

MARSEILLE  
DU 27 MAI  
AU 3 JUIN  
**2022**



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Committee G Environment –

Case studies involving planning, construction and operation of dams demonstrating environmental and social benefits

# The water management system in the surroundings of Banská Štiavnica town, Slovakia

The dams that saved mining in the 18th century ... save tourism today.

**Branislav Lipták**  
**The Slovak Water Management Enterprise, Slovakia**



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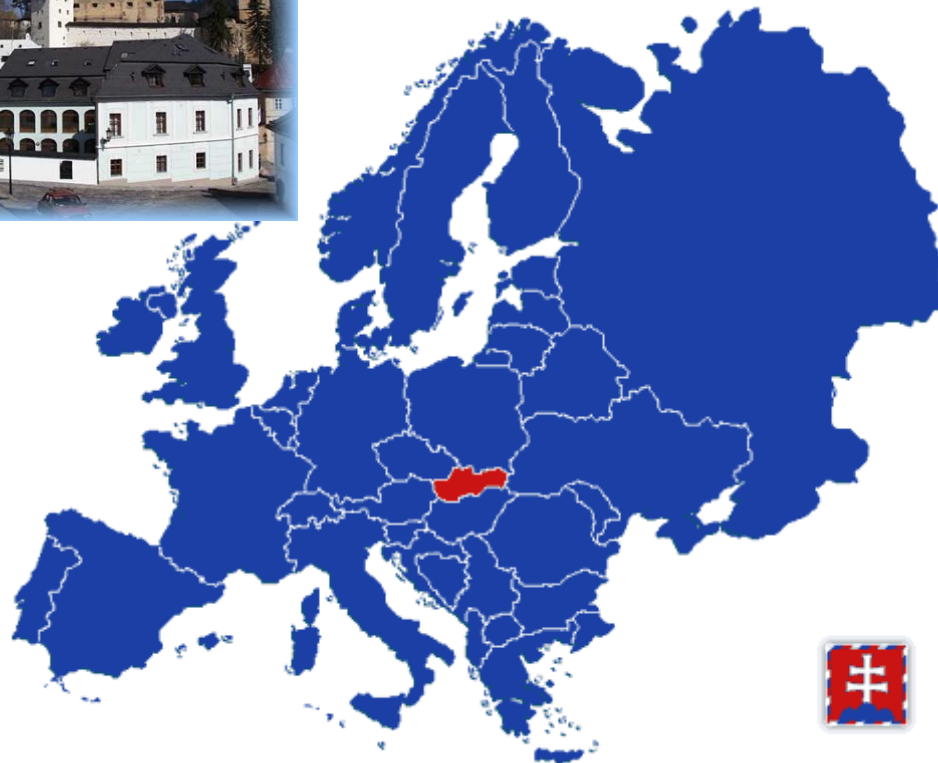
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THE HISTORIC TOWN OF BANSKÁ ŠTIAVNICA  
... INSCRIBED ON THE UNESCO WORLD HERITAGE LIST



SWME: - app. 600 dams and other water structures  
(dikes, weirs, dry polders, small hydro power  
plants, pumping stations for internal waters, etc.)  
- more than 38 000 km of water courses



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**Gold and silver** - surface mined as early as the times of the Celts

the 12th century - "Terra Banensium" the 14th

in 1627 - gun powder

- **The water management system:**

- 16th – 18th century - app. **60 water reservoirs** (40 for mining),  
accumulation capacity **7 million m<sup>3</sup>**,
- **160 km of water canals and 7 km of water galleries.**  
( Mr. S. Mikovíny, J. K. Hell, M. K. Hell and others)

### **Mining waters**

their level.

- the strength  
wheel, water
- during the 16th  
machine drive

- The best achievements:

- The 3 highest dams of mining water reservoirs built in the given period in Europe  
(Počúvadlo 29.6 m, Veľká (Big) Richňavská 23.4 m and Rozgrund 30.2 m),
- 7 of 12 the most significant mining water reservoirs in Europe, according to the quantity  
of accumulated water (18th century),
- Rozgrund (1744) - the world most courageous dam with regard to its bank slopes (slope  
of the upstream bank 1:1.5, slope of the downstream bank 1:1.25 – 1:1.75).

### **In the middle of**

**Štiavnica's ore**  
**integrated system**

**Sophistic**

**man-made water reservoirs saved mining in Banská Štiavnica**





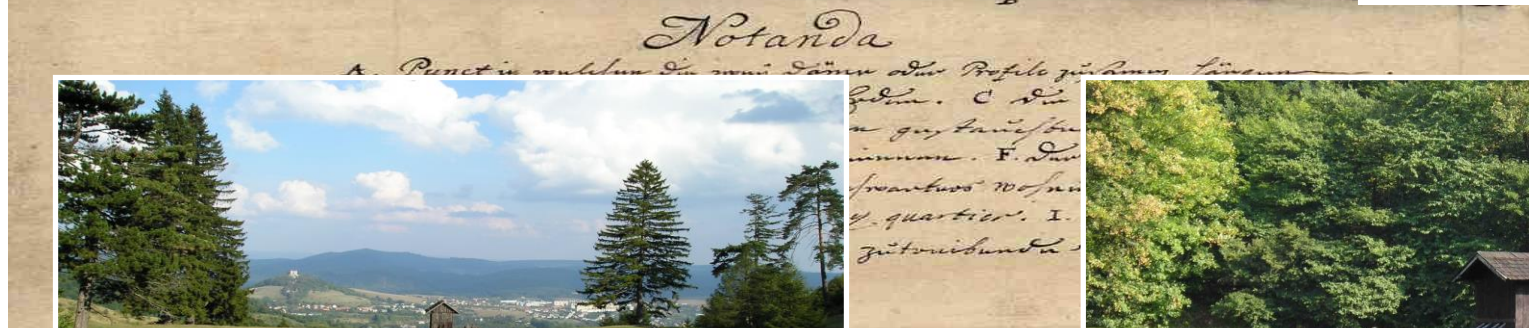
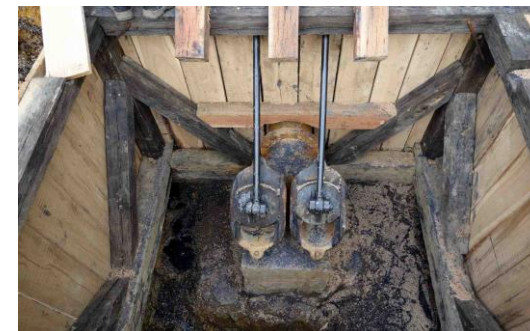
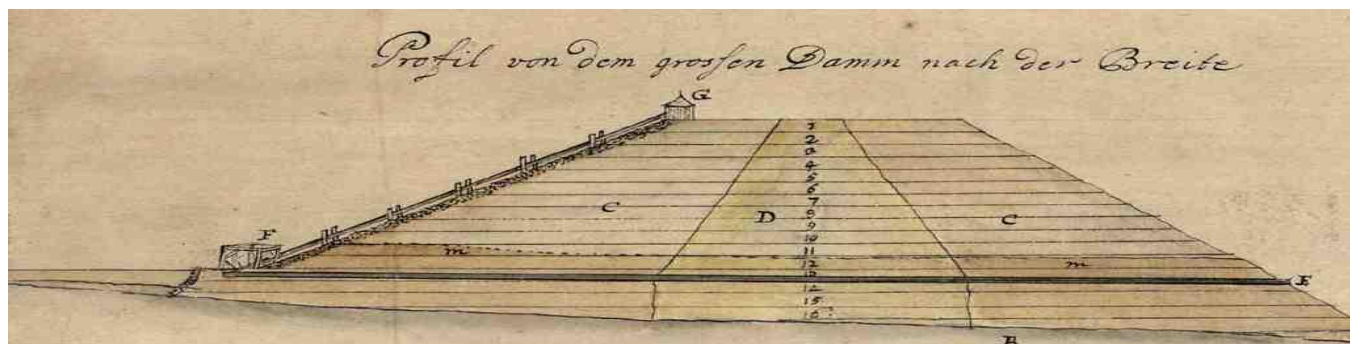
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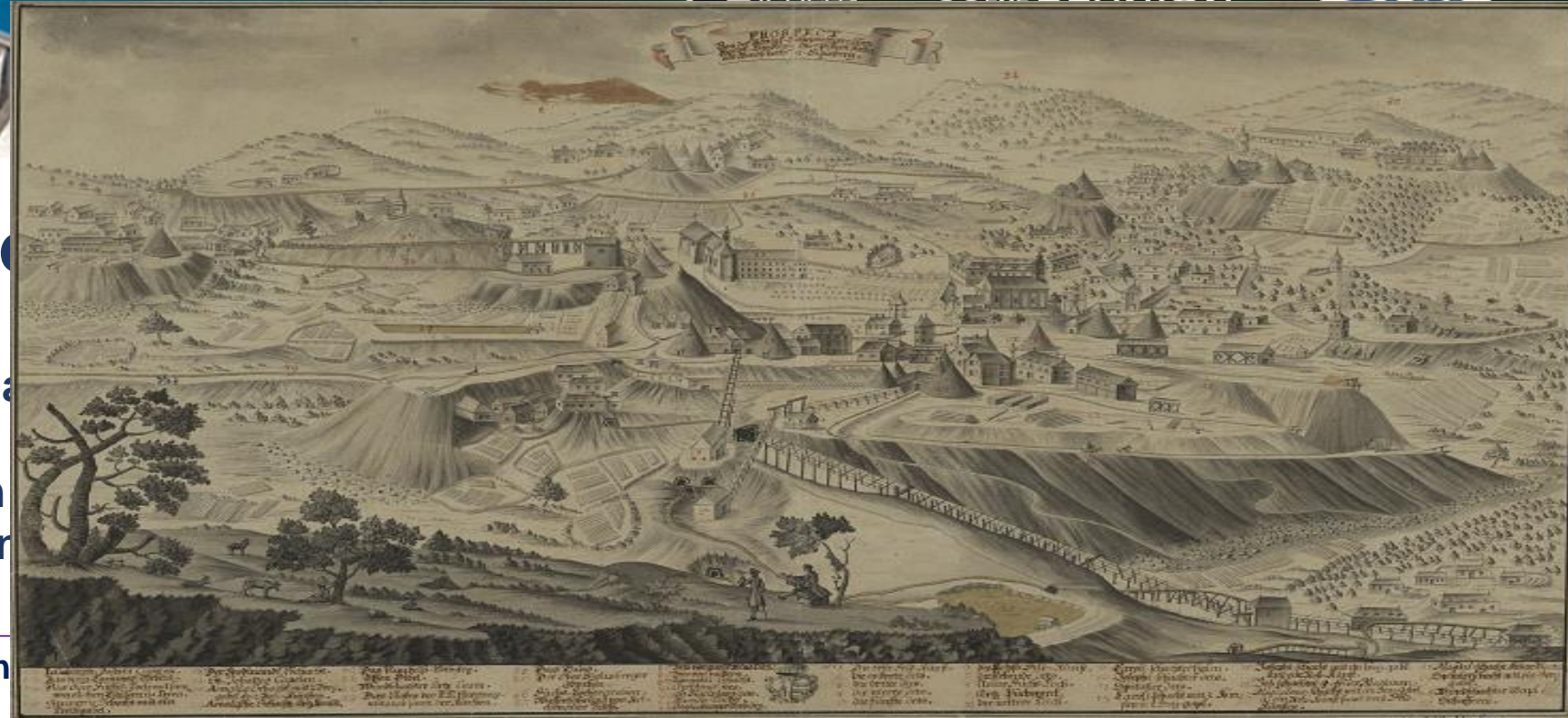
# Achieving the enviro

## I. Environmental and social

- Mining
- Educational system
- Impacts on the cour

... particularly mining objects and min

- the impact of dams and reservoirs on agriculture (mainly sheep breeding) was not substantial
- also environmental impact of dams was not significant in this type of industrial country
- influence on environmental flow and river geomorphology was not negligible



„The Silver Town” - thanks to use of accumulated water sources





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# Achieving the environmental and social objectives

Tasks in present water supplies, and ... :

- The **Rozgrund Reservoir** - a source of **drinking water** since the year 1965,
- The **Dolnohodušská Reservoir** - **ore dressing purposes** until 2014 (*The Slovenská Banská, s. r. o., the last in the region*),
- **sports fishing** - all reservoirs of the historic water management system,
- **flood protection** of local inhabitants,
- An irreplaceable task in **education of new dam engineering and water management generations** ... schools, universities, water management companies (also from abroad), NGOs or specialized conferences attendees ...

## II. Environmental and social issues of the scheme at present

- **Tourism, recreation, cultural benefits**
- **Environmental benefits**
- **Water management importance, Education**

„The Silver Town” - thanks to use of accumulated water sources

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## Conclusions

The study demonstrated a great success of the water management system built in the surroundings of Banská Štiavnica Town in terms of environmental and social aspects and socio-economic benefits in the past times and at the present as well.

It is also necessary to remind its **cultural and historic significance**, arising from the age, originality of the water management solution and world innovativeness in the courage of the earth dams designs, what is evidenced by the inscription of the water constructions into **the UNESCO World Cultural and Natural Heritage List in 1993** and also its **local economic and social impacts** – creation of working places.





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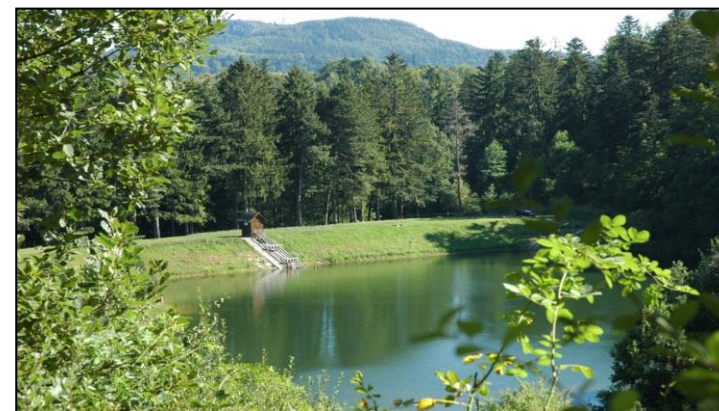
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**Thank you for your  
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**Branislav Lipták**

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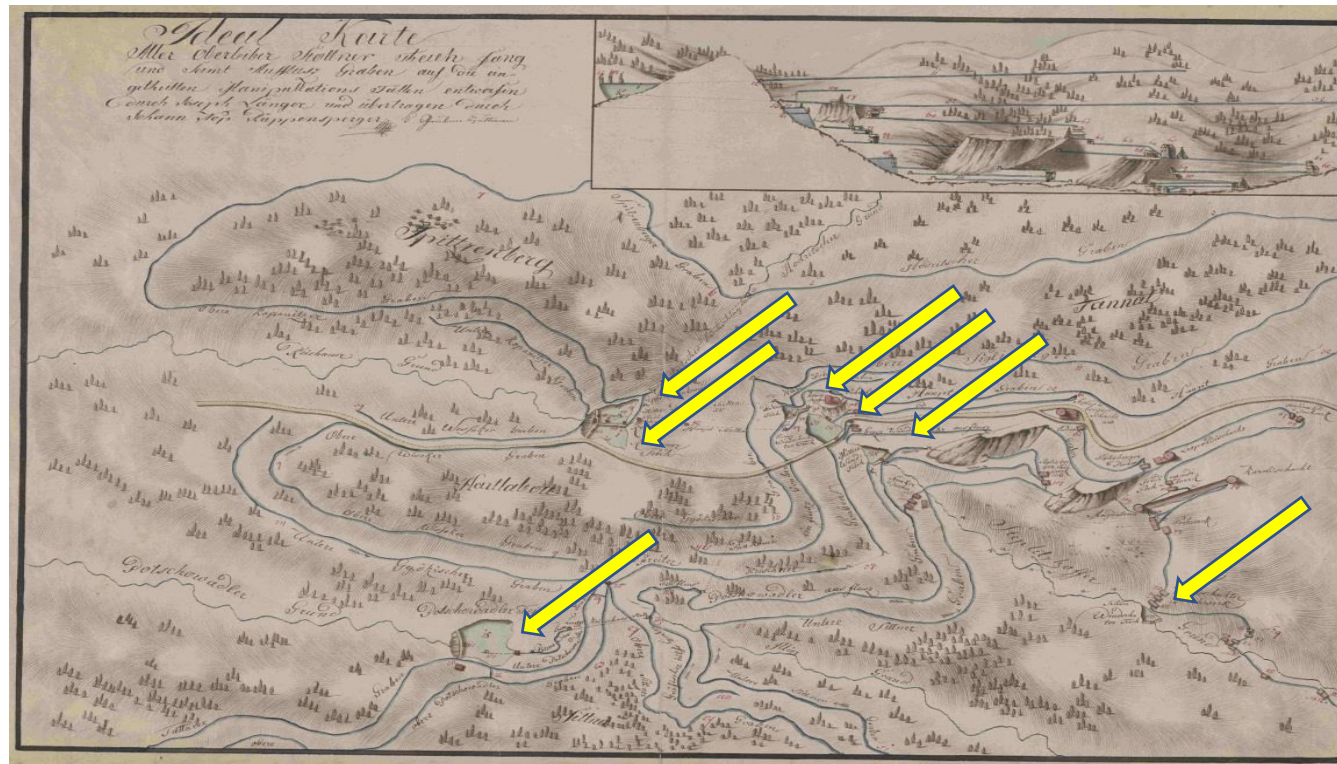
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Water reservoirs and canals of the Piarg group (L. Länger, 2nd half of the 18th century)



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