



CONCEPT OF LANDSCAPE SANATION

OF "ALEJE TRZECH WIESZCZOW" CRACOW POLAND



MAIN GOALS

INCREASING THE NUMBER
OF BIOLOGICALLY
ACTIVE SURFACE

FROM **36%** TO **60%**

REDUCTION OF THE
URBAN HEAT ISLAND
EFFECT

REDUCTION OF CITY
NOISE

MORE SPACE FOR
RESIDENTS AND
VISITORS

REDUCTION OF CO2
EMISSIONS



Country / City POLAND / CRACOW
University / School CRACOW UNIVERSITY OF TECHNOLOGY
Academic year 2018 / 2019
Title of the project THE CONCEPT OF LANDSCAPE SANATION OF "ALEJE TRZECH WIESZCZOW"
Authors MSc Eng. Arch. Land. SZYMON ROMEK

TECHNICAL DOSSIER

Title of the project The concept of landscape sanation of „aleje Trzech Wieszczów”
Authors MSc Eng. Land. Arch. Szymon Romek
Title of the course Landscape Architecture
Academic year 2018 / 2019
Teaching Staff prof. dr hab. Eng. Arch. Katarzyna Łakomy, PhD Eng. Przemysław Kowalski
Department/Section/Program of belonging Faculty of Architecture
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University/School Cracow University of Technology



Written statement, short description of the project in English, no more than 250 words

The theme of the work is the concept of landscape sanation along Aleja Trzech Wieszczów. It aims to increase the biological and aesthetic value and improve communication standards of the place. The analyzes carried out were used to prepare guidelines enabling the synthesis of all information. The project improves the quality of space by increasing the amount of biologically active surface (from 36% to 60%), reducing the urban heat island effect, reducing CO2 emissions, noise level and improving the functional arrangement of the place mainly due to the division of road and rail transport into two levels, resulting in from design guidelines. The solutions used combine adjacent areas of public, semi-public and private greenery, in other words they fit into the philosophy of green infrastructure. The proposal of a wide green belt is a continuation of the rhythm given by the 'Planty Krakowskie' park , to improving the accessibility of green areas for local residents and improving the city's microclimate.



CLIMATE CHANGE AGAIN

11th International Biennial Landscape Barcelona

Barcelona September 2020

SCHOOL PRIZE

For further information
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LOCATION

Poland

Voivodeship Malopolska

Krakow



BASIC DATA

DATE OF PLACE CREATION

XXw

PROJECT AREA LENGTH

4KM

AVERAGE AREA WIDTH

45,3M

MAIN PROBLEMS

Insufficient amount of biologically active surface, little space for residents, high CO2 emission, high noise emission, urban heat island effect, dust emission PM 10, PM 2.5

Analysis of green areas, central parts of Krakow. The task was to combine green fragments into one co-functioning unity

PROJECT

MASTERPLAN PROJECTION

RETAIL 1

RETAIL 2

GREEN

SPECIES COMPOSITION

TREES TO 10m

- Aesculus x carnea* 'Briotti'
- Amelanchier x grandiflora* 'Franco'
- Betula utilis* 'Doorenbos'
- Carpinus betulus*
- Carpinus betulus* 'Columnaris'
- Gleditsia triacanthos*
- Prunus cerasifera* 'Nigra'
- Koelreuteria paniculata*
- Quercus robur* 'Monument'

TREES FROM 10m

- Acer saccharinum*
- Acer saccharinum* 'Pyramidale'
- Cercidiphyllum japonicum*
- Fraxinus excelsior*
- Gleditsia triacanthos* 'Sunburst'
- Liquidambar styraciflua*
- Platanus x hispanica*
- Tilia x europaea* 'Pallida'
- Tilia tomentosa* 'Varsaviensis'
- Ulmus x hollandica*
- Quercus robur*

BUSHES

- Buddleja davidi* 'White Profusion'
- Cornus alba* 'Kesselringi'
- Cornus Canadensis*
- Cornus sericea* 'Flaviramea'
- Hydrangea paniculata* 'Limelight'
- Pachysandra terminalis* 'Green carpet'
- Perowskia* 'Blue spire'
- Prunus pulmila var. depressa*
- Salix purpurea* 'Nano'
- Stephanandra incisa* 'Crispa'
- Taxus x media* 'Hillii'

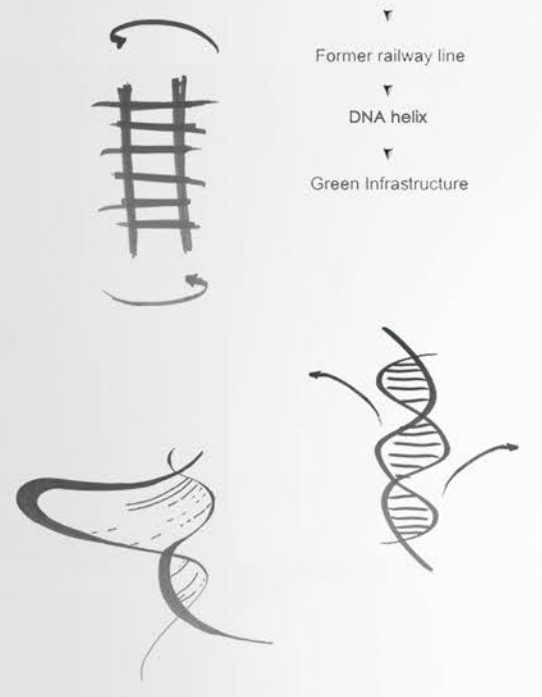
PERENNIALS AND GRASSES

- Alchemilla mollis*
- Asarum europaeum*
- Astible japonica* 'Deutschland'
- Calamagrostis acutiflora* 'Karl Foerster'
- Deschampsia cespitosa*
- Fargesia murielae* 'Jumbo'
- Helleborus niger*
- Hosta*
- Panicum clandestinum*
- Panicum virgatum* 'Shenandoah'
- Sesleria autumnalis*



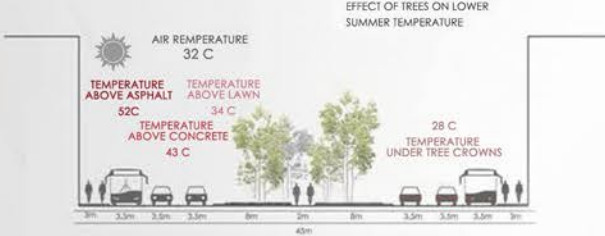


SCHEMATIC DIAGRAM



URBAN HEAT ISLAND EFFECT

The urban heat island effect is characterized by an elevated temperature in the city center, relative to the surrounding suburban areas. This phenomenon is called the island because, its outline resembles an island surrounded by a sea of cooler air. Temperature fluctuations can reach even 10 degrees Celsius and in record cases they are well above 12 degrees Celsius.

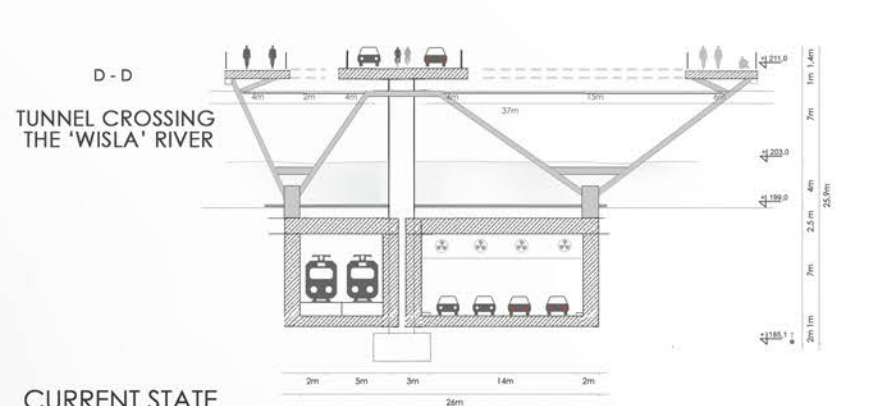
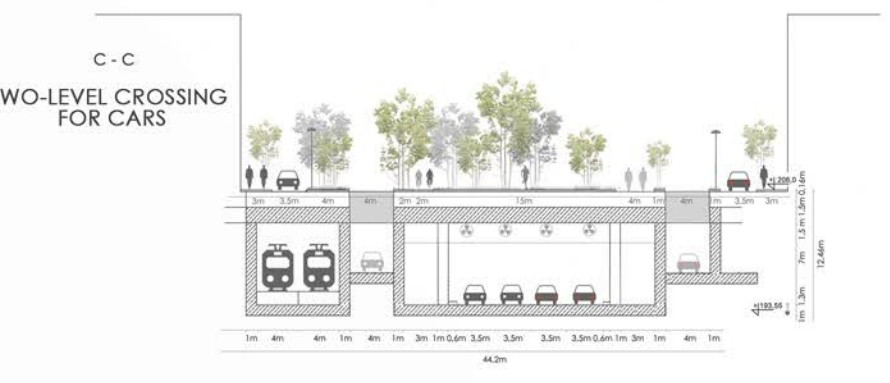
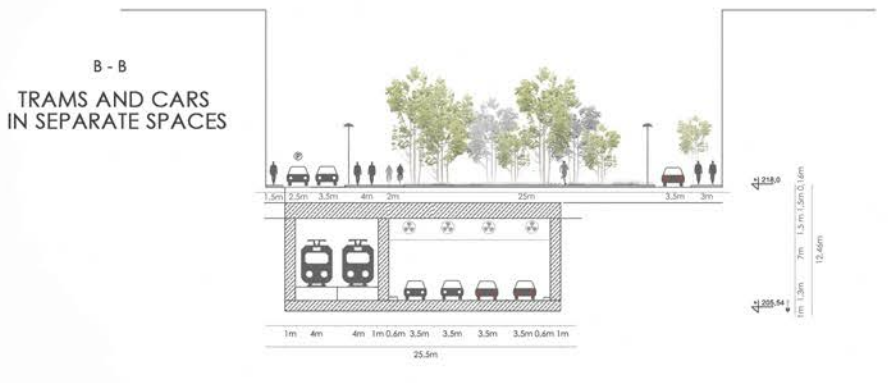
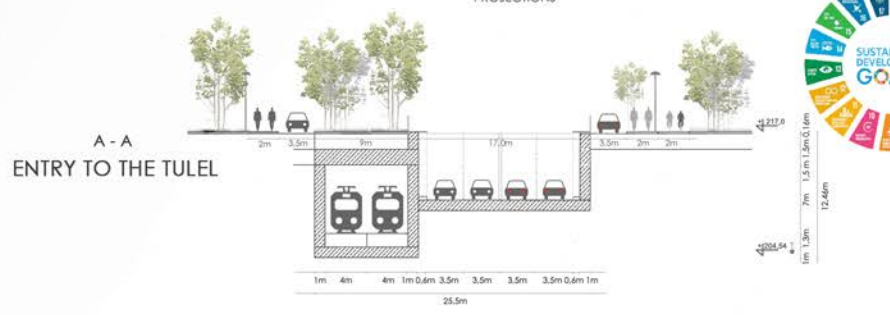
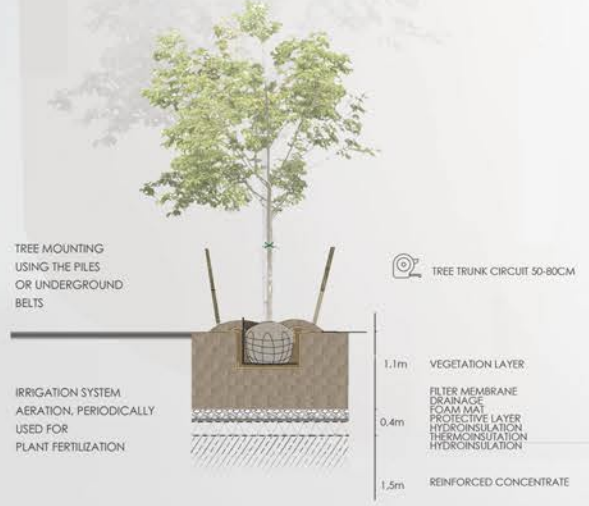


BIOLOGICALLY ACTIVE SURFACE ARE AVERAGE 36 %
OPTIMUM QUANTITY 40 % - 60 %

A large maple can evaporate over 265 liters of water per hour on a hot summer afternoon. The transpiration effect of one such tree can be compared to the performance of five average size air conditioners operating 24 hours a day.

PLANTING NEW TREES

PLANTING ADULT TREES AFTER FINISHED CONSTRUCTION WORKS OF THE CEILING. SIGNIFICANTLY SPEED UP THE BIOMASS REBUILDING IN ALEIA. DZEWNA IMMEDIATELY BECOME AN ATTRACTIVE HABITAT FOR BIRDS, FILLING UP SPACE ESTABLISHED DURING THE WORK AND PROVIDE SHADOW AND PROTECTION FOR VISITORS



CURRENT STATE
fot. aut. 3.2019



PARK FOR RESIDENTS

DETAIL 1

Terrain difference obtained using retaining wall, above ground acts as a city bench

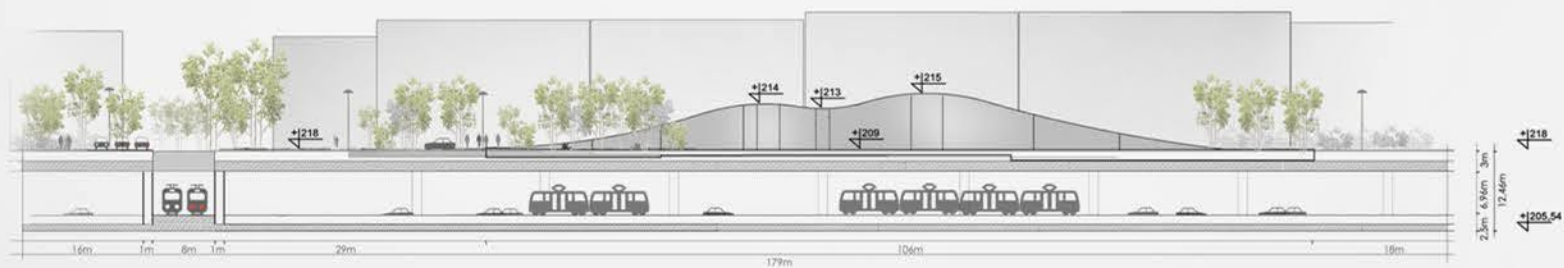
Service pavilion



SECTION F - F



SECTION G - G

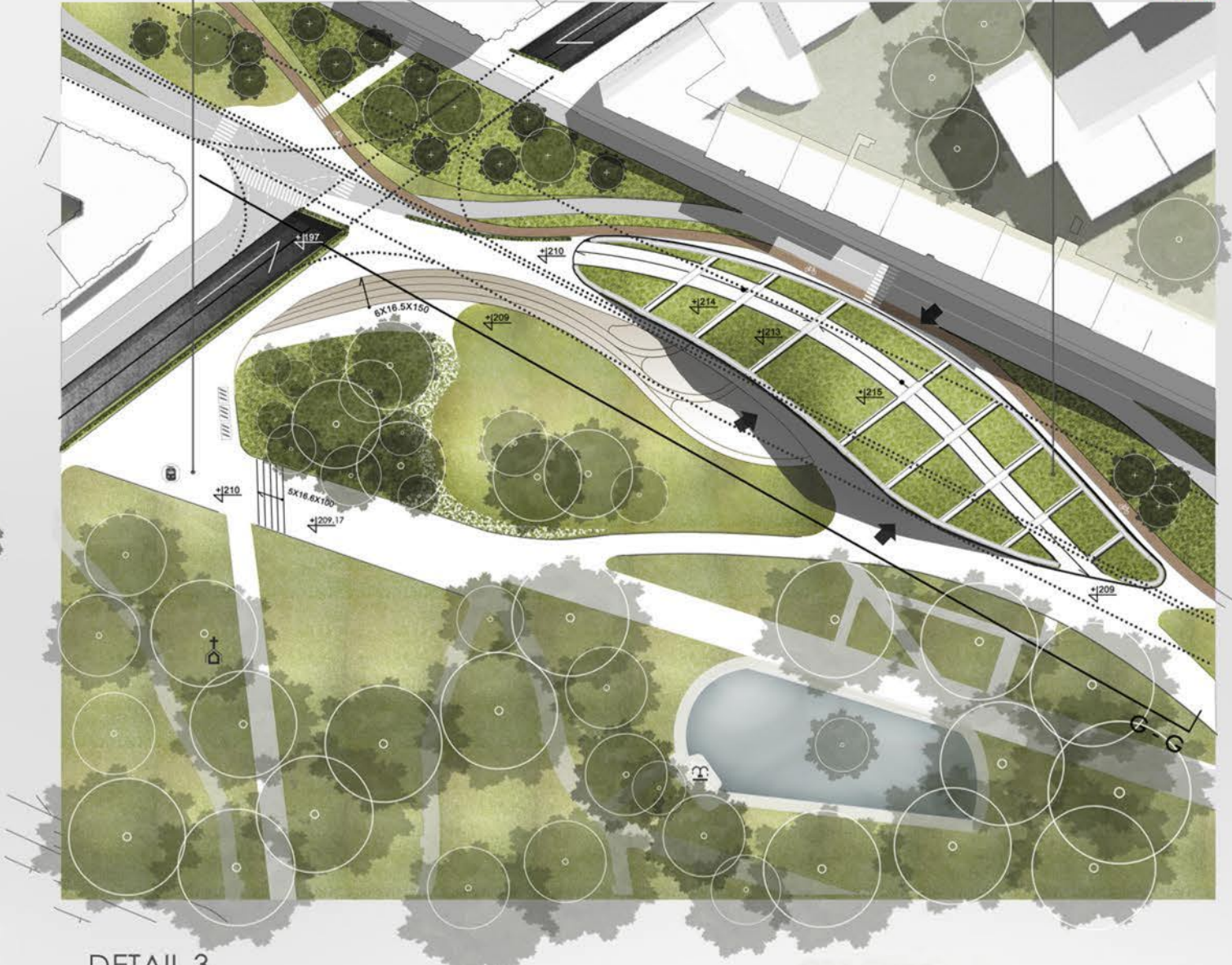


MAIN PAVILION

DETAIL 2

Vertical underground stop allowing movement between levels people with disabilities

Main service pavilion
The pavilion roof is covered with greenery intense divisions on the roof arise from the adjacent layout townhouses



DETAIL 3

REINFORCED WALL, CEILING TUNNEL WITH LAYER VEGETATION

- 1.55 m VEGETATION LAYER
- 0.02 m FILTER MEMBRANE
- 0.20 m DRAINAGE
- 0.03 m FOAM MAT
- 0.01 m HYDROINSULATION
- 0.15 m TERMOINSULATION
- 0.01 m HYDROINSULATION
- 1.50 m CONCRETE CEILING
- 0.75 m VENTILATION INSTALLATIONS
- 0.10 m DECORATIVE PANEL

LAYING GRAVEL LAYER SEPARATED FROM A LAWN ALUMINUM TAPE
A SEAT MADE OF LIGHT SIBERIAN LARCH WOOD

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