TOURIST POTENTIAL OF WEISSHUHN'S RACE IN ŽIMROVICE IN THE OPAVA REGION

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Abstract
The aim of the paper is to point out the issue of navigation canals as potentially attractive tourist destinations. There are a number of these structures in the Czech Republic, but many do not receive as much attention in terms of tourist promotion as they deserve, given their cultural, historical and technological value. Weisshuhn's race in Žimrovice has been operating continuously since 1891. It was chosen as an example as it represents not only a unique water management facility, but also a regional attraction with a tourist potential, the evaluation of which is the subject of this paper. The evaluation of the race itself is based on a detailed assessment of the construction technology and its comparison with similar structures in the Czech Republic, including consideration of other aspects relevant in terms of tourism.

Key words: Industrial heritage, navigation canal, race, water management, Weisshuhn

Introduction

Water management structures are popular tourist destinations. The waterworks conditioned the development in their surrounding and either directly or indirectly influenced the landscape character. Also they are often technically unique. Therefore, these objects often have considerable tourist potential. An example of such a water management system is the Weisshuhn's paper mill canal in Žimrovice (henceforth 'race in Žimrovice') near Hradec nad Moravicí, Opava district, Czechia (Fig 1).
The paper mill with the water management system was built by a prominent industrialist Carl Weisshuhn (1837-1919), who gained a wealth of experience with wood processing, paper production and water propulsion on his trips abroad and in his previous business activities in the region. He operated several mills, sawmills and wood cutting plants along the Moravice River. He also contributed to the development of Jánské Koupele spa resort and participated in the construction of railways and roads. His unrealised plan was to build a sam near Kružberk, where the dam was actually built a few decades later ((SOkA Opava, Sonnek L., nezpracovaný fond, karton 44, kronika ; Jirásek a kol., 2019; Weisshuhn, 2001).
The unique water management system, consisting mainly of the upper and lower weir, and the paper plant are still operating. Nevertheless, they are not of much interest. Therefore, the aim of this paper is i.) to describe the technology of the water management system based on reconnaissance and historical research, ii.) to evaluate its tourist potential, and iii.) to compare it with similar hydrological structures in Czechia.

Materials and methods

The database of CzechTourism, the Czech Statistical Office and the web portal of Moravian.Silesian Region were used as a source of input data. As for map materials, the Base map of the Czech Republic 1 : 10 000, the tourist map of Mapy.cz map application, historical topographic maps and ortho-maps from the 1950s were used. Historical research of the paper mill's hydraulic complex was based on the excerption of archival materials, in particular the Provincial Archive in Opava and the State District Archive in Opava.
The mapping o the weir's sections, related objects and description of their current state were conducted by detailed field survey in the period 2019-2021. The survey was carried out during the full operation, but also during the period of repairs of weir's banks and bottom when the weir's trough was drained. The evaluation of the weir in terms of its potential for monument protection was realised using the methodology introduced by Ryšková et al. (2021).

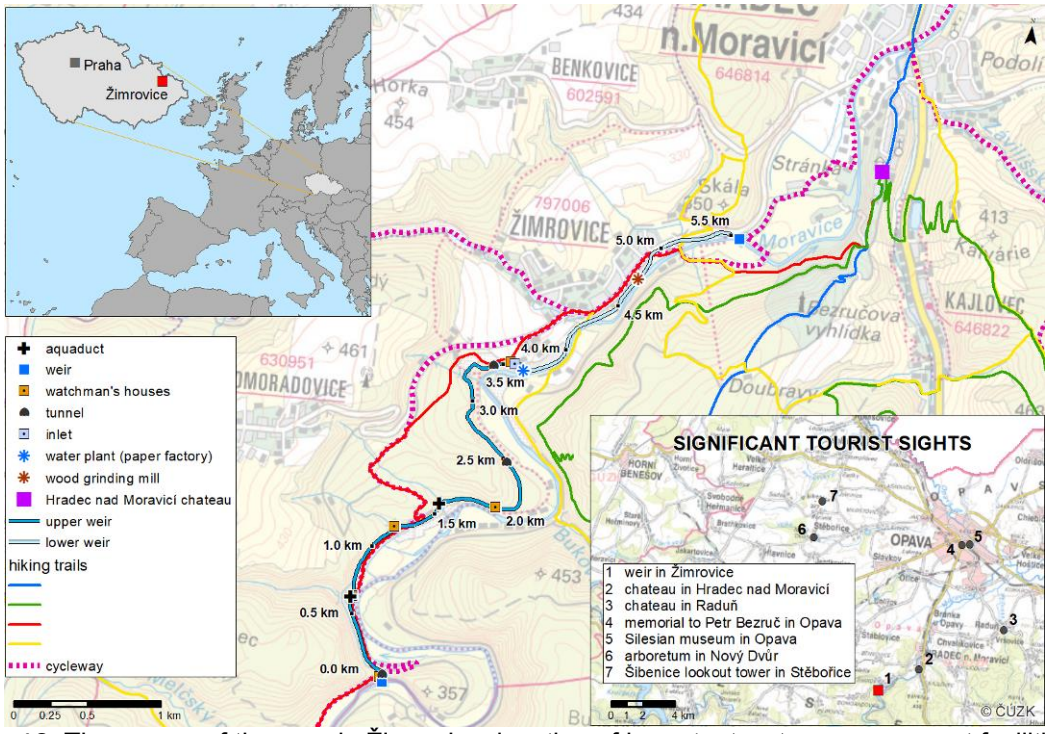

Fig. 13: The course of the race in Žimrovice, location of important water management facilities, localisation of other tourist sights in the Opava region.

Results

History and description of the functional unit of the race in Žimrovice

The construction of the functional unit of the paper factory and the hydraulic structure started in 1890 and completed a year later. The race, about 3.6 km long, runs along the left bank of the Moravice River. Water is taken into it above the weir in the neck of and incised meander of the Moravice River about 3 km upstream from the paper factory. On the race there are 3 tunnels broken in the rock and 2 aqueducts over minor tributaries of the Moravice River. The riverbed has a rectangular to trapezoidal shape and is usually 4-5 m wide. It was originally lined with stone (Fig. 2A), part of the trough is on the bedrock. At the end of the race there is an outlet for crushed ice and dirt (Fig. 2B) as well as a relic of the opening of the connection of the wooden gutter to the floating wood with an outlet to the paper factory warehouse. There are also watchmen's houses along the race. At the end of the upper race there is an intake cone, from which the shaft (slope 22 - 23.5 m, water flow 4 m^3/s) originally led to up to 8 Girard turbines from the Zurich company Escher, Wyss & Co. (SOkA Opava, Sonnek L., nezpracovaný fond, karton 44, kronika). Two of them were replaced by Francis turbines in 1906. From the turbines, the water was led through a tale race emptying into the Moravice River.

The tale race soon had to be lengthened due to impoundment. Therefore, the race can be divided into parts above (upper race, functional) and below (lower race, non-functional) paper mill. In this arrangement the length of the whole system has been approximately 5.5 km. Between 1912 and 1921, a wood grinding mill was established on the lower race (SOkA Opava, OÚ Opava, inv. č. 873, karton 1052). However, its operation was not profitable, and later was shut down. But the race was used for the propuslsion of a hydroelectric power plant supplying the paper factory with electricity.

The turbines in the paper factory underwent reconstructions in 1926-1927. The original Girard and Francis turbines powered by water from the upper race were replaced by two modern and more powerful Francis turbines from Českomoravská Kolben with a Siemens Schuckert generator with an output of about 2 x 560 kW (SOkA Opava, Sonnek L., nezpracovaný fond, karton 44, Historie Olšanských papíren, 1.díl). These devices have been working in the factory since then (Fig. 2C).

Due to the fact that the race has been in operation since its inception (i.e., for over 130 years), it requires demanding regular maintenance (Fig. 2D). The current owners of the paper factory and the entire hydraulic structure strive for its regular repairs and cleaning with an emphasis on maintaining the authentic appearance and materials used. A local stone is used for repairs. Both aqueducts and several short sections of the race in exposed steep places, which were disturbed at higher water levels, have been concreted to ensure both their function and safety.

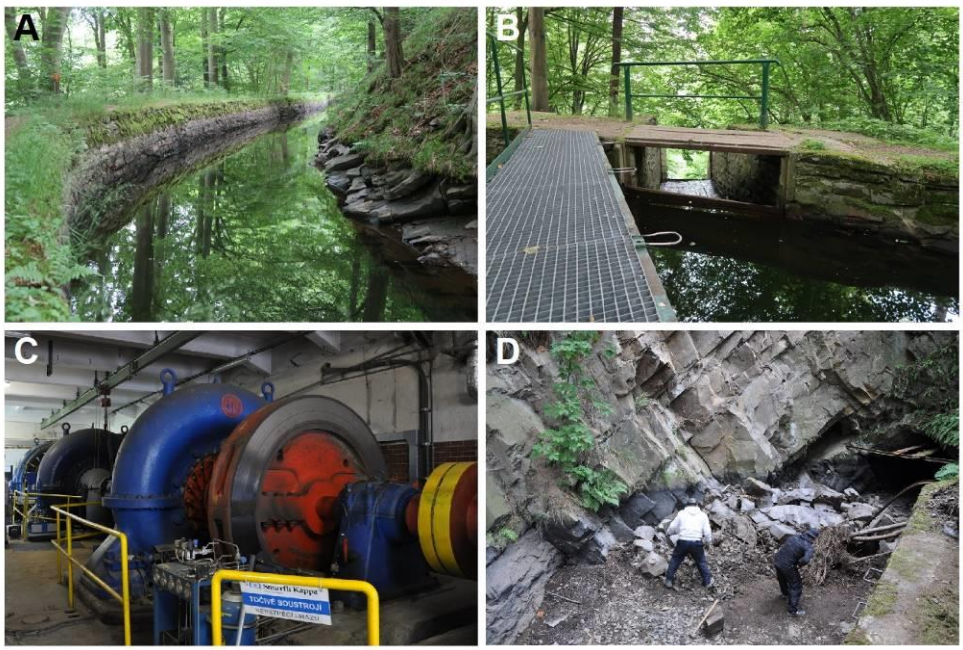

Fig. 2: A) stone masonry race; B) side outlets for discharging dirt and crushed ice; C) the original Francis turbines and generator from 1926 still in operation; D) ongoing maintenance of the race body.

Tourist potential of the paper race

The upper race represents an important landscape element, which is sensitively set in the original natural environment. The wider surroundings of the race are a popular destination. The canal is located in the north-eastern part of the Moravice Nature Park dominated by the picturesque valley of the Moravice River. The park is interlaced with cycling and hiking trails.

The race retains its original appearance and form, and along its route, several other buildings have also been preserved that were used for its operation. Along almost the entire race route there is an unmaintained but clear footpath, which in some sections follows a marked hiking trail and a cycleway. It is possible to start the walk from the weir on the Moravice River, above which the race begins. Its first section, right after the gate, goes through a rock tunnel. (Fig. 3A). The watchman's houses along the race are all preserved, although in an altered form (Fig. 3B). The so-called inspectional holes can are found in the tunnels (Fig. 3C). Thexy were used to prevent the tunnels from blockage during the timber navigation. The route of the upper race is 3.6 km long and it is possible to come over two aqueducts almost to its end at the intake object (Fig. 3D). There are also semi-functional wooden sluice for brash-ice and alluvial dirt and a relic connecting a wooden gutter for wood into the paper factory (Fig. 3D).

In recent years, as public awareness of technical monuments has increased, the paper mill has attracted more and more people. This is also evidenced by the fact that according to a 2014 MF Dnes survey, the race became the most outstanding uniqueness of the Moravian-Silesian Region. Proof of this trend is the fact that in 2014 the upper paper race became the most remarkable uniqueness of the Moravian-Silesian Region according to the MF Dnes survey (IDNES, 2014) and surpassed the urban heritage reservations of Nový Jičín, Příbor and Štramberk. Interestingly, the Ema heap in Ostrava ranked 3rd in this survey.

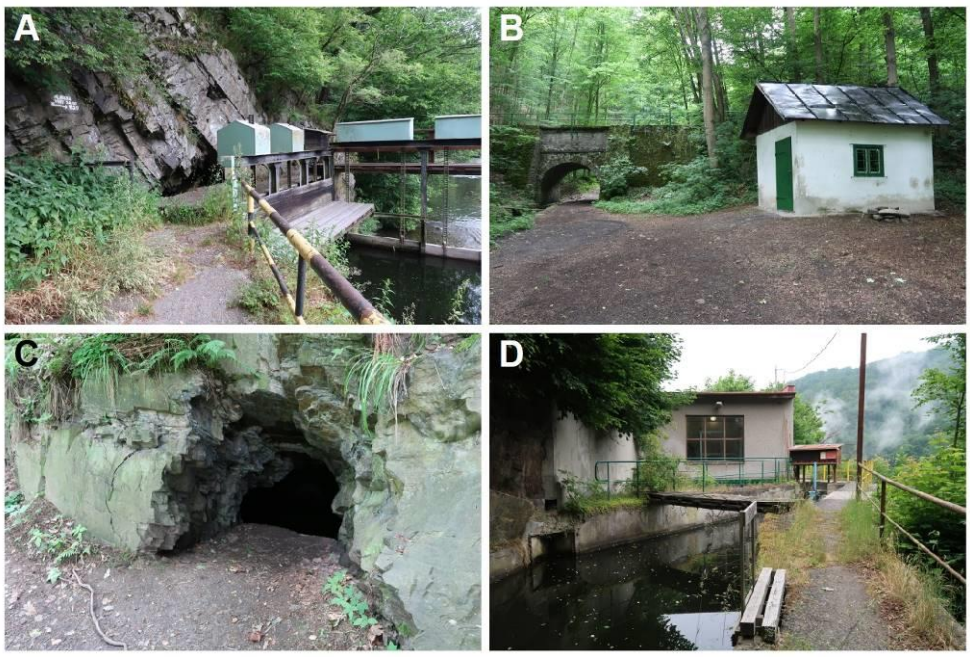

Fig. 3: A) the original floodgate above the weir on the Moravice river and the beginning of the first race tunnel. The left part of the picture shows the water level during the flood in the spring of 1929; B) one of the watchman's houses and an aqueduct; C) viewing hole at one of the race tunnels; D) inlet object to the turbines, in the left part of the picture there is a visible relic of the connection of the wooden gutter, which led to the wood warehouse in the paper mill.

Comparison of the tourist potential of the paper race with selected tourist destinations

Water management structures have recently received increasing attention. Many of them have been declared cultural monuments. According to the Natiaonal Heritage Institute (NHI) database (2022), there are currently 17 navigable canals in the Czech Republic, of which 3 have the highest degree of protection as national cultural monuments – Schwarzenberg Canal in Šumava, Blatenský Trench in the Krušné hory Mts. and the Dlouhá Stoka Canal in the Slavkov Forest. An interesting fact is that 13 of the listed canals were protected before 1958, the remaining 4 were declared a cultural monument only after 2000. According to data from the CzechTourism database (2021), waterworks are among the frequently visited tourist destinations throughout the Czech Republic. The database includes a total of 34 water management facilities, which in 2020 were visited by 266 000 tourists. The most visited sight was the Dlouhé Stráně Pumped Storage Power Plant, a unique hydraulic structure near the village of Loučná nad Desnou (ca. 100 km off the Žimrovice race), with more than 88 000 visitors a year. Another frequently visited object is the Wesselsky watermill near the town of Odry (18 km southwest of the race), which was visited by almost 4 000 visitors..

Since the race is located in close proximity to the town of Hradec nad Moravicí and near the city of Opava, attention was paid to this area, which is very well accessible and there is a number of cultural and natural attractions and sights. According to the CzechTourism database (2021), there are 6 monuments/sights in the immediate vicinity of the race (Figure 1), which in 2020 were visited by more than 130 000 visitors in total (Table 1). The most important destination is the State Castle Hradec nad Moravicí, a national cultural monument located ca. 4 km off the race, which was visited by over 55 000 visitors.

Discussion

The Žimrovice race is an ingenious water management facility, built more than 130 years ago in challenging terrain. Given its technical, historical and cultural attributes, its importance is comparable to that of much better known water management structures such as for example the Schwarzenberg canal or the Blatná canal, which are protected as national cultural monuments. Efforts have been underway since the early 1990s to declare the race a cultural monument to ensure its historical preservation. According to the experts of the National Heritage Institute, the reason for this is the lack of documents in the applications for monument protection and problems related to the delimitation of plots in the land registry. Despite these circumstances, the owner strives for sensitive maintenance and carry out the necessary repairs so as to preserve as far as possible the original character (i.e., material and design). At the same time, however, functional and safety issues need to be taken into

account, which sometimes requires interventions such as replacing the original material (stone) with concrete.

Tab. 1: Number of visitors in selected destinations (source: CzechTourism, 2021).

Destination	**Cadastral area**	**Number of visitors in 2020**
Státní zámek Hradec nad Moravicí	Hradec nad Moravicí	55 706
Státní zámek Raduň	Raduň	29 060
Arboretum Nový Dvůr	Stěbořice	23 384
Historická výstavní budova Slezského zemského muzea Müllerův dům	Opava	14 317
Rozhledna Šibenice	Stěbořice	10 000
Památník Petra Bezruče	Opava	217

Declaring the weir a cultural monument would provide the owner with the tools for effective care (such as subsidies or expert advice). Also, it would undoubtedly help to support tourism, the focus of which is the nearby chateau in Hradec nad Moravicí and the attractive nature in the area. It would certainly be useful to create an educational trail connected to the system of hiking trails.

Conclusion

The race in Žimrovice is undoubtedly one of the unique water management structures in the Czech Republic, whose economic, historical and cultural significance for the entire Opava region was significant. Despite this, the Žimrovice race does not receive the attention it certainly deserves, in comparison with similar structures in Czechia and tourist destinations in the immediate vicinity of the race. The results of detailed archival research and field research have shown a great tourist potential of the race in the context of historical and industrial value, as well as natural wealth of this area.

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Souhrn

Weisshuhnův papírenský náhon (1891) patří bezesporu mezi unikátní vodohospodářské stavby v České republice, jehož ekonomický, historický a kulturní význam byl velmi silný pro celý region Opavska. I presto se této stavbě nevěnuje taková pozornost, jakou by si určitě zasloužila, ve srovnání s obdobnými stavbami v České republice a turistickými cíli v nejbližším okolí. Z výsledků podrobného

archivního bádání a terénního průzkumu je jasné, že samotná stavba náhonu má velký turistický potenciál. Zařazení náhonu mezi památkově chráněné objekty by bezesporu napomohlo k jeho propagaci a zvýšení zájmu turistů. Nejen však technologická hodnota, ale současně hodnota okolního přírodního prostředí, představují velký potenciál této lokality k turistickému využití.

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