

## **Diploma thesis**

### **Pražské mokřady**

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## **Review**

In times of climate change, the management of rainwater in urban areas is becoming increasingly important. It is not only a matter of delaying water runoff or allowing it to infiltrate into the ground, but also of keeping it available for plants over longer periods of time to bridge periods of drought. In this complex environment, the author Petr Stojanek has succeeded in developing convincing ideas on how stormwater management can be established in the city of Prague on the surfaces of public schools in an exemplary manner.

In the comprehensive and thorough analysis, the entire urban area is considered. On the basis of correctly selected criteria, both the natural spatial bases and the potentials and limiting urban conditions become clear. Correctly, especially the special topographical situation of the city as well as the division into different urban typologies is examined. They are essential framework conditions for the design and dimensioning of rainwater storage. It is emphasized that the possibilities for stormwater management depend to a large extent on the urban density. The conclusion of differently shaped urban wetlands in the peripheral areas and a more urban (built) character in the denser inner city is well comprehensible. These analytical considerations are not only a basis for the model consideration of the school areas but can also be used as a basis for the further development of the topic in the city as a whole.

In the following chapter, the consideration of international examples helps a lot to make use of the already existing experiences in urban stormwater management. The author succeeds in finding very typical projects for this, which describes well the breadth of possibilities and the measures in different urban situations. Furthermore, a more in-depth analysis shows which functional elements the different projects consist of and into which typologies they can be grouped. This methodological approach is very helpful to find an equally coherent system in the application of the principles to the school areas. Particularly noteworthy is the author's ability to present complex relationships in clear graphics, although some functional questions remain unanswered in detail. A diverse repertoire of urban wetlands (even including rooftop and façade areas) emerges from these investigations, applicable to a variety of situations. The presentation of the integration of tree planting into these areas would have been appreciated in a bit more detail, as the management of urban trees during dry periods is a current issue in climate change adaptation.

For the model study of scenarios of adaptation, the author chooses the typology of school plots. This is a very reasonable choice, since these plots are characterized by a great diversity, with which many situations can be explained. Also, the plots are publicly available, so there is also a certain chance of implementation under the responsibility of the city of Prague. With the differentiation of sites in the historic center, the compact city and the outskirts, the urban density is also used as a criterion, with

which very different approaches to solutions can be described. In a convincing manner, the author succeeds in applying the previously defined principles on a test basis. Impressive is the variety of possibilities for stormwater management, which are shown even with limited space. Again, the graphics are an essential key to understanding the concept. Very clearly, on the one hand, the potentials of the respective location and, on the other hand, the principle solutions are shown.

Overall, the work is a very valuable contribution to the study of the potentials of urban wetlands as an element of the "sponge city" in Prague. The model study of schools convincingly demonstrates how these potentials can be used in the context of different building situations.

The thesis is graded A.

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Dipl.-Ing. Till Rehwaldt

