

**Riverside parks as a tool of landscape transformation and reconnecting people with urban nature**

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**Introduction**

The author presents the synthesis of his latest research results regarding the new concepts of urban green spaces, so called “ecology parks” or “naturalized parks” designed in many European cities since the beginning of 1990s. These relatively new types of parks (Cranz, Boland, 2004) have been created also in the immediate neighbourhood of urban riversides include reclaimed brownfield sites, restored floodplains and the remnants of semi-natural riparian vegetation in a city (*urban wilds*) (Jakubowski, 2015). The paper identifies what contribution the sustainable models of riverine parks can make to ecological balance of modern cities and solving environmental problems while enhancing urban water ecosystem services, for instance, social benefits (Januchta-Szostak 2012). I ask how the areas of natural value and brownfields can be successfully transformed into green public spaces and protected sites with reach biodiversity while become recognisable and eagerly used by people. Finally I propose some recommendations in terms of green spaces, urban ecology and the quality of life. Many European cities aim at protecting undeveloped, semi-natural space and wetlands and rendering it available to urban communities without compromising its natural conditions (Jakubowski, 2013a) (fig. 1-2).



**Figure 1-2. The United Kingdom. London. Sutcliffe Park as the good practice of riverine landscape restoration and the sustainable flood management. Photos by the author.**

## Goals and objectives

The paper discusses representative actions – latest case study from Warsaw (Poland) analysed in the context of world-wide, contemporary achievements – that may serve as an inspiration and a reference point for all other activities related to the transformation of wastelands, regulated waterways and urban wilds into city parks (fot. 1-2). In Poland the issue of protecting or enhancing semi-natural, riparian vegetation in cities and the urban river restoration is still a controversial, debatable and ambivalent topic and a challenge for professional designers: landscape architects, architects and ecological stakeholders. The problem of sustainable practices is very promising in the context of riverine landscapes of Polish cities and post-industrial conurbations (similarly as in the past IBA Emscher Park in Ruhr region in Germany – fig. 3-4).



**Figure 3-4. On the left, Germany. Duisburg. Partly renaturalised Emscher River in Duisburg-Nord Park. On the right, Galsenkirchen. Emscher River in Nordstern Park – the typical model of riverine landscape within cities and industrial regions. Photos by the author.**

The restoration or adaptive works convert derelict, abandoned or partially wild riverfronts into natural-looking, self-regenerating, multi-functional sites or even create new “biodiversity hotspots” in urban settings where sustainability, landscaping and recreational purposes are taken into account (fig. 5-6). T. Elmqvist *et al.* (2015) indicate the growing interest in restoring urban ecosystems and emphasize that 15% of globally degraded ecosystems are to restore till 2020 due to the Convention of Biological Diversity. The contemporary urban landscape architecture is increasingly influenced by the ecological approach which is more oriented on ecological processes, changes, evolutionary, spontaneous (“weeds-oriented”) not ornamental vegetation than the conventional approach based on, what Kongijian Yu calls the ‘manicurisation of landscape’ (Jakubowski, 2016). The effective and sustainable use of natural resources in urban environments contributes to the search for new design solutions that considerably differ from the classical urban park from the past.



**Figure 5. The Netherlands. Amsterdam. Westergasfabriek Park. The system of ponds, canals and streams, wetlands, riparian vegetation are the integrated elements of phytoremediation and new aesthetics of the urban park created on heavily polluted and post-industrial site. Photos by the author.**

In Poland urban nature is still recognised and widely accepted primarily from the point of view of designed, artificially planted and intensively maintained greenery. The main barriers are the lack of ecological awareness among the society and decision-makers and the lack of good design practices: how to integrate social and ecological values in new urban green spaces, how to integrate the semi-natural parts of landscape with intensively cultivated green spaces managed for recreation, aesthetic purposes and social activities. Behind the ecology there is a question of new aesthetics and recreational functions of urban parks designed with ‘sustainability’ in mind (fig. 5).

### **Method**

The research method includes descriptive analysis of selected design solutions from Warsaw adopted with respect to contemporary European parks within the urban rivers, where ecological succession or semi-natural vegetation are valid measures (Kühn, 2006).

### **Results**

The design process of new riverside parks offers many opportunities to demonstrate how sustainable development could be delivered in an urban context. For instance, the river and waterways could be restored, the wetlands introduced, a special drainage system near a housing development built.

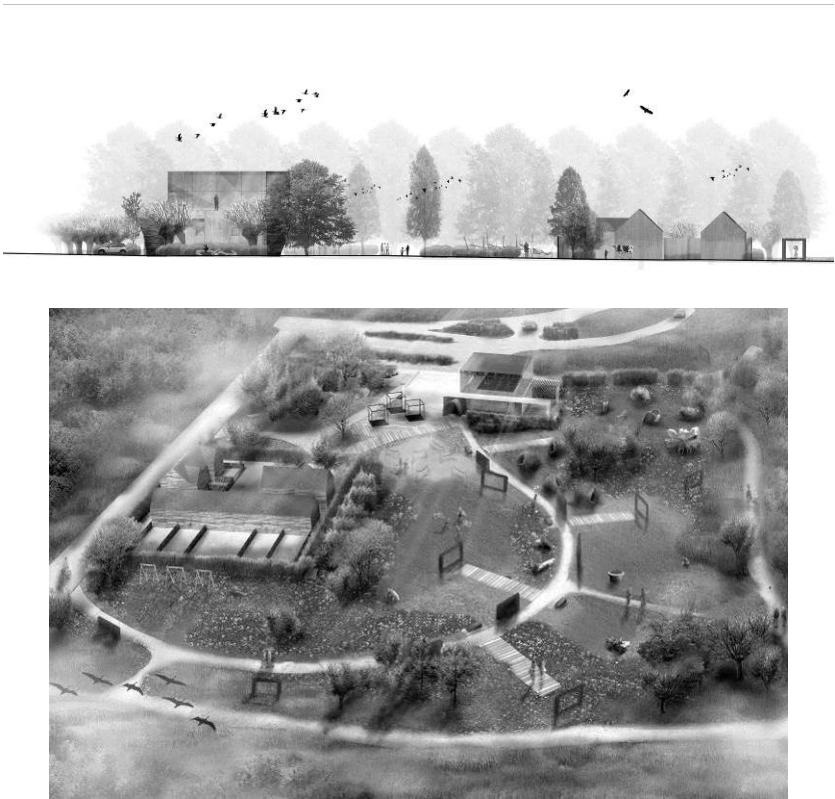
Furthermore, ecologically aware designers and planners face another challenge consisting in the need to integrate existing and revitalised aquatic and terrestrial habitats with the shaping of new spatial and aesthetic values – landscaping (Jorgensen, Keenen, 2012; Dunnet, Hitchmough, 2004). However, where the habitat protection is required and pedestrian access limited or even impossible due to nature protection, it is essential to design special infrastructure that would enable observation of nature (for example, *birdwatching*), enhance passive recreation and offer insight into protected parts of landscape while reducing anthropopression (Jakubowski 2013b). The sustainable models of riverside parks can be ecologically valuable complement of blue-green space network in a city and a budget-wise, effective design solution to transform degraded, unstructured urban rivers – canalised, polluted with no access for public.



**Figure 6-7. Poland. Warsaw. On the left, the ecological and recreational path (greenway) on the Vistula Bank. On the right, the Beach Pavillion on the Vistula Bank located in the flood area of the unregulated river. Photos by the author.**

A particular role in green and blue infrastructure system plays the development of linear parks based on natural areas or former brownfield sites. In Warsaw the ecological and recreational path has been built in the unregulated eastern bank of Vistula River (Happach, 2014). This specific investment demonstrates how to efficiently activate space of great ecological values with little funds and minimum interference in the area and grant the access to the river's edge (fig. 6). The project of the path entered various competitions, including "City to City Barcelona" and "European Prize for Public Space 2014". The advantages of the path designed in the first place for runners, walkers and bikers include changeability (sequence) of views and natural surroundings, diversity of bird species, a large group of people who regularly use spontaneous flora by the river running through the centre of a big European city. The path offer highly attractive objects and recreational functions along the waterfront: natural playground, zoo, tree-top trail, beach, pavilions and, last but not least, the remnants of riparian forest and natural process with limited human

intervention. Additional element increases the attractiveness of the path is Beach Pavillion. The object is an example of modern architecture located in the floodplains with changing water level, adjacent both to traffic and old riparian forest. Similarly like the beach in this part of the bank is intensively used for recreation and events. Another interesting object is to arise along the greenway – the ecological education centre in Gołędzin (the area adjacent to the Natura 2000 network) with the restoration of wet flowering meadows. The author demonstrates his design team's idea and landscape architecture proposal of the object. The concept has gained the merit award in landscape architecture design competition in 2015. The design provides park space for passive recreation and education purposes.



**Figure 8-9. Poland. Warsaw. Gołędzin. A merit award project of the ecological education centre building as a part of the ecological and recreational path (greenway) on the Vistula Bank. Project by: J. Kolarz-Piotrowicz, K. Jakubowski, L. Malec et al.**

## Discussion

How can these new categories of parks with restored riparian vegetation create a new quality of urban landscape: “naturalized” (rather not natural) landscape, where the local biodiversity is enhanced or restored, and the natural-looking site is available to citizens within everyday access? How many such “ecological” parks need the city? How to integrate the intensively-maintained parts of greenway with semi-natural fragments more oriented on natural processes, biodiversity and ecological education?

## Conclusion



**Figure 10-11. The United Kingdom. London. Queen Elisabeth Olympic Park – the “naturalized landscape” in the place of brownfield riverscape (Lea River). The photo by M. Jankowiak. On the right, Bow Creek Ecology Park created in the brownfield area adjacent to Lea River. The photo by the author.**

The revitalisation of river ecosystems and surrounding wastelands could enhance existing and restored biodiversity, bringing nature closer and provide extraordinary rich urban landscape with the multitude of functions, for example, the flood management and runoff retention (fig. 10-11). Therefore, the protection of urban nature is followed by changes and modifications in landform to attract and cater for large number of visitors. The riparian ecosystems and mosaics of connected ecological habitats could offer a great potential for sustainable recreation and educational functions (Hopkins, 2012). European parks created mainly after 1992 (Rio Summit) demonstrates that also ‘brownfields’ habitats and novel ecosystems with mix of native and non-native flora are recognized as additional educational and aesthetic value rich in biodiversity, well adopted to soil and climate change (Kowarik, 2013; Drapella-Hermansdorfer, 2006).

Integrated approach towards planning and designing riverside landscape is a promising, future-oriented method of urban river transformation. Moreover, the riverside parks and greenways provide various benefits and enhance

landscape continuity, integrating and connect inner urban green areas with outskirts and countryside. The linear and riverside parks contribute to create the substitute of countryside and natural landscape in the middle of an urban context.

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