

HOW DOES FORMAL PROTECTION PRESERVE THE VALUES OF INDUSTRIAL HERITAGE? THE CASE OF THE CITY OF NIŠ, SERBIA

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ABSTRACT

The city of Niš, Serbia, possesses a rich industrial history and a production tradition dating back to the 19th century. Many industrial sites have lost their original functions and remain abandoned in central and peri-urban areas, others are partially utilized, and a portion is still used for production purposes. However, a very small percent of these structures benefit from legal protection, and most have not been formally evaluated by the city's conservation institutions. Furthermore, they are often overlooked in urban planning agendas. This lack of attention makes industrial heritage sites in Niš vulnerable to destruction, inappropriate reuse, and structural modifications that ultimately compromise their authenticity and identity. This research examines four industrial sites that are significant landmarks in Niš. The Tobacco Industry is recognized and protected permanently as a cultural property. In contrast, the Mechanical Industry lacks formal legal protection. The remaining two (the Electronic Industry and Đuka Dinić + Stari Vulkan) are sites with buildings that are recognized as potential cultural properties and have a temporary protection status. By investigating the historical and architectural significance, current utilization practices and physical conditions of these properties, this study addresses the following research question: Can the values of industrial heritage sites be preserved without an adequate legal protection framework, and does legal protection ensure their appropriate use?

KEYWORDS _ *Industrial heritage, cultural property, heritage protection, heritage management, The City of Niš*

INTRODUCTION

Industrial heritage is as an integral part of the broader category of cultural and built heritage, and it represents the remains of human labour within the history of technology (Kulenović, 2009). Unlike public, residential, and sacred buildings, industrial buildings and sites do not have a long historical development. Industrial facilities, in the scale and architectural form recognizable today, emerged in the 18th century during the First Industrial Revolution in England (Nikolić, 2018). Even though industrialization in Serbia came later than in Western Europe, the goal of making industrial development a strategic model for the economic growth of the former Republic of Yugoslavia made Serbia a highly industrialized country in the past century (Rafailović, 2022). However, numerous historical events in the late 20th century have contributed to the cease of production. Most sites were abandoned, and became brownfield locations. Globally, over the past fifty years, abandoned industrial structures with heritage values have become widely recognized as an integral component of sustainable development in contemporary society (Roter Blagojević & Nikolić, 2012). Nevertheless, this specific heritage remains frequently marginalized within the legal and physical protection system (Stojanović & Janjušević, 2018). The main question arises: can former industrial facilities survive and can their authentic values be preserved without an adequate cultural protection framework?

This paper examines the practice of protection of industrial heritage buildings and sites in the city of Niš, Serbia. As an important industrial city in Yugoslavia, the city of Niš has a wide palette of industrial facilities that cover an area of 2.3% of the entire city. However, with a few exceptions, the majority of former industrial facilities are deprived of any kind of formal protection. This lack of attention makes industrial heritage sites in Niš vulnerable to destruction, inappropriate reuse, and structural modifications that ultimately compromise their identity. By conducting a case study on four industrial sites (the Tobacco Industry, Đuka Dinić + Stari Vulkan, Electronic Industry, and Mechanical industry), the purpose of this research is to determine does formal cultural protection truly ensure their survival and appropriate use?

THEORETICAL BACKGROUND: HISTORICAL DEVELOPMENT AND HERITAGE PROTECTION FRAMEWORK

The beginning industrialization in Serbia is linked to the restoration of statehood and the establishment of the modern Serbian state at the end of the 19th century, following the liberation from the Ottoman Empire (Drašković, 2014). Industrial buildings and sites were designed in response to the needs of the emerging economy, which was based on cooperation with developed countries, the adoption of laws that encouraged domestic industrial growth (Jevremović & Turnšek, 2011). Even though pre-World War II (WWII) industrialization was blooming, a rapid industrial development was seen after the formation of the socialist country of Yugoslavia in the aftermath of WWII. Numerous cities, such as the city of Niš, became industrial centres of the country, therefore many new sites were built, and the existing prewar ones were further developed and reorganized. However, at the end of the 20th century, dramatic social changes, such as the state dissolution, political shifts, transition towards capitalistic economic models, and warfare, triggered the process of Serbia's deindustrialization. As a consequence, former industrial sites became vacant, non-functional spatial entities within cities, which, in addition to economic losses, contributed to the emergence of distinctive urban landscapes characterized by industrial ruins and abandoned properties prone to further decay and degradation (Milovanović et. al, 2013). Due to the lack of activity in these areas, and the lack of protection initiatives, industrial heritage has become increasingly endangered.

In Serbia, institutional efforts for the protection of cultural heritage came in the aftermath WWII, in 1947, when the Republic Institute for the Protection of Cultural Monuments (IPCM) was established (Gavrilović, 2012). The very first laws that regulated the protection of cultural heritage came into force in 1945 when the Law on Protection of Cultural Monuments and Natural Rarities of the Democratic

Federative Yugoslavia was drafted. Numerous additions and reorganizations of the same law were brought during the 50s and 60s. A new law in the cultural heritage protection framework came in 1977, when Yugoslavia ratified the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage from 1972. Two more laws were passed, named The Law on Cultural Goods, one from 1990 and the currently used one from 1994 (with amendments and additions from 2011, 2020, 2021, and 2023) (Vukanović & Stojanović, 2018). The current Law recognizes tangible and intangible cultural heritage. Historic architectural buildings, monuments and sites are classified within the tangible category – commonly known as built heritage, and can be further divided into six subcategories – cultural monuments, spatial cultural-historical units, archaeological sites, landmarks, immovable cultural properties of exceptional importance, and immovable cultural properties of great importance.

Despite of the long tradition of heritage protection in Serbia, industrial heritage comprises a very small amount of the overall protected heritage. Out of 2666 listed cultural goods, industrial properties make up around 55 goods, or approximately 0,5% (IPCM, 2025). The reason for such a state of this type of cultural heritage is reflected in the state's lack of recognition of the importance of industrial heritage, which caused the lack of a clearly defined cultural policy (Nikolić et. al, 2024). However, there are numerous facilities that have a so-called previous protection status. Even though they are not officially registered as cultural goods, they have a similar treatment like other protected goods (Law on Cultural Goods, 2023). This temporary solution has a goal of providing enough time for the experts to valorize and determine if the property meets the criteria for permanent protection. Most often buildings gain the status of goods with previous protection in the process of drafting municipal spatial plans.

CASE STUDY ANALYSIS – INDUSTRIAL SITES IN THE CITY OF NIŠ, SERBIA



Figure 1: The distribution of historic industrial sites in Niš (purple – case studies) (source: a3.geosrbija.rs, edited by the authors)

Approximately 40 former production sites, classified as industrial brownfields, are dispersed across the city of Niš, covering an area of roughly 260 hectares, or 2.3% of the total urban area (Figure 1). For this research, the Tobacco Industry, Đuka Dinić + Stari Vulkan, Electronic Industry, and Mechanical industry are analysed. The authors used photos collected from the site-visits conducted during from January to March 2025, as well as information gained from local archive, IPCM, and planning documentation (Figure 2).

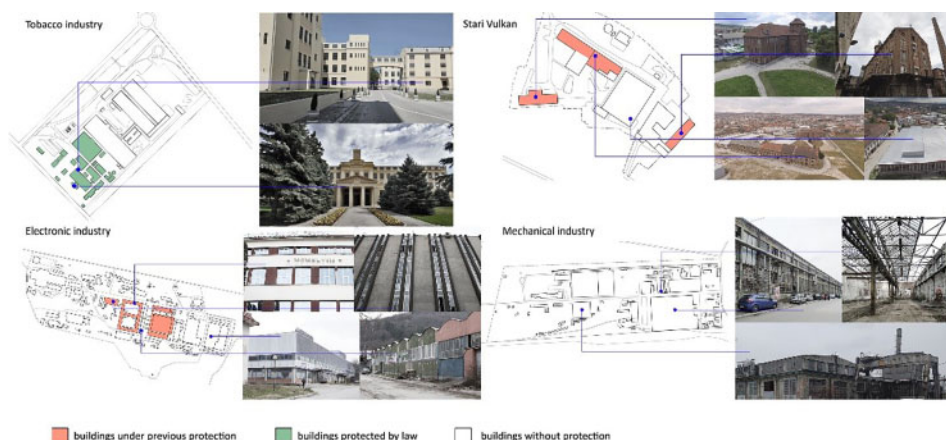


Figure 2: Case studies of historic industrial sites in Niš (source: authors, using PDR plans, a3.geosrbija.rs, photo and technical documentation)

The Tobacco Industry site (TIS) – the site has been operating since 1914, after it was relocated from Belgrade where it existed since 1885 (Đurović & Vučković, 2013). The industrial site was constructed after World War I (WWI), from 1925 until 1930. The industry was nationalized after WWII. As it was one of the biggest industrial facilities in Yugoslavia, it faced significant reconstruction, modernization, technological and organizational rearrangement. After the collapse of communism, the TIS faced privatization and was bought by Philip Morris International in 2003. Later, the site faced expansive capacities growth, with contemporary large-scale production buildings built in the interior of the site, occupying a total area of around 19 hectares. It is located approximately 2 km from the city center. It was built in an eclectic style with subtle facade decorations (Jevremović, 2022). Some authors believe that the composition of the buildings draws inspiration from the Chicago architectural school that was characteristic for late 19th and early 20th century (Keković & Čemerikić, 2009). Since its establishment, and to this day, it has been operating as a tobacco industry. Historic buildings within the site were preserved and were formally protected by the IPCM of Niš in 1987, thus the site is formally registered as a spatial cultural-historical unit protected by law (IOG Niš, 1987). Severely damaged during the NATO bombing of Serbia in 1999, it was completely restored in 2004 (Keković & Čemerikić, 2006).

Đuka Dinić + Stari Vulkan (Vulkan) – the Leather and Textile Industry “Đuka Dinić” is the successor to a leather factory originally established in 1910. Initially operating as a private company, it continued to grow until 1949, when it was confiscated, nationalized, and modernized. Notably, industrial modernization did not substantially alter the site’s appearance (Jevremović, et al., 2022). During the pre-WWII period and immediately post-WWII, the Leather and the Rubber Factory (Vulkan) operated as a single company, producing joint manufacturing outputs. In some historical sources and maps, this location is collectively referred to as “Stari Vulkan”, due to the symbiotic industrial production of both sites. The most significant structures date back to the pre-WWI period and have architectural characteristics of multi-storey industrial mills similar to traditional English industrial architecture, as well as single-storey production halls. Đuka Dinić leather production site occupies an area of roughly 4.2 hectares, while the Stari Vulkan rubber production site occupies an area of roughly 0.8 hectares. It is located within the central urban matrix of the city of Niš, 1 km from the city centre. It is currently unutilized. The entirety of the site lacks formal protection, however a thorough study was published in 2024 claiming that three buildings within the site possess exceptional cultural, architectural, and historical values and should be considered for formal protection (registered as goods under previous protection) (IPMC, 2025).

The Electronic Industry site (EI) – the site was formed in 1948, in the aftermath of WWII, during the era of rapid industrial development. Prosperous production lasted throughout the 20th century, and started declining as numerous factors such as deindustrialization, warfare, transition towards democratic

political models disrupted the production and the ability to keep up with global industrial giants. Afterwards, it was partially abandoned and privatized. The site had a phased development, spanning from 1948 to 1980 (Stanojević et. al, 2019). Due to that development, there is no architectural and stylistic unification. Nevertheless, there are valuable and striking industrial facilities that testify about the period of Yugoslav socialist industrial development, mostly built in concrete. The site is located in the peri-urban area of the city of Niš, 4.2 km from the city centre. It occupies an area of around 60 hectares. Currently it is being reused for various purposes such as commerce, business, education, production, storage, sport, culture, etc. Only 5 out of 119 buildings within the site are recognized as “valuable structures from the post-WWII mass industrialization period of Yugoslavia” by the experts from the IPCM Niš for the purpose of the draft of the Detailed Regulation Plan (City of Niš, 2024). These buildings are registered as cultural good with previous protection. The rest of the site is not protected.

The Mechanical Industry site (MIN) – the site was an energy, mining, and railway production industry. Although it had modest facilities in the 19th century, it faced capacity expansions post-WWII. It has three plants across the city, but the most significant one is the Lower MIN plant, situated near the historic city core. It occupies an area of roughly 30 hectares. A prosperous production that has actively functioned during socialism has faced a downturn at the beginning of the 1990s as a consequence of ideological shifts. The MIN was sold to stock companies in 1990, and later, in 1998, merged into a MIN Holding. The most noteworthy privatization process was in 2007 (Antić & Jevremović, 2023). There are roughly a hundred buildings that make up the site, with notable large volume modernist production halls built in concrete and steel, with visible installations that contribute to the industrial aesthetic of the space. However, besides from some spaces being used for business, production, storage, sport, health and commerce, the rest is abandoned and in poor physical condition. The IPCM Niš did not classify the MIN site as any type of cultural good that is defined and protected by law.

Table 1: Case study analysis summary - area, facilities, location, period and style (source: authors)

	land area	number of buildings within the site	location	period of construction	architectural style
Tobacco Industry	19 ha	ca. 40	peri-urban	1925 – 1930; 2004-	Eclecticism; Chicago school
Đuka Dinić + Stari Vulkan	5 ha	22	central	1910 - 1941; 1945-unknown.	English industrial architecture; modernism.
Electronic Industry	60 ha	119	peri-urban	1948-1980	Socialist modernism
Mechanical Industry	30 ha	ca. 100	central	1945 – unknown.	Socialist modernism.

Table 2: Case study analysis summary - use, utilization, protection status, physical state (source: authors)

	historical use / current use	utilization of buildings in the site	heritage protection status	physical state
Tobacco Industry	tobacco production / tobacco production	completely utilized	Spatial cultural-historical unit.	very good
Đuka Dinić + Stari Vulkan	rubber and leather production / currently unused	unutilized	3 buildings cultural goods under previous protection.	very poor
Electronic Industry	radio and X-ray devices production / business, commerce, education, culture, sport	almost completely utilized	5 buildings cultural goods under previous protection	good
Mechanical Industry	energy, mining and railway production / sport, culture, production, business	partially utilized	Without status.	poor

DISCUSSION

The case study analysis reveals that Niš possesses a diverse palette of industrial heritage sites distributed throughout the urban fabric. However, only one site (TIS) is formally protected by law. This may be attributed to its continuous industrial production, the strategic importance of manufacturing to the national economy and its middle-size area. On the other hand, the site benefits from continuous utilization due to its protection status. While initiatives exist for the permanent preservation of other sites, such as El and Vulkan, formal recognition remains pending. Conversely, MIN has yet to be explored by heritage professionals. Several factors contribute to this oversight, including a shortage of professionals at the IPCM – the sole institution responsible for heritage site preservation in Niš. Furthermore, practice shows that industrial buildings that are stylistically richer are often the subject of protection, while buildings that are stripped of any stylistic elements are often neglected within the protection framework. Additionally, the complex ownership status of industrial sites presents legal and administrative challenges. Investor-driven urban planning, coupled with the absence of a clear vision for the future use of these sites, further complicates preservation efforts. Moreover, industrial sites are often perceived as deteriorating structures associated with negative societal impacts, including unemployment, pollution, and economic uncertainty. Addressing these perceptions requires a methodological approach that incorporates insights from various social sciences.

In response to the research question, whether formal heritage protection ensures the survival of industrial sites, the evidence suggests that legal protection does provide a safeguard. It establishes mechanisms for monitoring industrial heritage buildings, preventing unregulated alterations, and ensuring appropriate adaptive reuse. The very process of recognizing and designating a site for protection, classifying it as a good under previous protection, increases its chances of preservation. However, while sites under previous protection may not face direct threats of demolition or improper renovations, they often suffer from neglect, leading to physical deterioration over time. In contrast, sites without formal protection are significantly more vulnerable to inappropriate use, unregulated redevelopment, and even complete destruction – denying their historical and architectural significance.

CONCLUSIONS

The neglect of industrial heritage sites in Niš poses a serious threat to the preservation of their authentic values, identity, and uniqueness. Safeguarding these former production sites demands considerable effort and collaboration among various stakeholders, including heritage professionals, policymakers, investors, and urban planners. However, a lack of interest and personal commitment significantly hinders progress. While formal legal protection does not guarantee the complete preservation of industrial heritage, especially in a society grappling with corruption and economic pressures, it remains a crucial first step. Legal safeguards act as a barrier against unregulated demolition, inappropriate renovations, and ad hoc repurposing. Although some industrial heritage sites may persist without official protection, their long-term survival is unlikely without the oversight of heritage experts and the enforcement of conservation policies. Without such measures, these valuable sites will continue to deteriorate.

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REFERENCES

- Antić, Uroš, and Jevremović, Ljiljana, 2023. "Effects of Post-socialist Industrial Brownfields Transformation on Revival of Historic Urban Network: Case Study in Niš, Serbia". *Proceedings of DOCONF23 / Facing Post-socialist Urban Heritage*, 5-7 October 2023, Budapest, Hungary: 42-53.
- City of Niš, 2024. Second Amendments and Additions to the Detailed Regulation Plan of the Electronic Industry Site in Niš, 2024. Institute for Urbanism of the City of Niš, Serbia.
- Drašković, Božo. 2014. "Slom industrijskog sektora u Srbiji: postoje li šanse za reindustrijalizaciju." In *Deindustrijalizacija u Srbiji: mogućnosti revitalizacije industrijskog sektora*, edited by Drašković Božo 107-33. Belgrade: Institut ekonomskih nauka, Beogradska bankarska akademija, Fakultet za bankarstvo, osiguranje i finansije.
- Đurović, Ljiljana, and Vučković, Nevena, 2013. *Vodič istorijskog arhiva Niša* Niš, Serbia: Istorijski arhiv Niš.
- Gavrilović, Ljiljana. 2012. "Nepostojeće nasleđe zemlje koje nema." *Proceedings of the Ogledi o jugoslovenskom nasleđu – Zbornik radova sa naučnog skupa Okviri konstruisanja jugoslovenskog kulturnog nasleđa 2012 Belgrade, Serbia*: 39-55.
- Institute for the Protection of Cultural Monuments of Serbia. Accessed March 25, 2025. <https://www.heritage.gov.rs/cirilica/index.php>
- Intermunicipal Official Gazette – Niš no. 38, pp. 3, 1987.
- Jevremović, Ljiljana, 2022. *New Use as a Determinant in the Treatment of Industrial Brownfields – Revitalisation Models and Classifications – doctoral dissertation*. Niš, Serbia. Faculty of Civil Engineering and Architecture, University of Niš.
- Jevremović, Ljiljana, and Turnšek, Branko. 2011. "Possibilities of Brownfield Sites as Land Resource for Sustainable Urban Development and Space Management." *Proceedings of the 4th International Conference on Hazards and Modern Heritage – "The Importance of Place"* Sarajevo, Bosnia and Herzegovina: 416-28.
- Jevremović, Ljiljana, Rančić, Đurđina, and Jordanović, Marina, 2022. "Industrial Heritage – Morphological Approach to Urban Block Transformation on the Example of Stari Vulkan". *Proceedings of the Twelfth International Conference Assessment, Maintenance and Rehabilitation of Structures* Vrnjačka Banja, Serbia: 504-13.
- Keković, Aleksandar, and Čemerikić, Zoran, 2006. *Modernism in Niš 1920-1941*. Niš, Serbia: Society of Architects of the City of Niš.
- Kulenović, Rifat. 2009. *Industrial Heritage of Belgrade*. Belgrade, Serbia: Museum of Science and Technology.
- Law on Cultural Goods (Official Gazette of the Republic of Serbia, no. 71/92, 52/2011 – other laws, 99/2011 – other law, 6/2020 – other law, 35/2021 – other law, 129/2021 – other law and 76/2023 – other law). Accessed March 19, 2025. https://www.paragraf.rs/propisi/zakon_o_kulturnim_dobrima.html
- Milovanović, Đorđe, Radovanović, Milica, Milosavljević, Ivan, Milanović, Jasna, Rudnik Milanović, Aleksandar, Jurišić, Miloš. 2013. *Industrial Heritage – Preservation and Rehabilitation*. Kragujevac, Serbia: Cultural Heritage Preservation Institute Kragujevac.
- Nikolić, Marko. 2018. "Contribution to Research, Protection and Revitalization of Industrial Heritage of Belgrade." *Journal of Faculty of Civil Engineering* 34: 101-17.
- Nikolić, Marko, Šćekić, Jelena, Drobnjak, Boško, and Takač, Ena, 2024. "Examined in Theory – Applicable in Practice: Potentials of Sustainable Industrial Heritage Conservation in a Contemporary Context – The Case of Belgrade". *Sustainability* 16, 2820.
- Rafailović, Jelena. 2022. "Two Centuries of Industry in Serbia." In *On Factories and Workers*, edited Šibalić Slobodanka and Momčilović Jovanović Aleksandra, 34-45. Belgrade: Museum of Yugoslavia and Museum of Science and Technology.
- Roter Blagojević, Mirjana, and Nikolić, Marko. 2012. "Predlog revitalizacije umetničke livnice Skulptura." *Nasleđe XIII*: 221-33.
- Stanojević, Ana, Jevremović, Ljiljana, Milošević, Mimica, Turnšek AJ, Branko, and Milošević, Dušan, 2019. "Identifying Priority Indicators for Reuse of Industrial Buildings Using AHP Method – Case Study of Electronic Industry in Niš, Serbia". *Proceedings of Places and Technologies*, Pécs, Hungary.
- Stojanović, Vladimir, and Janjušević, Bogdan. 2018. "Industrijsko nasleđe u Vojvodini: zaštita, tipologija i moguća revitalizacija danas." *Sociologija i prostor* 56 (2018) 210 (1): 71-90.
- Vukanović, Maša, and Stojanović, Ana. 2018. *Kultura i zakoni o akterima upravljanja i kulturnom nasleđu*. Belgrade, Serbia: Zavod za proučavanje kulturnog raz