



Brno – Rainwater management in Pod Plachtami Park

Brno, Czech Republic

IN A NUTSHELL

The Pod Plachtami Park, located in the district Nový Lískovec of the city of Brno, was designed as a solution to rainwater management and overloaded sewerage. This adaptation measure is providing a green recreational space for citizens to enjoy and improving the biodiversity of the district.

Why build a park to manage rainwater?

The district Nový Lískovec of Brno decided in 2006 to start a process to develop a plan that would help the area to respond to multiple challenges with green infrastructure: reduce stress on the sewage system, mitigate the urban heat island effect, improve biodiversity, and provide citizens with a recreational area.

During torrential rains, the district suffered from overloaded sewerage. The insufficient capacity of the rainwater sewage system prevents further housing construction in the district and increasing the capacity of the sewer system is extremely costly. The district, in a cooperative process with residents, started to think about an alternative solution for the development of green infrastructure, a park with a lake, to retain the rainwater from the neighboring flats.

The way it works is that the lake, which has an operating level of 630 m², receives the rainwater flowing from the roofs of the three neighbouring blocks of flats. During torrential rains, the operating level of the lake can reach up to 890 m². The rainwater flows from the roofs to the lake by a system of tubes and the last 50 metres of these tubes in an open canal.

The quality of the water, indicated by the oxygen level and the presence of nutrients, was measured during the first two years of the lake's operation, to ensure the safety of citizens. At present, given the high level of biodiversity that characterizes the water basin, there is no need to continue monitoring the water quality as it ensures a safe and healthy environment for residents and animals alike. Another climate risk of the area of Nový Lískovec is frequent droughts and increased heat due to its location on a southern slope. Therefore, the creation of a park with a lake also had positive effects on resilience and comfort by lowering the temperature generated by the housing estate in the area.



Pod Plachtami Park
© district Nový Lískovec

BRNO



Population:
377,973

Area
230.19 km²

**Signatory
to the Covenant
of Mayors since:**
2017

**CO₂ emission
reduction target:**
40% by 2030

Lessons learnt

The first lesson learnt in the creation of the park was the need to keep control over the biodiversity of the area to help balance invasive species. During the first year after the lake was built, the invasive fish species of Stone Moroko and the Prussian Carp multiplied in number and destroyed much of the biodiversity of the park. This was quickly solved by the introduction of predatory fish species. Another maintenance issue was the damage of the park's sluice during its fifth year of operation. Consequently, the lake was emptied, and the fish and other living organisms were caught. Once the sluice was repaired, the bottom of the lake was cleaned and refilled; and the plants and biodiversity of the park quickly recovered.

At the beginning of the project, the district organised workshops with locals to discuss their expectations and wishes for the park. Citizens were hesitant at first towards the construction of a lake near their homes, fearing it could bring mosquitoes and unpleasant odors to the area. However, once the infrastructure was completed, these fears were never confirmed, and the lake, along with the biodiversity created as a result, became very attractive among children and the elderly.

Environmental and social benefits

Besides establishing an innovative rainwater management solution in an urbanised area, thus reducing the stress on the sewage system, the project produced a wide range of environmental and social benefits. The existence of the lake results in the creation of a microclimate with humidity, lower temperatures and dust. The project has also created a home for a wide range of living organisms, from vegetation, pink and white waterlilies, to birds, amphibians, insects and small mammals. The park is a completely natural habitat in which the water is oxygenated when flowing through a rocky trough and purified by the living organisms in and around the lake. Hence, no technical equipment is needed to clean the water and in case of water shortage for the proper functioning of the lake's habitat, this can be replenished from a deep well near the park.

The Pod Plachtami park has become a recreational space for its residents. A nature trail has been installed with information boards on the park's biodiversity, the composition and history of the area, and the project's solution to rainwater management. The boards also have a QR code through which smartphone users can connect to the main website for more detailed information. The park also has a children's playground and has welcomed the celebration of sports events, such as the charity 'Run in colours' with more than 2,000 participants.



KEY FIGURES

32,000 m² of green park area

Maintenance annual cost does not exceed **€12,000**

Expected lifetime to be **50** years



FINANCING THE PROJECT

- + Financing source(s):**
17% was funded by the Statutory City of Brno, Brno – Nový Lískovec district, and the State Environmental Fund - and the remaining amount was funded by the EU Cohesion Fund and the European Regional Development Fund
- + Total project budget:**
€470,000

USEFUL LINKS

► <https://bit.ly/3dUiEUD>



CONTACT

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