

# Investments

SPECIAL ISSUE OF LUMAT NEWSLETTER / JULY 2019

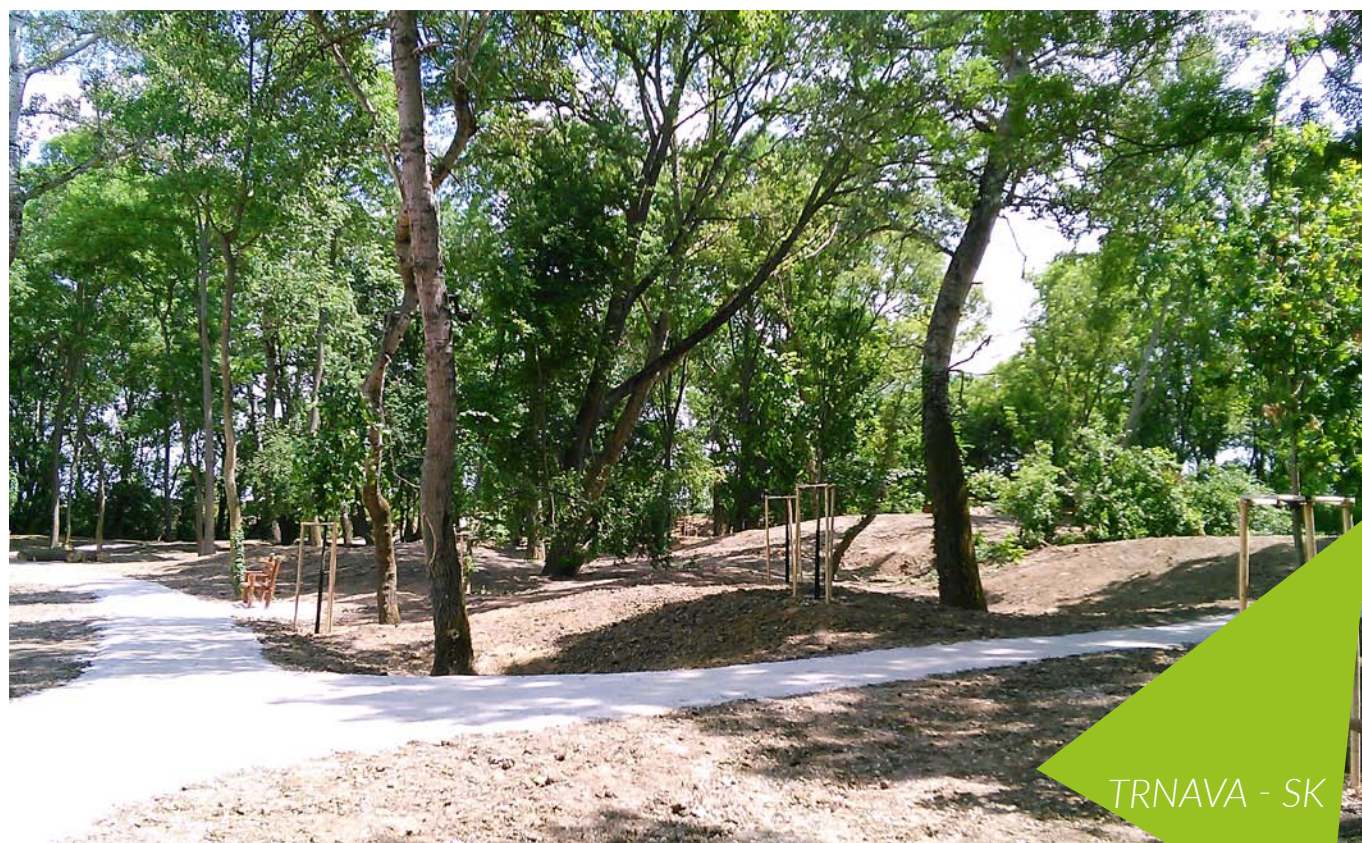
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LUMAT



RUDA ŚLĄSKA - PL



TRNAVA - SK



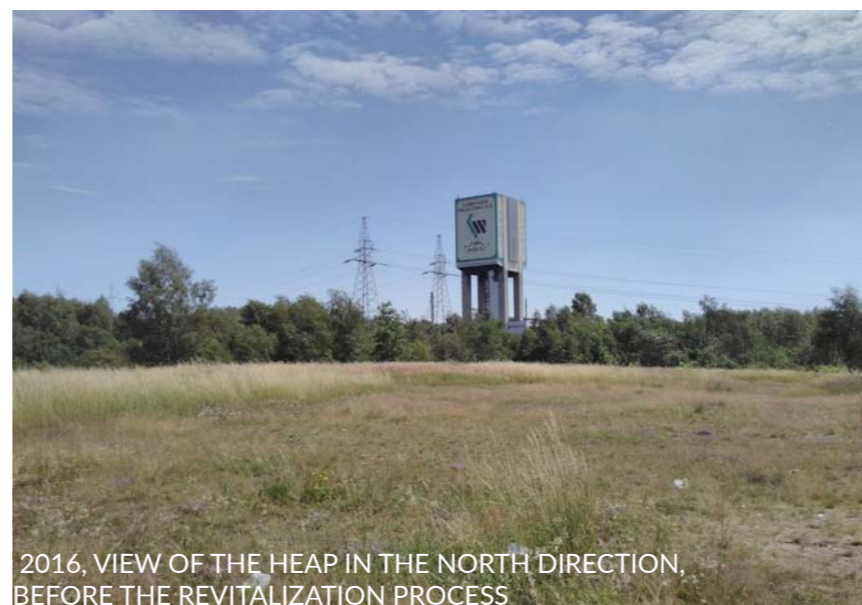
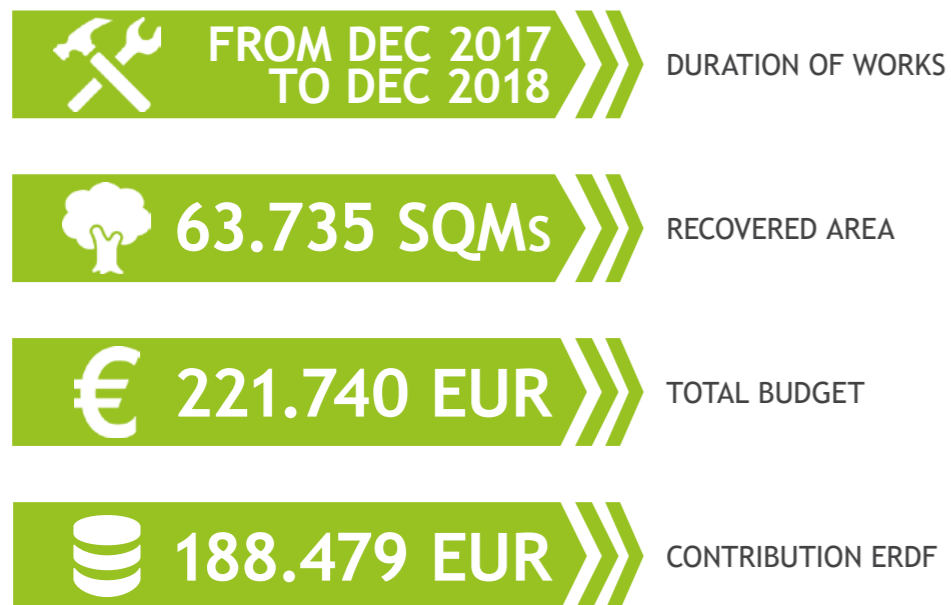
# HEAP REVITALIZATION IN RUDA ŚLĄSKA

## SHORT SUMMARY

Main problem and target of actions designed for the area of the zinc spoil heap in Ruda Śląska was soil contamination and the process of the situation improving with remediation, to reach safe open recreation space. Using the phytostabilization method top of the heap was covered with clay, new soil layers and specially selected grass species. That will prevent inhabitants from the contact with dangerous substances. Additional targets that were achieved: to mitigate dangerous sharp and high crags on the northern heap edge; build possibly low cost in maintaining and vandalism resistible leisure infrastructure with possibly broad offer, consisting of playground, walking paths, viewpoints, bicycle track, open-air gym, BBQ areas with wooden tables and benches, hammocks and a game field. It was also important to create the best possible green public space, strongly connected with local identity and history, so a few educational boards were placed along the main paths. Urban and architectural design for the whole heap, forming of the top the heap and its northern slope with the remediation of topsoil by using the phytostabilization method, and also works related to the implementation of underground technical infrastructure (like lighting, monitoring) were made within the LUMAT Project funds. The remaining elements of the area (like urban furniture, playground, educational boards, paths, lighting etc.) were realized within the framework of the „TraktRudzki” (main path creating green core in the city), co-financed by the EU Infrastructure and Environment Operational Program 2014-2020.



2019, VIEW OF THE REVITALIZED SPOIL HEAP TO THE SOUTH-WEST DIRECTION

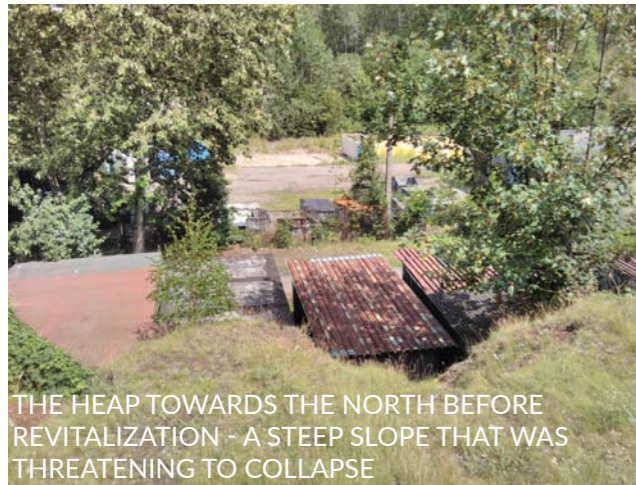


2016, VIEW OF THE HEAP IN THE NORTH DIRECTION, BEFORE THE REVITALIZATION PROCESS

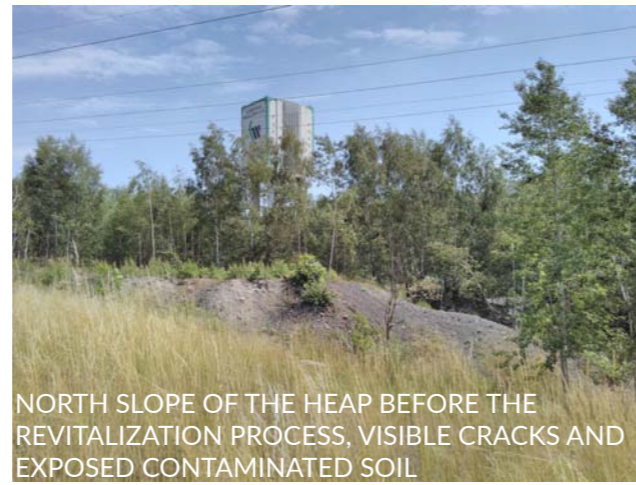


2019, REVITALIZED GREEN PUBLIC SPACE ON THE SPOIL HEAP - OPENAIR GYM





THE HEAP TOWARDS THE NORTH BEFORE REVITALIZATION - A STEEP SLOPE THAT WAS THREATENING TO COLLAPSE



NORTH SLOPE OF THE HEAP BEFORE THE REVITALIZATION PROCESS, VISIBLE CRACKS AND EXPOSED CONTAMINATED SOIL

## DESCRIPTION OF LOCAL PILOT APPLICATION

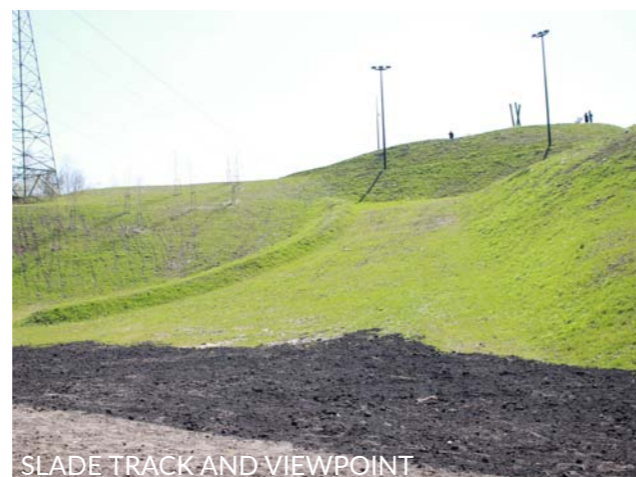
Development of project documentation started in November 2016, and was done till the end of July of 2017 and finalized by getting a building permission on the 18th of September 2017. Time limit for works completion of revitalization of the zinc heap: started on the 13th of December 2017, finalizing on the 2nd of June 2018.

During that time works done were as follow: cutting down trees colliding with the investment; ground works, levelling north slope of the heap, forming of the view point and levelling top of the heap; works related to the implementation of underground technical infrastructure (like lighting and monitoring); remediation of topsoil by using the phytostabilization method on the top of the spoil heap; covering northern slopes with clay and new soil layers, metallophyte plants were replaced with proper safe species, playing field on the top of the heap was made.

Southern slope remained nearly untouched with minor activities provided. For southern slope gradual exchange of plant species has been planned. In the middle of the heap top view point was formed as a hill about 4 m high. That was made of spoil heap material and covered by clay, soil and sown by grass. There had been also planted groups of trees, with use of native species (like birches, oaks and ash trees). With co-financing by the EU Infrastructure and Environment Operational Program 2014-2020, there were done all other works related with implementation of urban and architectural design (elements of "urban furniture"): a lunette, some benches and educational path point, tube-tunnels for children to play around the playing field, grill areas, concrete hammocks, educational boards, open air gym and so on. By the center of the area there was built a main path joining 1st Maja Street with "TraktRudzki" path.



VIEWPOINT AND AN EDUCATIONAL BOARD



SLADE TRACK AND VIEWPOINT

## REWITALIZACJA HAŁDY W RUDZIE ŚLĄSKIEJ

Głównym problemem i celem działań zaprojektowanych dla obszaru hałdy cynku w Rudzie Śląskiej było zanieczyszczenie gleby oraz

proces poprawy sytuacji poprzez rekultywację, w celu osiągnięcia bezpiecznej otwartej przestrzeni rekreacyjnej.



CONCRETE HAMMOCKS HANGERS IN REVITALIZED AREA

Poprzez zastosowanie metody fitostabilizacji szczyt hałdy został pokryty gliną, nowymi warstwami gleby i specjalnie dobranymi gatunkami traw. Zapobiegnie to kontaktowi mieszkańców z niebezpiecznymi substancjami. Dodatkowe cele, które zostały osiągnięte: złagodzenie niebezpiecznych pęknięć oraz stromizn na północnej krawędzi hałdy; zbudowanie możliwie taniej w utrzymaniu oraz odpornej na wandalizm infrastruktury rekreacyjnej z szeroką ofertą, obejmującą plac zabaw, ścieżki spacerowe, punkty widokowe, ścieżkę rowerową, siłownię na świeżym powietrzu, miejsca do grillowania z drewnianymi stolami i ławkami, hamaki i boisko.

Ważne było również stworzenie możliwie najlepszej zielonej przestrzeni publicznej, silnie związanej z lokalną tożsamością i historią,

dla tego wzdłuż głównych ścieżek umieszczono kilka tablic edukacyjnych. Projekt urbanistyczno-architektoniczny dla całej hałdy, ukształtowanie wierzchu hałdy i jej północne zbocze wraz z rekultywacją wierzchniej warstwy gleby metodą fitostabilizacji, a także prace związane z realizacją podziemnej infrastruktury technicznej (np. oświetlenie, monitoring) zostały wykonane w ramach funduszy projektu LUMAT. Pozostałe elementy terenu (np. meble miejskie, plac zabaw, tablice edukacyjne, ścieżki, oświetlenie itp.) zrealizowano w ramach „Traktu Rudzkiego” (główna ścieżka tworząca zielony rdzeń w mieście), współfinansowanej przez UE Program Operacyjny Infrastruktura i Środowisko 2014-2020.



## INVOLVEMENT OF TARGET GROUPS

Due to the high spatial and environmental degradation of the Wirek district, in which the heap is located, as well as the lack of any green public spaces of a park character, it was decided to transform the wild, neglected, but located in the heart of the district and city, zinc dump. Of course, before a decision was made to use the heap, a number of social consultations, workshops and surveys were carried out as part of the project.

Activities preceding the revitalization process were made to provide social participation and were led in the first half of 2016. Meetings with inhabitants of local community were organized and gave range of expectations and propositions, that influenced prime conception plan for the area. Before ground works started there were another meetings with local community organized to present effects of the public consultation and the final design. At the beginning of September 2018, as part of the local community participation, there was a competition announced for the new name of the revitalized space on the heap.

The revitalized spoil heap became a part of the green spine of the city, connecting the northern part of the city with the south, while simultaneously binding existing and planned parks and public spaces.

That way central commercial district of the city got a pedestrian-bicycle connection with the service district - Nowy Bytom, as an alternative to automobile roads. By creating a new green public space, which is safe for health, a green link has been created, as an important part of the district in particular, and also of the city.

By improving communication, the health of residents have improved by promoting a healthy lifestyle.

There is also an educational aspect (educational boards, witnesses of history such as a sintering pan, dolomite lump, metallurgical tanks, "rock witness").

Currently, the object is visited by several dozen people a day, and at the weekend even several hundred.



PERSPECTIVE FROM THE TOP OF THE REVITALIZED SPOIL HEAP TOWARDS THE SOUTH - WEST



PLAYGROUND, LOCATED AT THE SOUTH SLOPE OF THE REVITALIZED HEAP

## LESSONS LEARNED

The pilot area in Ruda Śląska was a place where the phytostabilization process was tested for the first time in the area of that size (6,5 ha), that was a public greenery space, so not only the method could be tested in a non - laboratory environment but could also become an example of good practice in sustainable land use development, dealing with soil contamination, postindustrial areas and connected to it social problems. That might become a suitable source of experience for not only LUMAT project partners but also other degraded areas, scientific communities and most of all other cities in FUA. The investment in Ruda Śląska has constituted an example of solving a problem of a negative impact of polluted large brownfield located in the middle of a city. The investment is a result of the pilot action concept discussed within the LUMAT project consortium. The pilot design was a result of both discussion in the consortium and at public meetings, at which the inhabitants have expressed their wishes and expectations concerning the future form and functions of the regenerated area. The whole process of the pilot implementation has been followed step by step by the transnational group of the project partners, therefore it could show how to deal with a problem of regeneration of a contaminated large post-industrial site in a practical way at a relatively low cost.

THE PILOT AREA IN RUDA ŚLĄSKA WAS A PLACE WHERE THE PHYTOSTABILIZATION PROCESS WAS TESTED FOR THE FIRST TIME IN THE AREA OF THAT SIZE (6,5 HA)



TOWARDS GREEN URBAN AREAS (© M.FUDALA)



## ENSURING THE SUSTAINABILITY OF USE

The properties covered by the project are the property of the Municipality of Ruda Śląska. For the purposes of the project implementation, in order to better coordinate the complexity of investment activities, the City received, by way of donation plots owned by the mining entity. The entire investment area will be maintained and managed by the municipal company MPGM TBS Sp. z o. o., based on the separate agreements.

Revitalization design for zinc spoil heap in Ruda Śląska is an attempt to solve as many problems as possible. According to the sustainable development rules there were taken under consideration technology of remediation and phytostabilization and were applied to all accessible area. On the northern slope there were the most heavy works of land formation, so to neutralize all health hazards connected with contamination and sharp crags, the slope was flattened and ground surface was covered with clay and new clean soil layer.

Central area of the top of the spoil heap was treated with the phytostabilization method and the southern slope was maintained in the way to rebuild a flora structure and to get a new plant cover not concentrating heavy metals in the above ground shoots. On that area recreation activities are highly limited.

All solutions are meant to provide safe environment for people to rest, spend their leisure time and do sport activities with no health threat.

Some limited parts of the area were left untouched to preserve local flora and provide source for natural succession. To support biodiversity nearly all designed trees are native. Most grass species except ornamental miscanthus are native too. Only groups of shrubs obscuring electricity transformer stations are introduced using ornamental plants with the highest drought tolerance. Various small architectural forms and sport facilities were applied, designed in a form referring to local heritage and identity.



REVITALIZATION DESIGN FOR ZINC SPOIL HEAP IN RUDA ŚLĄSKA IS AN ATTEMPT TO SOLVE AS MANY PROBLEMS AS POSSIBLE

TUBE - TUNNELS FOR CHILDREN TO PLAY WITH A VIEW OF HOUSING ESTATE FROM THE BEGINNING OF THE TWENTIETH CENTURY (©M.FUDALA)

Educational path is providing information about history of the place, industry connected with the area, local flora and fauna and sustainability issues.

Spatial and architectural solutions are legible and easy to use. Small architectural elements, including information elements, are resistible for vandalism, easy to maintain, and will not be expensive during repairs or if exchange is needed. All solutions were designed to follow spatial, social, economic and natural demands of sustainable development, following ideas of green urbanism, the local action for biodiversity, European Landscape Convention and others.



CLIMBING WALLS FOR CHILDREN



CONCRETE CUBES AS VIEWPOINTS WITH EDUCATIONAL BOARDS INSIDE THEM





WATER SURFACE WITH MARSHY VEGETATION PLANTED

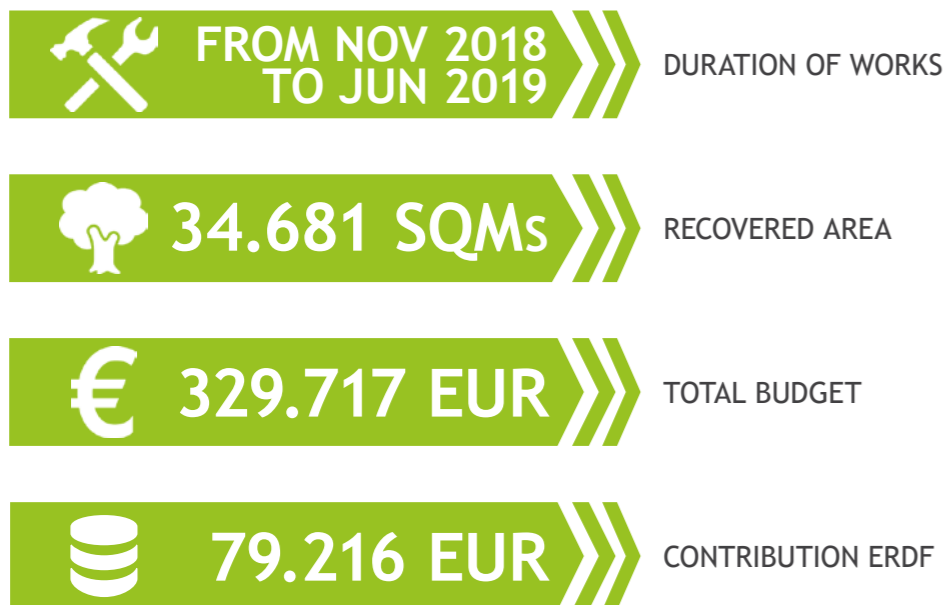
## RESTORATION OF NEGLECTED NATURAL PARK “ŠTRKY”

CITY OF TRNAVA AIMED TO COMPLETELY REVITALIZE THIS BIOCENTRE OF LOCAL IMPORTANCE

### SHORT SUMMARY

Through restoration of neglected natural park “Štrky” (in English “Gravel”) the City of Trnava aimed to completely revitalize this biocentre of local importance, to increase, respectively to bring back former ecological value and stability to this long term abandoned and unmaintained area and last but not least, to reshape it into natural, safe, attractive and publicly accessible spot widely used for sport, relax and leisure activities of the Trnava FUA inhabitants.

Moreover, by the means of this pilot investment implemented within LUMAT CE89 project, the City of Trnava provided interesting example of a greenfield revitalization which could be beneficial for and replicable in other Central Europe regions.



ŠTRKY SITE, JANUARY 2019



ŠTRKY SITE, JUNE 2019



## DESCRIPTION OF LOCAL PILOT APPLICATION

Within the Štrky pilot investment started in 11/2018 the whole area was cleaned up, ill, invasive and damaged trees and bushes were removed, and the site was prepared for deepening the water surface which is a central point of the whole investment. Accordingly, water basin was excavated, basin strands were adjusted and all related technical

components, such as water well and pumping system were constructed. Simultaneously during the 2 - 5/2019 a network of unpaved gravel and wooden chips pavements was created, the area was connected to the electricity grid and public lighting columns were raised.

Moreover, small architecture and mobiliary such as wooden benches and dustbins together with wooden resting shelter and circular stone grill were placed in the area. Within the whole site also bird and bat booths were distributed in line with ornithological survey undertaken within the investment implementation.

And finally, during 6/2019 vegetation and greenery was realized - new broadleaved trees were planted, together with water and marshy vegetation planted around two lagoons of the water surface as well as grass and meadow seeds were spread in the whole area. Also, information billboards together with the INTERREG Central Europe permanent plaque were installed at the site entrance and around the water surface.



PHASES OF RESTORATION WORKS

## REVITALIZÁCIA VYMEDZENÉHO ÚZEMIA LESÍKA ŠTRKY

*Prostredníctvom revitalizácie vymedzeného územia lesíka Štrky Mesto Trnava zabezpečilo kompletnú revitalizáciu tohto biocentra miestneho významu, čím sa zvýšila, respektíve bola tomuto dlhodobo opustenému a neudržiavanému územiu prinavrátená jeho ekologická hodnota a stabilita, dosiahne sa priaznivý vplyv na mikroklimu v mestskej funkčnej oblasti Trnava a lokalita sa sprístupnila*

*pre rekreačné, športové a voľnočasové využitie širokej verejnosti v okolí mesta. Zároveň, prostredníctvom tejto pilotnej investície realizovanej v rámci projektu LUMAT CE89, Mesto Trnava poskytlo zaujímavý príklad revitalizácie greenfieldu, ktorý môže byť prínosný a aplikovateľný aj v iných regiónoch strednej Európy.*



WOODEN CHIPS PAVEMENT



GRAVEL PAVEMENT



BAT BOOTH



## INVOLVEMENT OF TARGET GROUPS

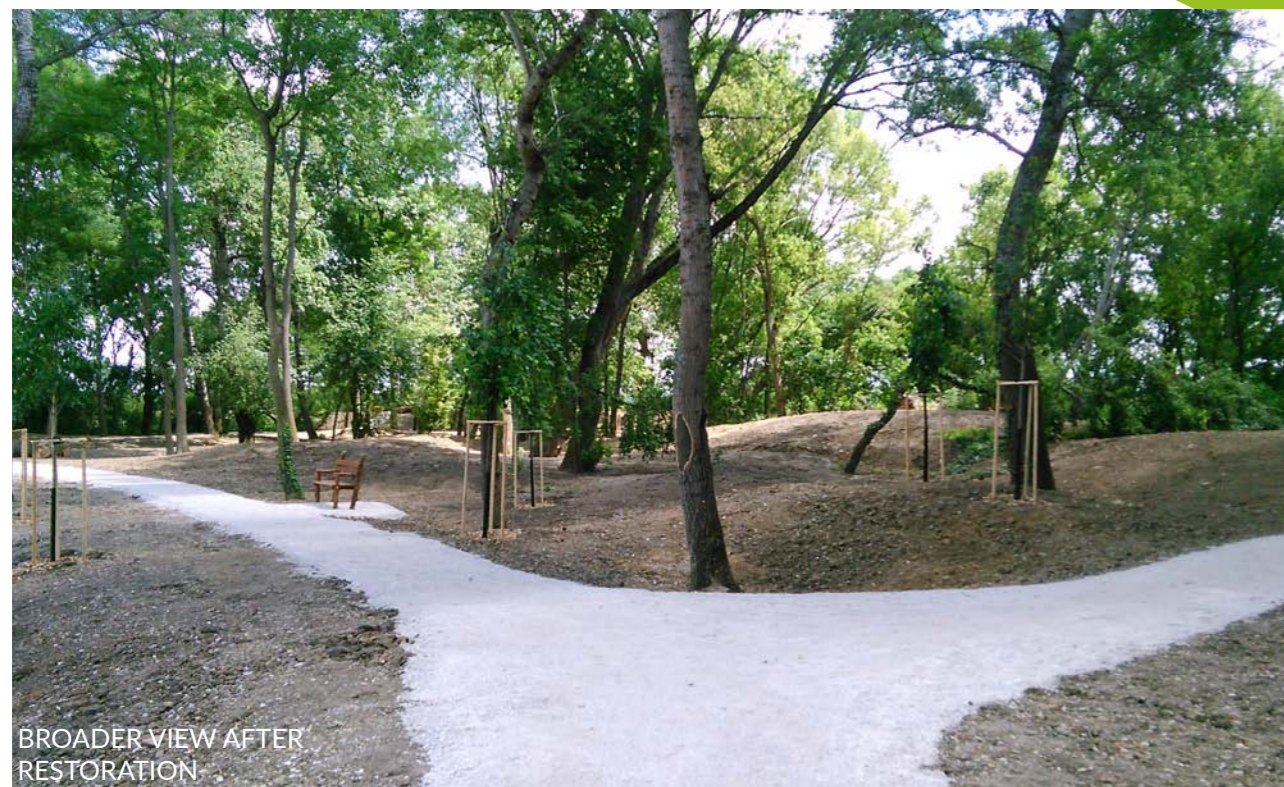
As the Štrky area had been abandoned, unmaintained and thus more less “forgotten” for rather long time, there is no local community such as.

Before the investment implementation mainly homeless people had been dwelling there and anonymous local people had been dumping their waste there as well.

However, thanks to the site restoration this situation started changing and already during construction works local people began wandering around this area.

For the City of Trnava this means important and positive signal that people should be interesting in visiting this place and spending their time there and thus it is necessary to commence active and continuous work with local community, inhabitants of the Trnava City and the Trnava FUA, so that the site will be operated and maintained smoothly by the city and the local people as well as visitors will not only appreciate it, but also preserve it and behave there with responsibility and respect towards the nature and the site themselves.

THANKS TO THE SITE RESTORATION, THIS SITUATION STARTED CHANGING AND ALREADY DURING CONSTRUCTION WORKS, LOCAL PEOPLE BEGAN WANDERING AROUND THIS AREA AND APPRECIATING ITS NOTABLE CHANGE



BROADER VIEW AFTER RESTORATION



NEW WATER SURFACE

## LESSONS LEARNED

Upon the Štrky pilot investment completion “lessons learned” could basically refer “only” to the implementation phase including also preparatory phase, mainly elaboration of the site restoration design.

Although “lessons learned” from the operational phase will probably be the most important, as this phase will be the longest and will reflect the quality of construction on one hand and the behavior / attitude of the local community on the other, such experiences could be reported by the end of the operational phase or at least after some time of the site operation.

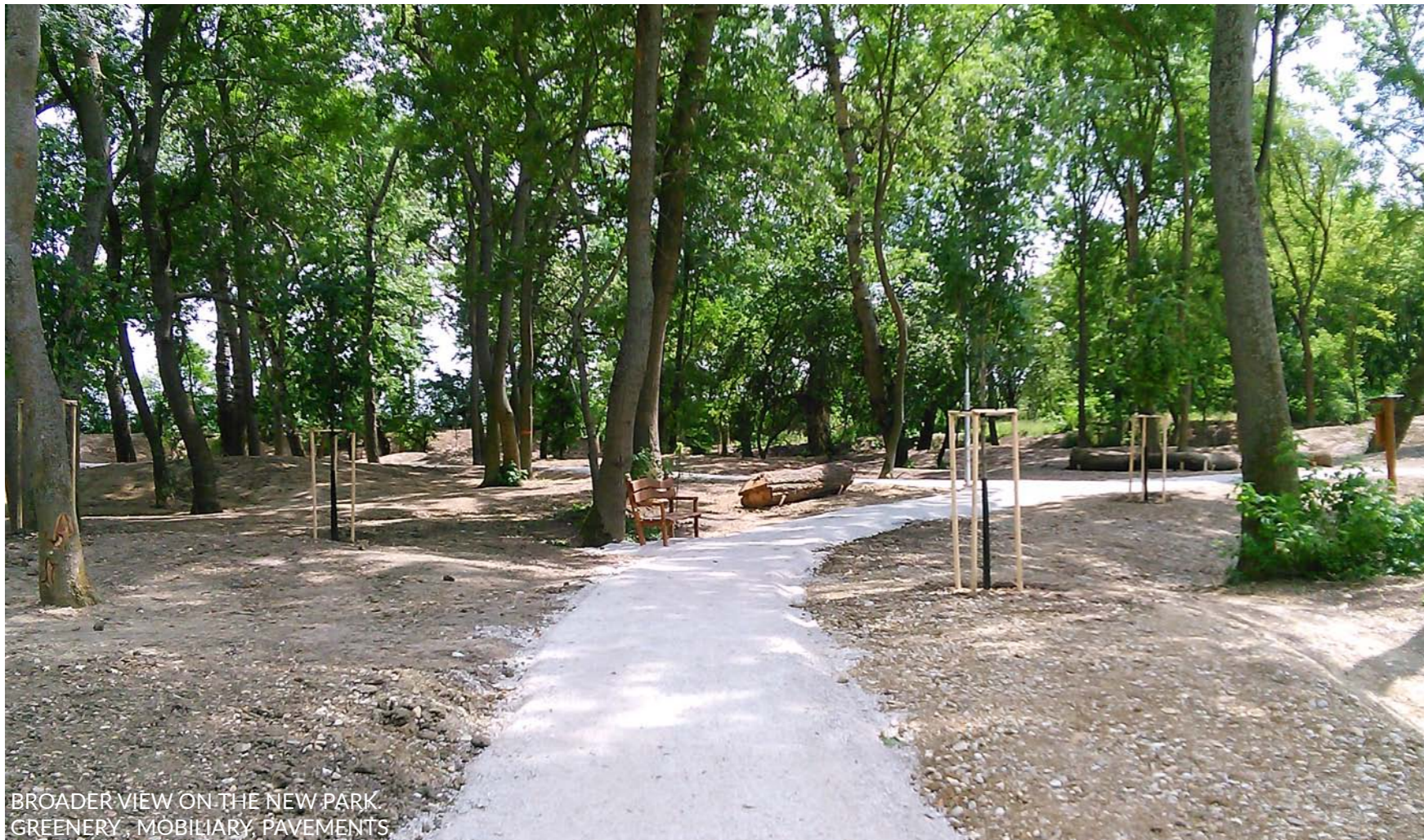
However, regarding the preparatory phase, including mainly elaboration of the project documentation for spatial decision and realization project documentation for building permit issue the City of Trnava learned that, as much as possible attention should be paid

to preciseness of the technical details in order to avoid unexpected situations during the implementation phase leading to “extra works” and additional expenditures.

For example, in case of the Štrky pilot investment almost double amount of earth had to be excavated during the water surface deepening, what led both to extra works and additional expenditures as well as to further consequences related to correct placement of this extra earth and the overall terrain adjustment.

There could be found more technical lessons learned and detailed technical recommendations for other municipalities or public authorities interested in or facing an issue of similar greenfield restoration.





BROADER VIEW ON THE NEW PARK GREENERY, MOBILIARY, PAVEMENTS



PERMANENT PLAQUE ABOUT THE LUMAT CO-FUNDING

## ENSURING THE SUSTAINABILITY OF USE

The Štrky pilot investment was realized on land owned by the City of Trnava and the whole restored site is owned by the city as well. Thus, the city is responsible for the site operation and its maintenance during the project sustainability and after it also. However, maintenance of vegetation and greenery during the 1. year of the site operation will be under responsibility of the supplier contracted for construction works - company Swietelsky-Slovakia, spol. s r.o., Bratislava, Slovakia. This supplier will be responsible for the overall maintenance of newly planted trees, grass and meadow coppices as well as of water and marshy vegetation. By this “mechanism” the city also aimed to ensure high quality planting during the construction phase itself. After this 1. year maintenance, the Štrky area will be completely maintained by the

Administration of Sporting and Cultural Facilities, which is the city’s „daughter” organization and covered from the city’s own sources.

Here all the details, responsibilities and workflows should be specified after the pilot site commissioning and its putting into operational phase.

As the whole area is not going to be paved, in order to protect safety and proper order also a possibility to have supervised the whole area by the city police might be considered.

As these police is established by and subject to the City of Trnava, there should not be a problem to elaborate such possibility and if necessary, to include regular supervision of the Štrky site into the city police regular responsibilities.



NEW GRILL ZONE



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