Green and Blue Infrastructure for Sustainable Development of the City. Case Study of Vilnius City, Lithuania.

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Content of the presentation

- Greenery and water in the cities: old history and many experiences.
- Vilnius and its riversides
- Challenges and projects for sustainability
- French parks’ creator stories: André in Lithuania and Uruguay
- Conclusions and final up
City planning ideas and practice

- Baron Haussmann’s renovations in Paris between 1853–1870;
- Public parks in industrial cities: New York, etc.
- Austrian architect Camillo Sitte: city planning according to artistic principles, 1889
- Concept of garden-cities by E. Howard, 1902

City planning ideas: public parks in cities

Central Park in New York, 1858; Buttes-Chaumont in Paris, 1867; English Garden in Munich, 1789
City planning ideas and practice (cont.)

- Central Place Theory by German geographer Walter Christaller was applied for human settlements and urban systems planning, 1933.
- Designing the City – towards a more sustainable urban form by Hildebrand Frey, 1999; and Visions of Sustainability by H. Frey and Paul Yaneske, 2007. Social infrastructure and easy access to it.

Lithuanian model of settlements system

- The system was based on the integrated hierarchy network of settlements from capital-city, regional cities, district centers, local centers and local rural centers.
- Aspects of community, cultural landscape and heritage development were left beyond to be covered in the following phases of territorial planning.
**Vilnius development model**
(according to H. Frey theory)

Neighborhoods or districts in city, where the social and other infrastructure are developed and easy access to its. Configuration and concentration of city’s built territories. Directions of city development and communication systems.

**Modeling of greenery’s system in city**

- **Green area of district or neighborhood (barrio)**
- **Greenery of quarter or block**
- **Urban public park, central park**
- **Green connector**
Methodological and legal framework

- European Landscape Convention, 2000 (Lithuania, 2002; now in 37 countries)
- Other EU Directives and regulations

Lithuanian laws:

Water as a frame for urban development

Neman/Nemunas river and old cities Grodno (BY) and Kaunas (LT)

Ancient figures in J. Koppmayer, 1688. Library of the Vilnius University.
Vilnius city – geographical conditions

- 401 sq. km
- 555,000 inhabitants
- Density – 1,385 inh/sq.km
- Greenery (parks, forest) – 20,000 ha
- Water infrastructure: lakes, ponds and 3 rivers / 840 ha

River life in the past: Vilnius in 19th century

- 1874
- 1904
Vilnius nowadays: river axis in city planning

Vilnius city Master plan: 3 river axis development
Neris River valley development in Vilnius

Neris river and its valley are the main elements of the nature framework in Vilnius city; it embodies very important nature areas – the Verkiai Regional Park, Valakupiai forest, surroundings of Kalnu Park, Vingis park and other. Near Neris river important cultural heritage objects survived and new urban structure developed in last years.

Discussed directions of development and management:

– Ecological Park  – Urban Park  – Meadow Park  – Sport Park

Recreational and sportive track / aboard

24 kilometres longitudinal
Verkiai Manor

Verkiai Regional Park

Innovative green-blue quarter “Gulbinai”
Partnership between Institute of architecture VGTU and RE company
Gulbinai quarter planning: environmental and landscape aspects, rain water management system

Vilnius Old Town planning: green & blue areas
Vilnia riversides in Paupys industrial area is developed in last years.

- Brownfield projects group
- Conversion to human scale
- PPP principles / BATEM project
Edouard André’s heritage management experience

The life and works around world of multi-talented French landscape architect are presented in many publications and our paper. Ed. André is a botanist, an explorer, a landscape architect, an urban planner, and a writer of *Belle époque*, end 19th century.

Ed. André was worked in Paris and other French cities, in Lithuania, Italy, Russia, Poland, Uruguay. Scientific expedition to South America in 1875–1876.

Public or private parks’ creation (Sefton park in Liverpool, Cognac city parks, etc.), transformations of Luxembourg city (since1872), *Montevideo* (1890–1891) are most important works.
Édouard François André in South America

1875–76 – plant-collecting trip to Andes, South America; resulted in 3,400 specimens of plants. He was an expert of Bromeliads.

Anthurium andreanum, Feijoa (Acca) sellowiana (pineapple guava; guayabo del país) introduced to Europe and around world by E. A.

1890–1891 Ed. André prepared plans for the redesign of Montevideo city in Uruguay. Plaza Zabala, other plazas, Central Park (now Park José Battle y Ondonez), Park Prado (Miguelete Park) drawn by E. André in Plan de Embellecimiento y Ensanche de Montevideo in 1891.

In Lithuania we are 4 parks, created by Ed. André
Palanga Park – coastwise Baltic sea location

© Archives ENSP; Édouard André, 1899

Palanga Park: in Revue horticole, 1906
The park is on a peninsula between two lakes with the river system which is very rare in Lithuania. Documents of the special planning and detailed plan for the renovation and restoration of the domain of Uzutrakis are prepared. Thanks to research and professional work, park ornaments and pond water system were restored.
The main terrace with views of the Galve Lake
Conclusions and final remarks

• Greenery and a water bodies are a principal formant of city landscape and structure identity.
• Greenery and water management should be presented in accordance to historical, ecological and economic approaches. Historical and ecological sustainability of greenery and water bodies systems is very desirable.
• Aesthetic of the greenery and water bodies systems should be created to sustainable engineering.
• Sustainability of aesthetic and engineering decisions is the goal to urban planers and landscape architects.

The cultural and natural heritage in Vilnius city and near Vilnius is very important for Vilnius city development.

Three parks in Lentvaris, Traku Voké and Uzutrakis created by French landscape architects Edouard and René André in 1898–1900, also other historic parks is the framework for green and blue infrastructure of the city with social, economic and aesthetic functions.
Thank you for your attention

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