

The Railway as a Sustainable Heritage: Monument Railways in the Service of Sustainability through the Example of the Győr–Veszprém Railway Line

Csaba Sándor Horváth^{a,*}, András Veöreös^b

^aDepartment of Humanities and Human Resources, Széchenyi István University of Győr, 9026 Egyetem tér 1., Győr Hungary

^bArchitectural History and Urban Design Department, Széchenyi István University of Győr, 9026 Egyetem tér 1., Győr, Hungary
horvath.csaba@sze.hu

Nowadays, sustainability is a term that has been analysed many times in public life, among the technical and social sciences alike, examined from several sides, but at least often voiced. In the study, in relation to the sustainability of a healthy human life, it is examined how railways and their historic preservation contribute to this. As the basis of the research, it was chosen the only standard-gauge railway line in Hungary that is under monument protection railway line No. 11 between Győr and Veszprém. The research is based on the methodology of historical-architectural research: starting from the history of the railway, it explores its architectural and historical values, discusses the creation and importance of protection, and then tries to draw conclusions about the role of the railway line in sustainability by analysing social phenomena, and finally makes proposals for the role of sustainability regarding its increase. The novelty of the study is that it connects the ways of thinking of specialised fields that previously existed side by side. The purpose of monument protection is the preservation of values, which, according to the 20-th-century way of thinking, primarily serves cultural purposes. The monument protection of some parts of the analysed railway line clearly contributed to the preservation of the infrastructure. As an environmentally friendly and sustainable means of transport, the railway plays a prominent role in the healthy preservation of natural areas. This is proven by the history of the examined railway line.

1. Introduction

The railway, the greatest technical innovation of the 19th century, fundamentally changed the transport and travelling habits of the people and the shipment of cargo as well (Schivelbusch, 2014). However, with the passing of time and the spreading of new means of transport competing with the railway, the function of a line changed in many cases, and it may well have been closed. In the 21st century, the railway infrastructure more and more often functions as a technical and cultural heritage, which preserves the technical feat of previous times and, at the same time, tries to provide a sustainable public transport option. With the expansion of the field of monument protection in the 21st century, some parts of the railway infrastructure appear as technical heritage, preserving the technical performance of previous eras and at the same time providing a sustainable public transport option, connecting settlements, local communities and transferring the culture to the next generations (Misirlisoy and Günçe, 2023). Hungary's railway heritage, with its railway track, associated embankments, cuts, retaining walls, culverts, bridges and tunnels, was built in the period between the Compromise and the First World War and is also a witness to the most prosperous period of the country from an economic point of view. The planning and construction of the railway network with 19th-century equipment was an unimaginable achievement of engineering and industry in today's eyes. The value of the railway heritage has been recognised as world heritage in three cases in the world, and the Magas-Bakony section of line No. 11 is the only one in Hungary to enjoy historical protection (Horváth, 2010).

The aim of the study is to present a straightforward historical interpretation of the concepts of heritage and sustainability following a brief description of the world heritage related to three railways through the Hungarian model to shed light on the need for the sustainability of technical heritages through the history of the Győr–Veszprém–Dombóvári Local Railway, its rescue and the placing of some of its elements under monument protection. According to the proposed hypothesis, the Hungarian example, the story of the Győr–Veszprém–Dombóvári Local Railway, the change of its function, and the present-day monument protection of some of its parts help the discussed railway to become sustainable and adequate, even if in a truncated form, to meet modern – local – social needs. At the same time, it makes the historical technical – heritage available to later generations in a functional and partially original state. From this new perspective, no such study has yet been produced.

2. Theory

The beginnings of organised monument protection in Hungary, as well as in Europe, can be traced back to the second half of the 19th century. The European nations found their national identity in their past, which required the study of history and its tangible evidence, buildings. Getting to know old buildings over time also led to the need for preservation. Antiquity and the Middle Ages – in today's sense – did not have a built heritage; the existing buildings and parts of buildings were simply continued and built on if needed, and the existing, technically usable parts were included in the newer buildings (Alviz-Meza et al., 2023).

In Hungary, the first monument protection law was passed even earlier, in 1881 (Császár, 1983). So, the institutions of historical heritage, which are important for the national consciousness, were consolidated during this period. The motto of *'getting to know and protecting'* developed into a national museum building fever across Europe. Around the turn of the century, the historical document character of the monument had already been recognised, so the focus shifted from restoration and reconstruction to authentic preservation (Riegl, 1903).

The principles and methods of monument protection have changed a lot during the past one and half century (Chastel, 2004). By the end of the 20th century, the concept of strictly taken monuments was replaced by the broader concept of built heritage. Complementing this with the group of archaeological and fine art monuments, it is spoken of as cultural heritage (Román, 2004). In addition to individual buildings, the built heritage includes their associated ensembles, which need to be protected together with their surroundings (Jokhileto, 1986). Due to the dimensions of a railway line, it is a characteristically complex heritage element. The individual engineering and architectural elements can only be interpreted together in a common context, together with an organic relationship with their environment. Protection can be implemented in different ways in each country. The international protection was ratified with 'The Convention on the Protection of the World Cultural and Natural Heritage' in 1972 by ICOMOS (Sonkoly, 2016). By expressing it and extending it to 'intellectual heritage' in 2003, the nations partially assigned their right and duty of forming a community identity to an international organisation (Sonkoly, 2008). In the Convention, two categories, 'cultural' and 'natural' heritage, and their criteria were precisely defined (UNESCO, 1972). To date, 1,157 natural or cultural heritage sites have been added to the list, which was opened in 1978 (UNESCO, 2023). The international principles of monument protection are developed and published by ICOMOS and its affiliated professional organisations (Román, 2002).

The research topic is closely related to the cultural heritage category due to its railway aspect. Within this, it is mainly associated with the following definition: 'groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science'. Currently, the three railway-related world heritage sites comply with at least one of the 6 cultural heritage criteria (UNESCO, 1972). The Austrian Semmeringbahn since 1998, the Indian Mountain Railways of India since 1999, and the Swiss Rhaetian Railway in the Albula/Bernina Landscapes have been listed since 2008. In the case of the first two, it is important that not only the technical and engineering ingenuity was the decisive aspect, but also the architectural masterworks related to the railway line, and with the help of this, natural alpine landscapes became accessible to society for recreational purposes, providing a sustainable form of tourism. The third connected high-altitude, closed areas and still connects them to the economic blood circulation (UNESCO, 2023).

The concept of sustainability was first mentioned in the 1972 UN report entitled 'Our Common Future' as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. In 2001, the EU adopted a strategy in favour of sustainable development. This was revised in 2006, providing 'a long-term vision for sustainability in which economic growth, social cohesion, and environmental protection go hand in hand and are mutually supporting' (EUR-Lex, 2009). Following this line, in 2015, the UN adopted the 2030 Agenda for Sustainable Development, which provided a common blueprint for the peace and future of the planet. At the heart of this is the 17 Sustainable Development Goals, which call for urgent action by all countries in the framework of the global partnership (UN, 2015).

The concepts of heritage and sustainability are linked in many cases. The monument protection of the railway line, which is the subject of this research, proves its outstanding importance for society. The obligation to preserve buildings and structures due to their historical status presupposes the preservation and long-term maintenance of buildings and structures, which, in contrast to the replacement of built elements typical of our time, demands an environmentally friendly and sustainable behaviour from the owner. The railway, as a means of public transport, also offers the most environmentally friendly land transport mode.

3. Method

The aim of our research is to demonstrate through the history of the Győr–Veszprém–Dombóvári Local Railway and the example of some parts of the vicinal that are protected as monuments, that the preservation of the railway line as a built heritage, supported by the protection of monuments, contributes to the sustainability of everyday life in the region. In the first phase, basic concepts such as built heritage, monuments and sustainability were defined. After that, the history of the railway line using traditional historical-architectural methods was investigated, using the results of archival and plan archive research, its architectural and cultural value with the help of personal field trips was assessed, research of the monuments, and the processing of the relevant – by definition, primarily domestic – literature. The analysis of the documents related to the declaration of the railway line as protected and the contemporary press helped to determine the social significance of monument protection. With the help of the revealed facts and today's social phenomena, proposals were formulated on how the preservation of the historical values of railway lines and the maintenance and operation of the railway line can serve sustainability.

4. Result and Discussion

In historical architecture, the buildings and engineering creations were established for a specific functional purpose, according to the social and artistic needs of the given era, using the building materials and structures available to the people of that time. No building or structure was built to be a monument. However, those achievements that were technically and morally suitable for this and survived their planned lifespan or were able to be renewed – it can be said they were sustainable – earned a special appreciation from society due to their age and importance: they could become monuments.

The idea of a new local railway line to Győr came up in 1882 with the establishment of a bag railway to Zirc. However, this would not have proved to be profitable in any way, so it could not be implemented. Starting from 1886, new ideas arose to connect even the inner areas of the Bakony, which was rich in pigs, wood, and brown coal, to the city. Following that, after several debates and battles of interests, the holders of preliminary construction permits for the railway line between Győr and Veszprém merged with the initiators of the Veszprém–Dombóvár section. The future line was also important from a military point of view for the Viennese court, as it could function as a backup line for the southward mobilisation of the Austro–Hungarian Monarchy. As a result, the Győr–Veszprém–Dombóvári Local Railway PLC was established, which soon received a construction permit for the entire line (Horváth, 2023). A total of 493 m of tunnels and several viaducts had to be built on the 189.72 km Győr–Veszprém–Dombóvár railway line, of which the longest – the one later became protected – was in Eplény with its 310 m. Finally, on August 9, 1896, the Győr–Bakonyszentlászló section was handed over to traffic after a police construction inspection. After that, all that was left was the handover of the Bakonyszentlászló–Veszprém line, which took place on December 15, 1896. The local railway passed through a picturesque mountainous region in the Cuha Valley, becoming the railway line crossing the most beautiful and romantic cultural landscape of Hungary. On the 189.72 km long Győr–Veszprém–Dombóvár railway line, several viaducts and a total of 493 m of tunnels had to be built, of which the longest – which later became protected – was Eplény with its 310 m. Although the railway was originally created for industrial purposes, it also became an important line for passenger traffic, connecting two neighbouring county seats (Horváth, 2010).

Currently, the railway is mainly important from a tourist point of view. The protected natural areas of Magas-Bakony (Cuha Valley, Kőpince Cave, Ördög Meadow, Hódos Stream Valley), important monuments (Zirc, abbey; Csesznek, castle ruins; Bakonyszentlászló, medieval church; as well as the railway line itself), places of tourist attraction (Vinye, adventure park; National Blue Tour) are connected by it with Győr and Veszprém, providing an environment-friendly, sustainable way to get there compared to the car, where the trip itself can become a relaxing, experiential, leisure activity. The popular starting point for tours in Bakony is Porva-Csesznek station, which has no paved road at all. The Zirc–Veszprém and Bakonyszentlászló–Pannonhalma–Győr sections of the line are also important from the business traffic aspect and may become important in case of future development. From the aspect of freight transport, the section between Győr and Veszprémvarsány should be mentioned.

The only standard-gauge railway line in Hungary under monument protection is the Magas-Bakony section of railway line Nr. 11 between Bakonyszentlászló and Veszprém on the line between Győr and Veszprém (Register

of monuments, 2011). Besides the track, four tunnels, two larger and two smaller viaducts, several smaller bridges, retaining walls, culverts, and the buildings of the stations represent historical value in the section. A monument was erected above one of the viaducts in 1896 to commemorate the construction of the railway.

In 2006, similarly to some other lines, the termination of passenger traffic on the local railway was in plan. However, an important role was played by the cooperation of the locals in rejecting the intention to close it, who demanded an 'immediate and firm withdrawal' of the plan to close the Cuha Valley railway from the Ministry of Regional Development. In their letter, they emphasised that the railway was not just a means of transport but much more than that. 'A national treasure that cannot be replaced by public roads, it connects cultural and historical monuments with natural values as a magnificently lined mountain track'. It was followed by a signature collection, a demonstration and an impact study. According to the position of the Hungarian Tourist Association: 'Regarding the importance of the Győr–Pannonhalma–Veszprémvarsány–Cuha-valley (Porva-Csesznek)–Zirc–Veszprém railway line for the traffic, environmentally friendly transport, tourism and technical heritage protection, it is essential to pull out the Veszprémvarsány–Veszprém section of this railway line from the ones that are planned for termination. It is also recommended that the line section in the Cuha Valley should be declared protected, fulfilling its role in the transport and tourism of the Bakony and the region.' (MATUR, 2009) This little battle eventually led to results (Horváth, 2010).

Act LXIV of 2001 on the Protection of Cultural Heritage provided law about three categories of cultural heritage in Hungary: the protection of archaeological heritage, the protection of monuments and the protection of cultural assets (Low, 2001). The affected section of the Győr–Veszprém railway line (Bakonyszentlászló–Veszprém) shall be included in the monument protection group, as the Cultural Heritage Protection Office in Sopron on June 18, 2007 granted the Bakonyszentlászló–Veszprém section Bakonyszentkirály 049; 047; 044, Csesznek 079/2, Zirc 0217, Eplény 010, Veszprém 01064/2, 01055 properties temporary monument protection (CHPO, 2009). Subsequently, in 2008, the mayor of Győr, Zsolt Borkai, proposed joining the Cuha Valley Bakonyvasút Association, which was accepted by the general assembly. Under this law, it was considered necessary to place the Cuha Valley section of the affected railway line under railway monument protection, given its unique touristic, industrial, historical, and environmental values of Hungary. The goal of the Association was to bring together and make more efficient the work of local governments, business associations, civil organisations, and private individuals who wish to participate in supporting the development and operation of railway line Nr. 11 between Győr and Veszprém. The importance of increasing the attractiveness of the railway as a monument – the built and natural environmental and touristic values of the environment was also emphasised, spreading the knowledge and awareness towards the local cultural landscape both here and beyond the border (Borkai, 2008). Finally, in order to preserve the architectural, technical history, and industrial art values of the Magas-Bakony railway line built between 1895 and 1897, Decree Nr. 53/2011 (VIII. 25.) § 3 of the Ministry of National Resources on the declaration of certain properties as monuments, as well as on the declaration of them as areas of historical significance and on the termination of their historical protection declared the historical protection of the Magas-Bakony section of the line, which affects the settlements of Bakonyszentlászló, Bakonyszentkirály, Porva, Csesznek, Nagyesztergár, Zirc, Olaszfalu, Eplény and Veszprém and typically covers a 50–50 m wide strip on both sides of the railway line. Monument protection applies to the track body, as well as the buildings on the affected properties, the millennium monument, tunnels, bridges, retaining walls, slope stabilisation, and other technical facilities. The protection came into effect on September 2, 2011, the 8th day after the announcement of the government decree (Register of Monuments, 2011).

So, not the entire line, but some parts of it (Bakonyszentlászló station, Vinye–Porva-Csesznek–Zirc section, some parts of the Eplény–Veszprém section) were placed under protection, but at the same time it was possible to avoid its closure and termination. Detached from its original purpose, the railway line still serves the huge number of tourists who set off on excursions to the Cuha Valley, and at the same time provides a railway connection directly between Győr and Veszprém, while traffic on it was abolished between Veszprém and Dombóvár.

The buildings belonging to the stations of the line have survived in different condition due to their renovations that were carried out at different times, of which three typical examples were highlighted. All three buildings belong to the group of MÁV-HÉV (Hungarian State Railways Local Railway) standard buildings (Kubinszky, 1983), and despite their originally similar design, they show a completely different image today.

The registration building of Pannonhalma – although it cannot be found among the monuments under monument protection – is a special piece of the monument of the Hungarian railway architecture. The first-class standard building with a T floor plan was transformed into its present form in the period between the two world wars, at the time of the emergence of modern architecture. It was then that it received clinker brick cladding on the facade, the covered open vestibules with twisted brick columns, the brick ornate cornices holding the windows together, and the entrance canopies while they were freed from the historicising architecture. The transformation was clearly carried out with (then) contemporary architectural tools, while historical considerations did not play a role. Despite this, the resulting building is harmonious, the new and old parts fit together nicely, and a high-

quality – even slightly archaising – modern building was created. Its architectural significance lies primarily in the fact that hardly any railway buildings were built during this period. The building was renovated in 2023. During the renovation, the goal was clearly to preserve the existing architectural image.

The station of Bakonyszentlászló was restored after the damages of the Second World War (Sarkadi, 2020). The gable wall facing the tracks was replaced by a pitched roof, the proportions of the windows were changed, and some windows were removed. Instead of the inward-opening windows placed on the outer plane of the facade, inward-opening doors and windows were installed behind the frame. Only the forward-jumping corner pilasters remained from the historicist architecture. The purpose of the renovation was to promote usability without the intention of preserving the historical condition or significant contemporary architectural intervention. A restoration plan for the building was drawn up in 2022 (Nagy-Balogh and Balogh, 2022), which aims at the historical reconstruction of the facades based on historical architectural research.

The registration building of the station of Zirc got its present form in the 1970s based on the stylistic features of the building. Due to the slanted roof covering in a different direction, the proportion and shape of the windows, as well as the modern roof, give the impression of a modern building. The historical station building can only be recognised based on the main mass proportions. It is typical for the poor technical quality of the conversion that the windows had to be replaced again since then. During the reconstruction, the goal was to create a contemporary building instead of preserving the original form, which was achieved with architectural and structural solutions typical of the era.

There were several buildings along the line that did not survive until getting monument protection. The Ravazd and Győrasszonyfa, Vinye railway buildings, as well as the shadow chair of the Bakonyszentlászló station, were all demolished – although the latter could still serve the needs perfectly after an internal modernisation. At Ravazd, the station has also closed, and at Győrasszonyfa, an installed ready-made rain shelter is available to passengers – the latter solution is typical along railway lines where, due to the lack of protection, the preservation of old buildings does not even arise as an option, and the desire to get rid of the problems of the old building leads to the destruction of historical buildings.

By improving the technical condition of the railway line, modernising the safety devices, using modern vehicles, creating a passenger-friendly timetable, and possibly creating new stops closer to the centre of the settlements, higher speeds could be achieved on the suburban sections. The operation of modern, comfortable vehicles helps divert people to public transport. The development is especially useful on the Bakonyszentlászló–Győr section since the trains arrive in the city centre from Győr, apparently at a higher speed than road vehicles during the morning and afternoon rush hours.

5. Conclusion

Our hypothesis was confirmed; the existing buildings, which have undergone several transformations and renovations, make it obvious that the preservation and modernisation of buildings do not only serve historical aspects but are also very important from the viewpoint of sustainability. Based on the examination of the buildings of the railway line, it can be said that monument protection, which motivated (enforced?) preservation, clearly contributed to the preservation of the buildings. Renovation, preservation, running, and maintenance are always cheaper than demolishing the old building and building a new one in its place – it requires fewer resources and indirectly serves the goals of environmental protection and sustainability as well. As an environmentally friendly means of transport, the railway plays a key role in the healthy preservation of natural areas, which is why it is of great importance that the Magas-Bakony excursion sites remain accessible by train. Rest and recreation in natural areas are very popular, as they contribute to the preservation of a healthy lifestyle, contributing to the flowering of society. The Bakony railway helps this goal to a great extent. By compressing the timetable, increasing the speed, and establishing new stops – without harming the historical values – the line's role in business traffic could be increased both in the suburban sections of Győr and Veszprém. In this way, the railway line could also contribute to stopping the migration of the population of rural settlements.

References

- Alviz-Meza A., Iglesias L., Castillo D., De Leo A., Torres-Salazar E., Orozco-Agamez J., 2023, Study of Pigments of Peruvian Colonial Mural Painting Through Chemical Analysis and Under Simulated Conditions for Aiming Cultural Heritage Care. *Chemical Engineering Transactions*, 98, 261–266.
- Borkai Zs., 2008, Presentation by Mayor Zsolt Borkai, Entry into the Cuha-völgyi Bakonyvasút Association, Győr Megyei Jogú Város Közgyűlése. <jogtar.gyor.eu/node/9176>, accessed 17.06.2008. (in Hungarian)
- Chastel A., 2004, The concept of heritage, Chapter In: Sonkoly G., Erdősi P. (Ed), *Cultural Heritage*, L'Harmattan, Atelier, Budapest, Hungary, 97–132. (in Hungarian)
- CHPO, 2009, Cultural Heritage Protection Office, Decision for the Temporary Monument Preservation of the Veszprém–Győr Railway. <mkk.zpok.hu/doc/ideiglvedettseg.pdf>, accessed 24.05.2009. (in Hungarian)

- Császár L., (Ed.) 1983, *The Monument Preservation in Hungary*. Képzőművészeti Publisher, Budapest, Hungary. (in Hungarian)
- EUR-Lex, 2009, *EUR-Lex Sustainable Development*. <eur-lex.europa.eu/EN/legal-content/glossary/sustainable-development.html>, accessed 13.07.2023.
- Horváth Cs. S., 2010, *The Cuha Valley Railway like Cultural Heritage*, Chapter In: Lőrincz I. (Ed), XIII. Apaczai-days International Scientific Conference, Creativity and Innovation Proceedings, Nyugat-magyarországi Egyetem Apáczai Csere János Kar, Győr, Hungary, 287–296. (in Hungarian)
- Horváth Cs. S., 2023, *Győr and the Local Railways in the 19th Century*, Chapter In: Horváth, Cs. S. (Ed), *Traffic with a thousand faces II. The focus is on passenger transport*, Közlekedéstudományi Egyesület, Budapest, Hungary, 221–249. (in Hungarian)
- Jokhileto J., 1986, *A History of Architectural Conservation*, University of York, York, UK.
- Kubinszky M., 1983, *Old Hungarian Railway Stations*, Corvina Publisher, Budapest, Hungary. (in Hungarian)
- Low, 2001, LXIV. *Low for the Protection of Cultural Heritage*. <net.jogtar.hu/jogszabaly?docid=a0100064.tv>, accessed 9.07.2023. (in Hungarian)
- MATUR, 2009, *Negative Analysis Prepared by the Hungarian Tourist Association (MATUR) Regarding the Plan to Terminate the (Győr–)VeszprémVarsány–Veszprém Railway Line*. <termeszettjaro.hu/files/zirc_matur_allasfogl.doc>, accessed 23.05.2009. (in Hungarian)
- Misirlisoy D., Günçe K., 2023, *Railways as Common Cultural Heritage: Cyprus Government Railway. The Historic Environment: Policy & Practice*, 14, 112–128.
- Nagy-Balogh L., Balogh M., 2022, *Plan for the Rehabilitation of the Railway Station Building in Bakonyszentlászló*, Manuscript, Repository of the Győr-Moson-Sopron County Government Office, Hungary. (in Hungarian)
- Register of Monuments, 2011, *List of Monuments of Hungary*, Győr-Moson-Sopron County Government Office General Department of Construction and Heritage Protection, Győr, Hungary. (in Hungarian)
- Riegl A., 1903, *The modern monument culture, its nature and its origins*, Verlage W. Braumüller, Wien–Leipzig, Germany. (In German)
- Román A. (Ed), 2002, *Book of the Charters for Monument Preservation*, ICOMOS Hungarian National Committee, Budapest, Hungary. (in Hungarian)
- Román A., 2004, *487 Paragraphs and 617 Pictures about the Monument Preservation*, Terc Publisher, Budapest, Hungary. (in Hungarian)
- Sarkadi M., 2020, *The Railway Station of Bakonyszentlászló*, Scientific Documentation, Manuscript, Repository of the Győr-Moson-Sopron County Government Office, Hungary. (in Hungarian)
- Schivelbusch W., 2014, *The Railway Journey, The Industrialization of Time and Space in the Nineteenth Century, With a New Preface*, University of California Press, Berkeley, USA.
- Sonkoly G., 2008, *National Heritage – World Heritage, Cultural Heritage Paradigm*, Chapter In: Czoch G., Klement J., Sonkoly G. (Eds), *Papers in Honor of György Granasztói*, Atelier, Budapest, Hungary, 247–255. (in Hungarian)
- Sonkoly G., 2016, *Our Fluffy Landscapes*, ELTE Eötvös Publisher, Budapest, Hungary. (in Hungarian)
- UN, 2015, *United Nations, Department of Economic and Social Affairs Sustainable Development* <sdgs.un.org/goals>, accessed 10.07.2023.
- UNESCO, 1972, *UNESCO World Heritage Convention, Convention Concerning the Protection of the World Cultural and Natural Heritage* <whc.unesco.org/en/conventiontext/>, accessed 9.07.2023.
- UNESCO, 2023, *UNESCO World Heritage Convention, World Heritage List* <whc.unesco.org/en/list/>, accessed 11.07.2023.