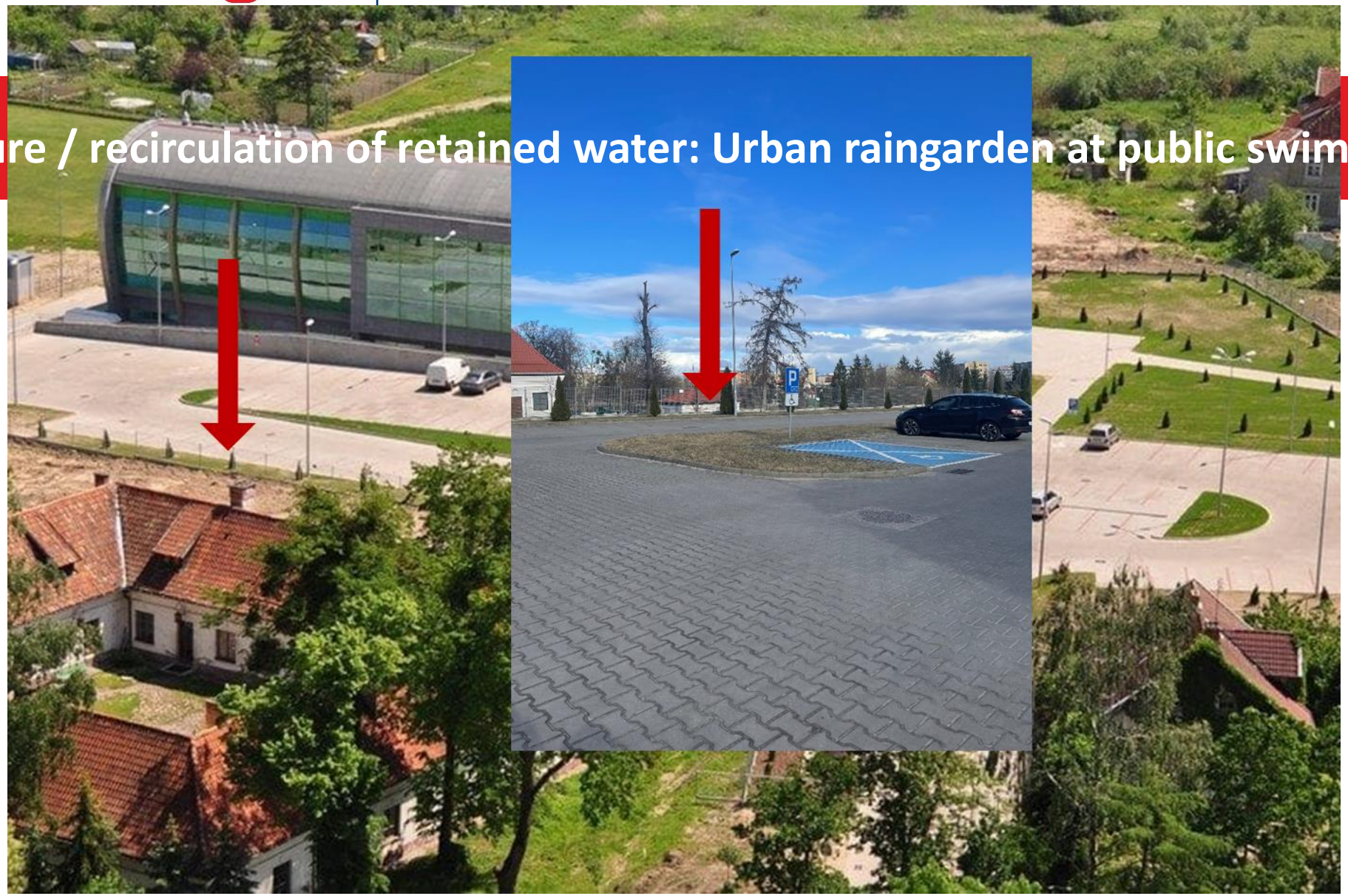
2.2 Pilot measure / recirculation of retained water: Urban raingarden at public swimming pool

5 PLACE FOR RAINGARDEN

Retention flowerbed

2.2 Pilot measure / recirculation of retained water: Urban raingarden at public swimming pool

5 PLACE FOR RAINGARDEN



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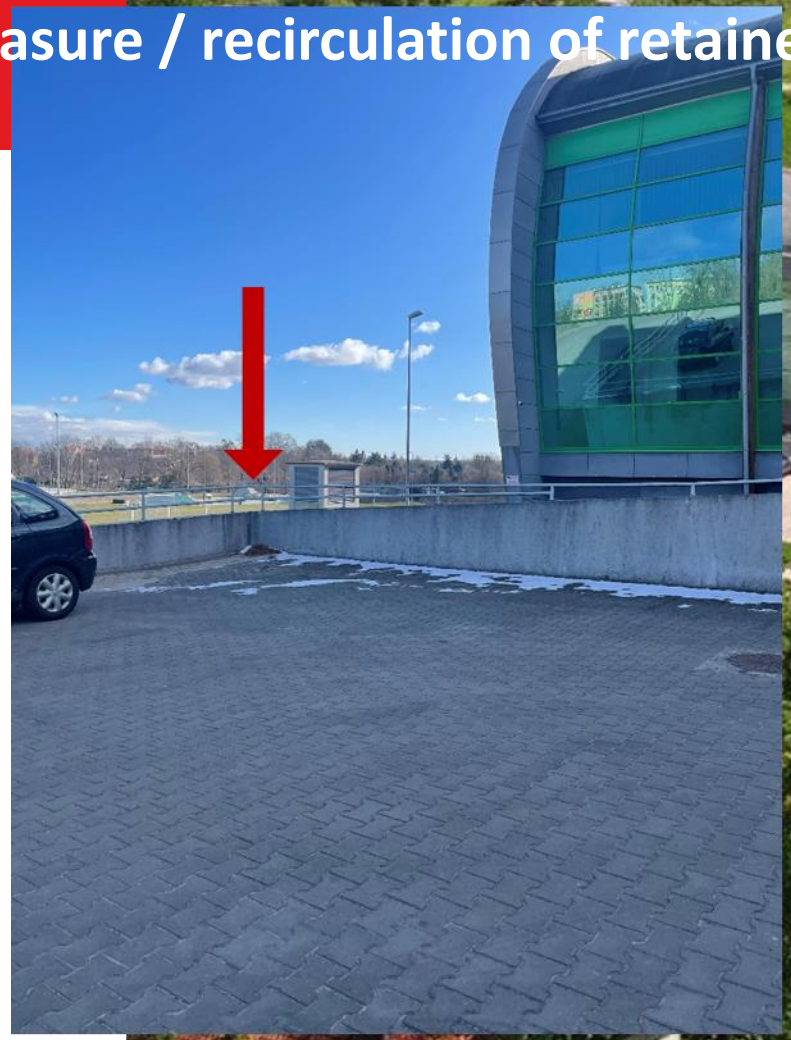

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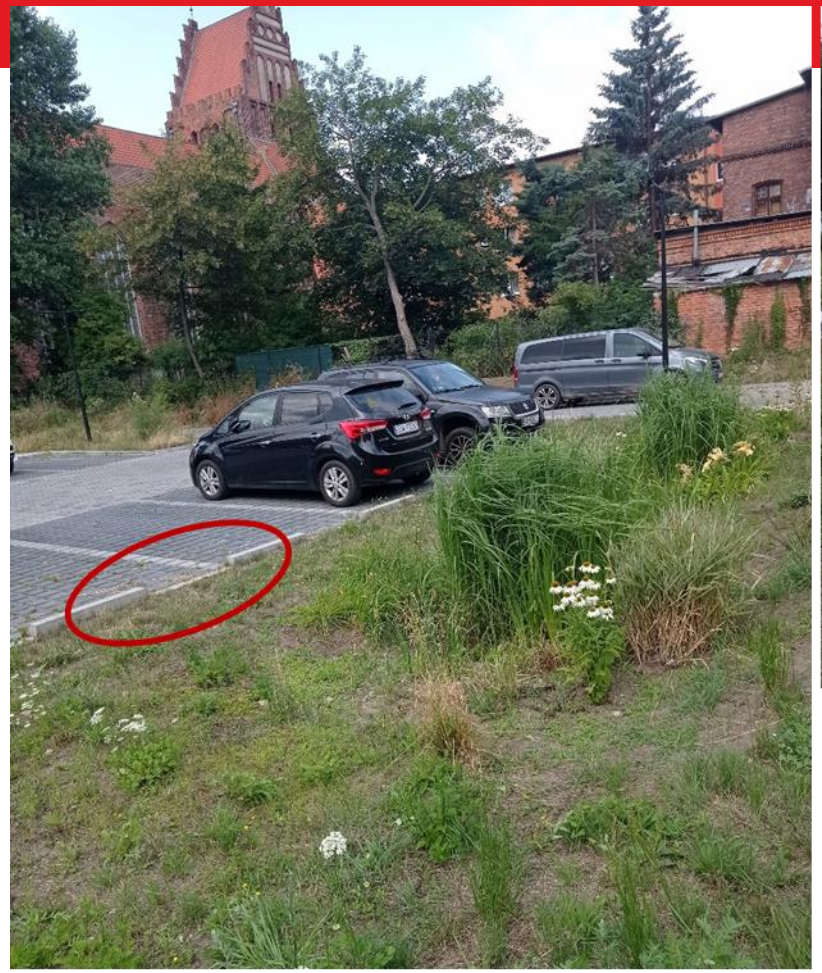


JAGGED CURBS

2.2 Pilot measure / recirculation of retained water: Urban raingarden at public swimming pool

GUTTER

Creating urban rain gardens in the Municipal Sports Centre

1. reducing the urban heat island effect
2. improved drainage of the car park area and use of rainwater, which has so far been discharged into the drainage system to irrigate greenery and increase soil moisture - mitigating thermal conditions
3. improvement of the local microclimate (air circulation, air purification from pollutants (dust, etc.),
4. aesthetics of the space and increasing its attractiveness for visitors to the MSC (small architecture, camouflage greenery)
5. economical approach to greenery maintenance
6. increasing the awareness of the inhabitants of Braniewo regarding climate change and the operation of green infrastructure.

Recirculation of retained water: Urban raingarden at public swimming pool

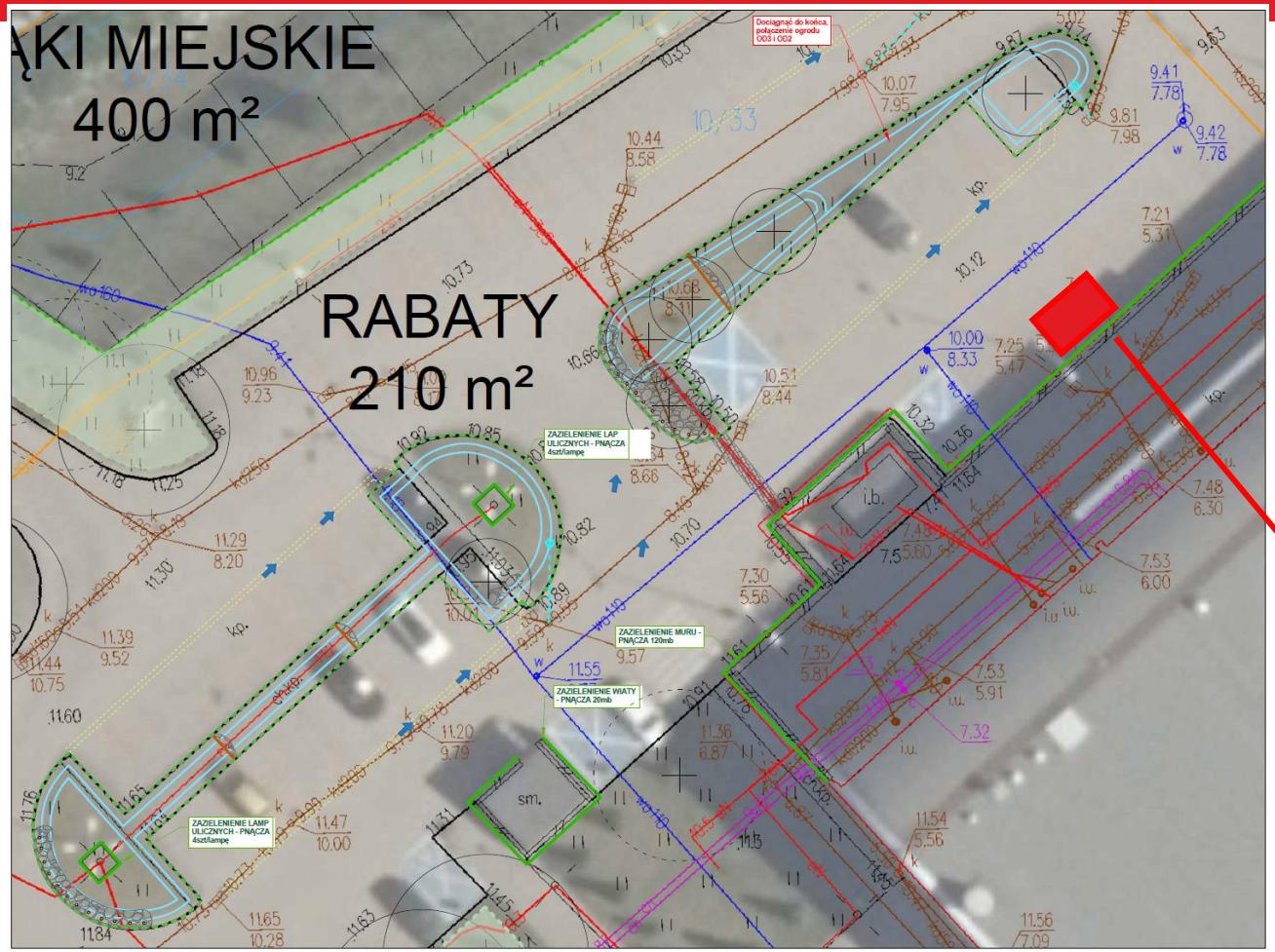
BENEFITS

1. no discharges or limiting the amount of rainwater discharged into the stormwater sewage system and its use for maintaining greenery- economic benefit
2. limiting the need to water the greenery with tap water on the premises - economic benefit- reuse of rainwater (CE)
3. lowering the ambient temperature - reducing the urban heat Island – ecosystem service benefit (human well being)
4. increasing biodiversity- ecosystem service benefit
5. improving the aesthetics of the place and creating a place of rest – ecosystem service (human well being)

Creating urban rain gardens in the Municipal Sports Centre

GDAŃSK UNIVERSITY OF TECHNOLOGY | RESEARCH UNIVERSITY EXCELLENCE INITIATIVE | OPTION 1

Creating urban rain gardens in the Municipal Sports Centre

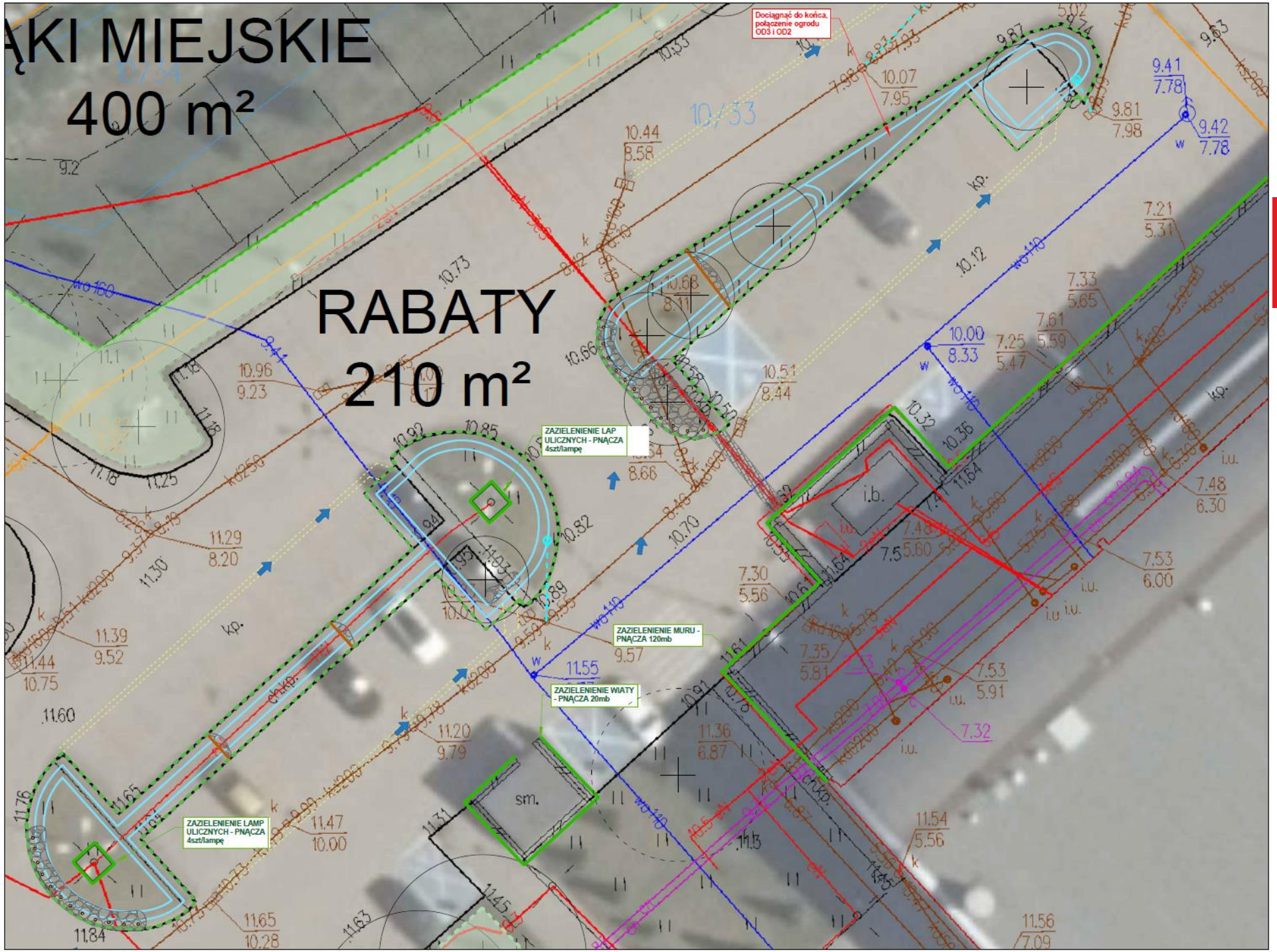


1. Flower meadow – 400 m²
2. Retention flowerbed – 210 m²
3. 2 parking places taken for greenery
4. Greening of street lamps - climbing plants
5. Greening of rubbish sheds - climbing plants
6. Greening the retaining wall - climbing plants

Closed retention tank (in the parking)

Esti[illegible] nd care instructions:

Option 1: 280,000 PLN net. (approx. EUR 63,500 net)


ĄKI MIEJSKIE
400 m²
RABATY
210 m²
Dociągnąć do końca, połączenie ogrodu OD3 i OD2
ZAZIELENIENIE LAP ULICZNYCH - PNĄCZA 4szt/lampę
ZAZIELENIENIE MURU - PNĄCZA 120mb
ZAZIELENIENIE WIATY - PNĄCZA 20mb
ZAZIELENIENIE LAMP ULICZNYCH - PNĄCZA 4szt/lampę
i.b.
sm.
kp.
i.u.

Interreg Baltic Sea Region

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Access the „BSR Water Recycling Toolbox" here.
https://www.eurobalt.org/waterrecyclingtoolbox/

SUSTAINABLE WATERS
WaterMan

The „BSR Water Recycling Toolbox" was elaborated as part of the project "WaterMan - Promoting water reuse in the Baltic Sea Region through capacity building at local level", The project is co-financed by the European Union (European Regional Development Fund) and implemented within the Interreg Baltic Sea Region Programme. More information:

eurobalt.org/WaterRecyclingToolbox
interreg-baltic.eu/project/waterman

WaterMan promotes a region-specific approach to water recycling, which intends to use the alternation of too much and too little water that has become typical in the Baltic Sea Region to make the local water supply more resilient, and supports municipalities & water companies in adapting their strategies.