

Uroš Antić, University of Nis, anticuros6@gmail.com

Aleksandar Keković, University of Nis, aleksandar.kekovic@gaf.ni.ac.rs

VALUES OF INDUSTRIAL HERITAGE FROM THE SOCIALIST PERIOD IN A POST-SOCIALIST CONTEXT – THE CASE OF NIŠ, SERBIA

Abstract:

The city of Niš, Serbia, has been an industrial production hub since the liberation from Ottoman rule and the construction of the railway infrastructure at the end of the 19th century. Following the aftermath of World War II, the city of Niš experienced an industrial bloom – redefining the urban landscape with numerous industrial giants scattered all across the city. After the heavy wave of deindustrialization at the end of the 20th century, many facilities from the socialist period were left abandoned, with troubling narratives about their cultural and historical values, legitimacy, and the right to exist within the urban network. This paper explores the values of socialist industrial heritage sites in a post-socialist city of Niš.

Keywords: industrial heritage, socialist period, reuse, heritage values

ВРЕДНОСТИ ИНДУСТРИЈСКОГ НАСЛЕЂА ИЗ ПЕРИОДА СОЦИЈАЛИЗМА У ПОСТ-СОЦИЈАЛИСТИЧКОМ КОНТЕКСТУ – СЛУЧАЈ НИША

Сажетак:

Ниш је постао центар индустријске производње након ослобођења од османске владавине и изградње железнице крајем 19. века. Након Другог светског рата, у периоду социјализма, Ниш је доживео индустријски процват који је редефинисао историјски урбани пејзаж, интегришући индустријске гиганте у градско ткиво. Након таласа деиндустријализације крајем 20. века, многи индустријски комплекси из периода социјализма су напуштени, окарактерисани проблематичним наративима у вези њихових културно-историјских вредности и легитимитета за опстанак у урбаној матрици. Овај рад истражује вредности индустријског наслеђа из периода социјализма у постсоцијалистичком контексту Ниша.

Кључне ријечи: индустријско наслеђе, социјалистички период, поновна употреба, вредности наслеђа

1. INTRODUCTION

The heritage of the industry encompasses both tangible and intangible remains of a centuries-long phenomenon of the production of goods. Originating since the earliest days of humanity [1], up to the historically transformative First Industrial Revolution in 18th-century Britain – which reshaped continental Europe and the United States [2], the industry has profoundly influenced societal norms and has emerged as a key element of cultural anthropology [3]. Over time, it evolved into a main pillar of the global economy, giving rise to a distinct architectural typology – industrial buildings, which include factories, warehouses, railways, infrastructure, mines, etc. [4]. Found in every corner of the world, these structures define urban landscapes and hold deep cultural meaning within the urban fabric, placing industrial heritage firmly within the broader category of cultural heritage – a symbol of human labor in the context of history of technology [5]. Industrial buildings testify to geo-political, ideological, social and innovative transitions. In Serbia, many industrial facilities are linked to the rise of national autonomy, abandoning the Ottoman feudal system in the early 19th century, gaining independence after centuries of occupation, and modernizing the infrastructure based on models used by developed European allies. Later on, in the aftermath of World War II (WWII), the rise of new geopolitical ideologies contributed to the formation of a socialist-oriented country called Yugoslavia with the Communist Party as its ruling body. The industry was the privilege of a civilized, communist society and the pillar of a planned economy. The strength of the industrial sector inspired people to migrate from rural to urban areas, form a nuclear family and fight for gender equality, labor and civic rights. However, the end of the 20th century witnessed an extensive turning point – a global process of deindustrialization, most visible in Europe. Spreading across Western Europe during the 1980s and in Eastern Europe in the 1990s [6], it left numerous production sites abandoned. Deprived of their original function, these facilities began to deteriorate, becoming shadows of once-thriving industrial hubs [7]. In former Yugoslavia, deindustrialization was interconnected with state dissolution, a painful transition to capitalism, war, crime, rise of grey economies, and large-scale looting [8]. These factors, combined with collective feelings of grief, frustration, and nostalgia, left deep scars in the society. Spaces once regarded as national symbols now stand as reminders of pollution, economic decline, layoffs, and suspicious privatizations. Consequently, the fate of many industrial facilities remains uncertain. Originally located on the urban periphery, many of these sites now occupy attractive central urban areas due to urban expansion, and are considered landmarks of the city. Yet, in Serbia, theory and practice diverge. Historic industrial sites and buildings are often ignored by urban planning and heritage protection institutions, especially those that lack architectural richness, resulting in chaotic and unprofessional reuse policies or demolition. Complex ownership status of these facilities transitioning from private to nationalized property [9] and once again private hands, only deepens the problem. As a result, these spaces are left in the everlasting status quo – and in great danger from erasure from the nation's collective memory.

This paper focuses on the socialist industrial heritage of the city of Niš in Southern Serbia – once a production hub renowned in former Yugoslavia. Standing as reminders of the city's prosperous industrial legacy, these facilities are often overlooked, partially used with no regard to their heritage values, or in a state of decay and threat of destruction. The purpose of this research is to determine the values of Niš's socialist industrial legacy, understand the threats they face and determine future research goals and potential means of preservation.

2. INDUSTRIAL HERITAGE – CONCEPT & VALUES

Industrial heritage represents the historical tangible and intangible traces of human labor within the broader domain of technology and engineering [5]. Its distinct architectural forms and values date back to the period of the First Industrial Revolution in 18th-century England [10]. Unlike other building typologies, such as residential, public, sacred, or defensive, industrial buildings as representatives of the built heritage category were not formally defined until the 1950s, when British academics developed the field of industrial archaeology [11]. Its international institutionalization came later, in the late 20th century, with the establishment of The International Committee for the Conservation of the Industrial Heritage (TICCIH). In 2003, TICCIH adopted the Nizhny Tagil Charter in Russia, which defines industrial heritage as “the remains of industrial culture with historical, technological, social, architectural, or scientific value” [4]. These remains include buildings and machinery, workshops, mills, factories, mines, refineries, warehouses, power plants, infrastructure, and even entire industrial landscapes [4]. The joint efforts of TICCIH, the International Council on Monuments and Sites (ICOMOS), and the United Nations Educational,

Scientific and Cultural Organization (UNESCO) have recognized, registered, and protected numerous industrial facilities all over the globe, placing around 50 sites on the UNESCO World Heritage List (WHL) [12].

Industrial heritage has multiple layers of value, not only architectural and historical, but also environmental, social, symbolic, and educational [13]. It embodies collective memory and stands as testimony to the social, technological, and spatial processes of a certain era [14]. Its preservation largely depends on how it is addressed by all of us, heritage and planning institutions, stakeholders, and citizens: whether it is seen as an obstacle to sustainable urban and architectural development, as an empty space for new construction, or as a potential resource for regeneration that honors the values of the past.



Figure 1. An example of a post-socialist industrial heritage landscape: Chimneys of the Heating plant New Belgrade, surrounded by Yugoslav socialist residential architecture (Belgrade, Serbia) [15].

The understanding and reaffirmation of defunct historic industrial buildings and sites is a complex matter. Reintegrating these sites and justifying their position within the urban matrix is a matter that orbits between several conflict zones, such as rigid conservation requirements, architectural interventions, urban segregation and gentrification, sustainable development requirements, urban planning perspectives, perception, etc. [16]. Heritage values have been greatly discussed throughout the history of architecture and heritage conservation. Art historian Alois Riegl, in his publication *The Modern Cult of Monuments*, issued in 1903, categorized heritage values into two main groups [17]: Commemorative Values (age value, historical value, and intentional commemorative value), and Values of Contemporaneity (art value, use value, and newness value).

Heritage values have also been inscribed in international charters, thus, the Australia ICOMOS Charter for Places of Cultural Significance (also known as The Burra Charter of 2013) [18] states that the most significant values are: aesthetic, historic, scientific, social, and spiritual. An important issue when regarding heritage buildings is their authenticity, which is briefly addressed in the Venice Charter of 1964 [19] and through numerous scholarly and academic works [20-22]. However, international doctrinal texts on the authenticity of the material fabric of monuments and sites did not capture the specific nature of much of their heritage, whose main characteristic was being constantly recreated through the continuity of cultural practices and traditions [23]. Thus, the Nara Document on Authenticity was drafted in Japan in 1994 [24]. The document states that the authentic values of heritage are based on: form and design, materials and substance, use and function, traditions and techniques, location and setting, spirit and feeling, and other internal and external factors. When specifying the problematic of industrial heritage, it is important to stress the Joint ICOMOS-TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes, commonly known as the Dublin Principles adopted in 2011 in Paris, France [25]. These principles point out that the most common values of industrial heritage are technological and scientific, social and cultural, architectural and aesthetic, historic and documentary, economic and symbolic.

Determining the values of industrial heritage is a multi-dimensional process that goes beyond the evaluation of architectural composition and the integrity of architectural elements, diving into broader sustainability problems, such as societal, economic, and ecological matters. Preserving, adapting, and reusing post-industrial facilities aims not only to protect material values, but also to preserve the cultural meaning of a place important for both past, present, and future generations [26].

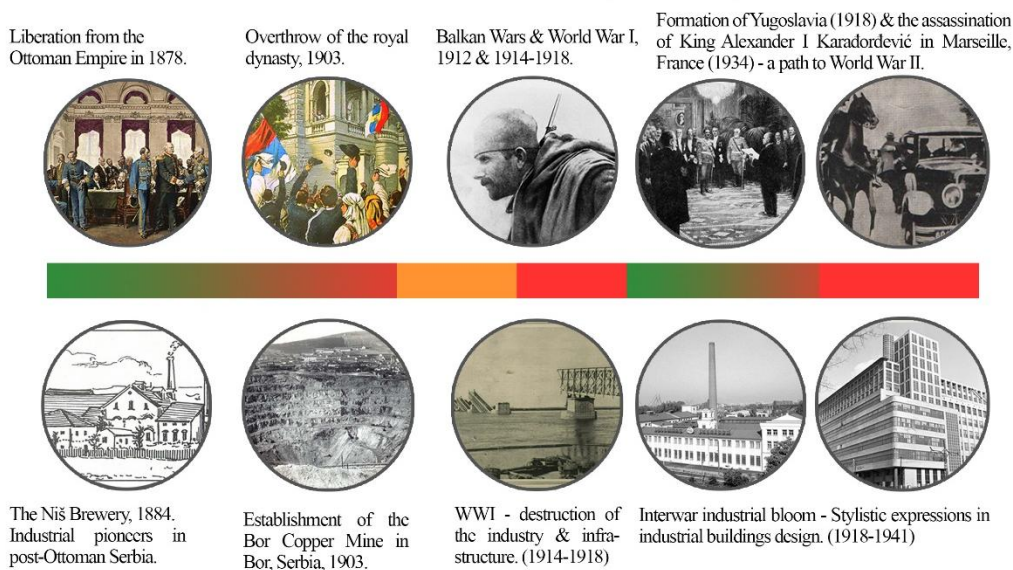
Thus, the combination of quantitative and qualitative evaluation instruments is key in determining the values of any type of industrial heritage [27].

3. INDUSTRIAL LEGACY OF SERBIA

3.1. FROM OTTOMAN LIBERATION UNTIL WORLD WAR II

Understanding the industrial development of a region requires tracing the complex historical events that have shaped it. Western European countries have intensely developed the industrial sector throughout the 18th, 19th, and 20th century. However, in Serbia – as well as in other Ottoman-occupied countries of the Balkans the geopolitical situation was very intense. The southern parts of the country were under the influence of the Ottoman Empire, and industrialization began somewhat later than in Western Europe, taking root in the first half of the 19th century, with the military sector leading the way. On the other hand, the northern territories were part of the Austro-Hungarian Empire and faced industrial development much earlier, similar to that of Western Europe. However, the phenomenon of intense industrial development all across the country reflects the broader aspirations of Serbian society to align with the progress of more developed European nations [28]. For the city of Niš, intensive industrial growth began in 1878, when it was reintegrated into Serbia after centuries of foreign rule [29]. The early 20th century witnessed the rise of agriculture-related industries, while the pre-World War I (WWI) years proved especially significant, as several urban plans established designated industrial zones on the city's periphery. Mechanical workshops, tobacco plants, and textile factories soon became defining features of the city. The southern parts of the country were also rapidly developed. The city of Leskovac, for example, earned the nickname “Serbian Manchester” due to the flourishing textile industry. Despite disruptions caused by the overthrow of the monarchy in 1903, the Balkan Wars of 1912, and WWI, industry in Niš continually revived, reflecting its central role in the European way of life.

Historical Timeline of the Modern Serbian State (1878-1945)



Industrial Development of the Modern Serbian State (1878-1945)

Figure 2. Historical and industrial development of the modern Serbian state from the liberation of Ottoman occupation until the end of WWII (software visualization by authors) [30], [31], [32], [33], [34], [35], [36], [37], [38], [39].

3.2. POST-WORLD WAR II

The post-WWII period brought profound changes across Eastern Europe. Serbia, now part of a socialist state called Yugoslavia (alongside modern-day countries of Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, and North Macedonia), embraced industrialization as a cornerstone of development. Guided by the Communist Party, Yugoslavia viewed industry as the fastest route to economic growth [40], promoting the collective ownership of the past to demonstrate moral superiority and to bind newly independent nations to socialist modernization [41]. The country

sought to move away from its predominantly agrarian base toward heavy industries, particularly mechanical and energy sectors [29]. The legacy of the socialist industrial boom is materialized in the construction of numerous newly founded industrial giants, as well as by the modernization and capacity expansion of pre-WWII facilities. However, a decades-long continuity of production and social well-being was cut short at the end of the 20th century. Deindustrialization swept through Western capitalist countries in the 1970s and reached Eastern socialist states by the late 20th century [6]. The deindustrialization process took on a particularly turbulent form in Yugoslavia. It collided with state dissolution, economic transition to market-oriented systems, hyperinflation, warfare, mass migrations, declining birth rates, and rising crime [29]. These upheavals devastated the industrial sector, leaving a large share of facilities abandoned [42]. Some facilities were further destroyed during the NATO bombing of Serbia and Montenegro in 1999 [43]. At the start of the 21st century, the newly independent state of Serbia entered a transition path similar to that of other former Yugoslav and Eastern Bloc states. Privatization and restructuring efforts were launched but often proved unsuccessful, resulting in widespread neglect. Today, the urban landscape bears the imprint of this history in the form of vacant, decaying factories – industrial relics that serve both as reminders of a prosperous era and as memorials to a troubled past. Abandoned factories now act as “temporal junctions” linking the socialist past, present urban life and imagined futures, generating nostalgia and *Stalker* exploration – lingering symbolic value of socialist industrial architecture [44]. Questions of whether post-socialist nations truly consider the socialist period as their own heritage, as attitudes towards the past are closely related to national identity and feelings of unique historical continuity, are very present [45]. Thus, the socialist legacy continues to shape contemporary heritage debates and adaptive reuse projects across former socialist spaces.

Historical Timeline of the Modern Serbian State (1945-2025)

Nazi occupation of Yugoslavia & the establishment of a socialist state (1941-1945)



Socialist Yugoslavia (1948-1991), economic prosperity.



Tito's death (1980), rise of nationalism in Yugoslavia. (1980-1991)



Breakup - Yugoslav Wars (1991-1999)



Civil unrest & transition towards democracy & capitalism (2000). Decline of democracy (2025)



Post-WWII industrial development. A planned economy and the rise of industrial giants. (1945-1980)



Steady economic growth in the 1980s



Warfare - industrial sites as targets of war (1991-1999)



Transition, deindustrialization, bankruptcy, neglect (2000-2025)



Isolated reuse initiatives. Majority of the sites under threat of destruction.

Industrial Development of the Modern Serbian State (1945-2025)

Figure 3. Historical and industrial development of the modern Serbian state from the post-WWII period until today (software visualization by authors) [46], [47], [48], [49], [50], [51], [52], [53], [54].

4. RESEARCH METHODOLOGY

The complexity of the research process requires a division into several methodological steps. The first step comprises the utilization of analytical and empirical techniques to collect theoretical findings from existing literature overview. This includes searching scientific databases regarding cultural and industrial heritage protection, values, and authenticity. Furthermore, the authors have conducted a historical research method which includes the analysis of historical sources such as old maps, texts, and drawings.

The second part of the research includes the analysis of selected case studies in the city of Niš. The criteria for the selected case studies are as follows:

- Buildings and sites were historically used for industrial production;

- Buildings and sites have lost their original function and are left abandoned or used for new functions;
- Buildings and sites have been built (or significantly expanded) during the post-war socialist period of Yugoslavia (1945-1992);
- Buildings and sites still exist within the urban matrix of Niš.

The points of analysis for the selected case studies are as follows:

- Historical development of the industrial site: period of construction, main production purpose;
- Attributes of the industrial building and site: land occupation area, number of buildings, architectural style, current physical condition, current use practice, heritage protection status.

The last phase of the research is the discussion and conclusion, applying a synthesis method to systematize the research findings. In the discussion chapter, the drafted theoretical principles are paired with information gathered from the case studies to conclude the values of socialist industrial heritage and to set the main future research directions.

5. CASE STUDIES

Although there are numerous active and defunct industrial buildings and sites scattered all across the city (Figure 4), the selected case studies in this research are industrial facilities that are regarded as industrial giants in the collective memory of the citizens, and were fully built during the socialist period of Yugoslavia (1945-1992) or have undergone significant capacity expansions during socialist times: the Electronic Industry Niš (EI), the Mechanical Industry Niš (MIN), and Žitopromet (Žitopek complex).



Figure 4. Map from the General Urban Plan of the City of Niš 2010-2025 [55]
Blue circles - industrial buildings and sites in the city of Niš, Serbia; Purple circles – case studies (Map editing and software visualization by authors).

5.1. THE ELECTRONIC INDUSTRY NIŠ (EI)

The construction of EI began in the aftermath of WWII, in 1948, with the construction of the Radio-Rendgen (RR) Institute, originally planned near Gabrovac but finally sited between the city of Niš and the municipality of Niška Banja [56]. The first development phase (1948-1951) produced radio and X-ray equipment, marking the start of mass post-war Yugoslav industrialization. The 1960s saw rapid expansions, new semiconductor and optoelectronic factories, a major extension of the main building and additions of specialized halls and warehouses [56]. After decentralization in 1973, the site entered a prolonged crisis in the 1980s, and the period between the 1990s and the 2000s faced transition difficulties such as privatization, hardship in competing with the global market due to UN sanctions imposed on Yugoslavia and bankruptcy in 2016 [8, 56]. The site is located in the suburbs of Niš, approximately 4.5 kilometers east of the city center, situated directly along the road axis connecting Niš to Sofia, Bulgaria. It spans a land area of 59.49 hectares and is classified as a large-scale production zone [57]. The site has a rectangular shape and lies on predominantly flat terrain, bordered by a hilly belt to the south and a slope to the north. The main

entrance is accessible via Car Konstantin Boulevard [8]. The Detailed Regulation Plan of the Electronic Industry Complex in Niš, adopted in 2014 and reviewed in 2024, lists 119 buildings within the site [58]. Due to the phased development of the site (1948-1980), there is no architectural unity [59], and structures vary from a morphological perspective (large-scale production halls to small-scale warehouses), but also in construction, materials, and stylistic features [60]. The site is not protected by law, however 5 out of 119 buildings are registered as cultural goods under previous protection – a temporary protection category defined by the Law on Cultural Goods [61]. If the competent experts fail to formally protect the building in a limited time period, it loses its cultural good status.



Figure 5. Semiconductor hall, a cultural good under previous protection within the EI site (photography by author).

Even though the site does not function as an electronic industry, it is still partially used for various other functions. Mainly light types of production (textile, furniture), storage, business, commerce, and education are present. In the recent timeline, some structures are occasionally used for cultural events. A significant portion of buildings is unused and in a state of decay.



Figure 6. Entrance to an abandoned heating plant within the EI site (photography by author).

5.2. THE MECHANICAL INDUSTRY NIŠ (MIN)

The MIN was an energy, mining, and railway production industry [62]. The first mechanical workshop dates back to the end of the 19th century, after the liberation from the Ottoman Empire and the construction of the first railway system. Significant capacity expansions came only after WWII, during socialist times and Yugoslav orientation towards large-scale heavy industries as pillars of a planned economy. In socialist times it was divided into two sectors – MIN TRANS and MIN RAD, both legally labeled as Organizations of Joint Labor in 1974 [62]. A decades-long prosperous production faced a downturn in the 1990s when both sectors were sold to stock companies, and later merged into a MIN Holding in 1998. The most noteworthy privatization process took place in 2007 when the site was widely sold to private investors and companies.

The MIN site is located near the city center, approximately a kilometer away, near the main railway station and close to the Nišava river. The site occupies an area of roughly 30 hectares and there are

currently about 100 buildings within the site. The site had a phased development, and the buildings vary in size, materialization, and construction. Small warehouses and administrative buildings stand in contrast with large-scale production halls, the biggest one being the MIN Locomotive production hall that occupies an area of 32,000 m². The site is rarely mentioned by planning or cultural heritage protection institutions. None of the buildings are registered as any category of cultural good. The site is currently being partially reused for various types of light production, business, commerce, sports, entertainment, and culture.

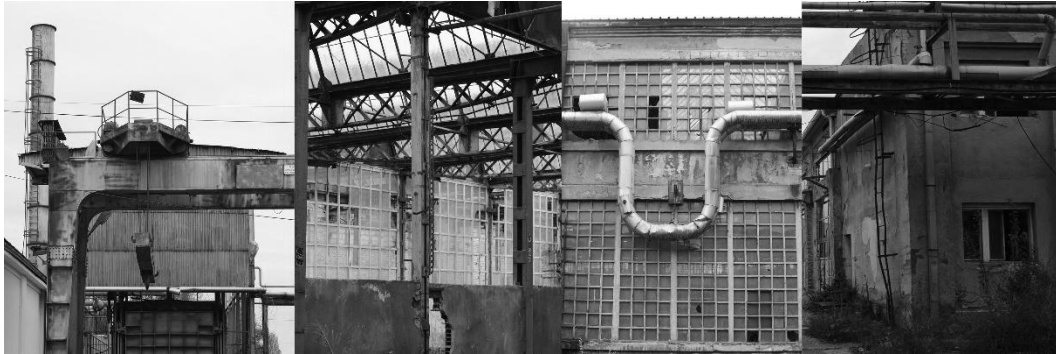


Figure 7. *The semantic values of the heavy industry embodied in the structures of the MIN site (photography by author).*

5.3. THE ŽITOPEK PRODUCTION COMPLEX

The baking industry Žitopek was founded in 1947, by nationalizing individual businesses and merging 14 baker families into a unique firm [29]. Later, the number reached a total of 32 baker families. Pre-war and inter-war warehouses existed within the site. However, due to the fact that Žitopek supplied the entire city with bread and baked goods, the production grew rapidly. In 1968 a large-scale factory was built [63], and it was one of the biggest factories in Yugoslavia and one of the most modern in Europe [29]. The complex faced a downturn and production losses in 1992 with economic turmoil in former Yugoslavia. However, due to the nature of production related to the food industry, it never fully closed. Nevertheless, parts of the site are abandoned due to diversification of the market. It occupies an area of around 6.5 hectares divided into two entities – the Žitopek production facilities and the Žitopromet storage facilities with large silos for the storage of flour and cereal. It is barely mentioned in the institutional framework, with a General Regulation Plan stressing the importance of brownfield regeneration and planning a business and production zone. It is not registered as a cultural good, with an example of the old Žitopek administration building that is registered as a temporary cultural good under previous protection [64]. It is still partially used for production and is sealed off to the public.



Figure 8. *From right to left: The old Žitopek administrative building (a cultural good under previous protection), Square silo, and the 20 Žitopromet cylinder silos (photography by author).*



Figure 9. *The cylinder silos are a significant element of the industrial landscape of the western part of Niš (photography by author).*

6. DISCUSSION

Even though the term socialist industrial heritage remains controversial and is a subject of debate, its use in the context of Niš can be justified through both historical development and collective perception. With the exception of the EI site (and the Aluminum Production Factory (NISAL), which still operates as an active industrial facility – therefore outside the scope of this research), all other industrial sites from the socialist period in Niš were developed on the foundations of pre-war industries established between 1878 and 1941. What primarily distinguishes these sites as socialist is not their historical origin, but their transformation after WWII, when they underwent significant spatial expansion, modernization, and mass production growth, becoming symbols of socialist industrialization and progress within the local community.

From an architectural and aesthetic standpoint, socialist industrial buildings in Niš are strongly influenced by European 20th century modernism, characterized by functional clarity and an emphasis on utility. As a result of their predominantly utilitarian nature, their architectural and aesthetic qualities tend to be more appreciated by architects, planners, and visual artists than by the general public. Nevertheless, the MIN site represents a notable exception, as its preserved installations and machinery are integrated into the site and building façades, creating a distinctive industrial atmosphere and visual identity. In contrast, the aesthetic values of the EI and Žitopek are expressed more subtly, through individual architectural details rather than through the overall spatial composition of the sites.

In terms of social and cultural values, the EI and MIN sites clearly stand out as key socialist landmarks in the urban and symbolic landscape of Niš. A 1984 article published in *Narodne novine* (a local newspaper established in 1944), featured an image of the city's northern entrance marked by a banner reading "Welcome to the City of Electronics" [65], illustrating the extent to which the EI shaped the city's identity. Additionally, archival photographs documenting the everyday lives of industrial workers, published in various media outlets [66], emphasize the social significance of industrial labor and the role these sites played in redefining the cultural, social and historical image of Niš, a city traditionally associated with its imperial and medieval historical legacy.

When considering historical value, the selected case studies display differing yet equally significant development paths. The EI site was designed and constructed entirely during the socialist period, between 1948 and 1980, representing a newly planned socialist industrial system. In contrast, both the MIN site and the Žitopek complex evolved from pre-war industrial foundations. MIN originated from mechanical production established in the nineteenth century alongside the development of the railway industry, while Žitopek grew out of early twentieth-century, family-owned enterprises. Consequently, their historical significance is evaluated through their multi-layered character, reflecting continuity, adaptation, and transformation across different political and economic systems.

The evaluation of location and setting is based on the contemporary spatial structure of the city and the proximity of the sites to the historic urban core. MIN and Žitopek are situated within the historical industrial zone in the western part of Niš, approximately one kilometer from the main city

square and major public institutions. In contrast, the EI site is located in the post-war industrial zone in the eastern part of the city, developed after WWII and positioned at a greater distance from the historic center.

The issue of use and function remains one of the most challenging aspects in assessing Niš's post-industrial sites, as current practice reveals a lack of a coherent and comprehensive visions for their adaptive reuse. Institutional engagement has, however, recognized the potential of the EI site, which has been officially identified as a future business and production zone. Today, a range of new functions, including business, commerce, education, culture, sports, and contemporary forms of production, operate within the existing industrial buildings, contributing to the site's vitality and ongoing relevance. On the other hand, the MIN site is only partially reused in an uncoordinated manner, without a clear institutional strategy for its long-term development. Similarly, the Žitopek site remains partially active, while the Žitopromet facility is completely out of use, physically deteriorating and inaccessible to the public.

Finally, the evaluation of the spirit and feeling of the analyzed sites represents an abstract and deeply subjective dimension, requiring an interdisciplinary approach that extends beyond architectural and urban analysis into the fields of sociology, psychology, and cultural identity studies. Given the scope and methodological limitations of this research, this aspect has not been addressed in detail and remains an important direction for future research initiatives.

Table 1. Evaluation of pre-defined theoretical values of selected case studies of socialist industrial heritage sites in Niš, table by authors.

Values	EI Niš	MIN Niš	Žitopek and Žitopromet
Architectural & aesthetic	moderate (2)	strong (3)	moderate (2)
Social & cultural	strong (3)	moderate (2)	weak (1)
Historical	weak (1)	moderate (2)	moderate (2)
Location & setting	weak (1)	strong (3)	strong (3)
Use & function	strong (3)	moderate (2)	weak (1)
Spirit & feeling	-	-	-
Overall points	10	12	9
*Points are assigned based on a scale from 1 to 3. 1 – weak; 2 – moderate; 3 – strong.			

The highest overall score is attributed to the MIN site, as no categories with weak values were identified. Architectural and aesthetic qualities, together with location and setting, emerge as its most prominent strengths, while the remaining criteria are assessed as moderate, indicating a clear potential for more detailed future evaluation, particularly with regard to historical, cultural, and spiritual values. The second-ranked site is EI, which stands out primarily due to its pronounced social and cultural significance, having long functioned as an economic and social engine of the city. Use and function are also strong aspects, as most of the site is actively being reused for various purposes. Nevertheless, its relatively short historical development and peripheral urban position represent limiting factors in the overall assessment. The lowest overall score is assigned to the Žitopek complex, despite its central urban location, which remains its most significant asset.

7. CONCLUSION

By correlating the case studies of socialist industrial heritage sites in Niš with the values defined by relevant scholars and international heritage institutions, it becomes evident that identifying and articulating the values of socialist industrial architecture represents a significant methodological challenge. Existing theoretical frameworks tend to define heritage values in a largely universal manner, which creates a paradox when applied equally to buildings of exceptional historical, architectural, aesthetic, and locational significance, and to relatively recent industrial structures primarily characterized by functionality and architectural simplicity.

Nevertheless, the profound role that these industrial sites played in shaping urban life and everyday habits during the socialist period in Niš cannot be overlooked. The identification of these facilities goes beyond the simple aesthetic evaluation, moving from the shallow dichotomy of “pretty” and “ugly”, but rather orbiting between ideological re-interpretation of history, legitimacy of state-led

programs, and an openness to modernist experimentation that later became a vehicle for international cultural outreach. Employment within these facilities became a key component of personal and collective identity for a considerable period, fostering a sense of pride, social belonging, and perceived contribution to the construction of a socialist society. The subsequent period of political, economic, and social upheaval significantly altered these long-established narratives. The marginalization of socialist industrial buildings results from a complex interplay of several factors, deeply rooted in post-socialist and post-industrial transitions marked by sudden deindustrialization, unemployment, and collective frustration. In this historical context, it is essential to resist the selective erasure or “whitewashing” of the past through the construction of simplified identities based exclusively on glorified or victorious historical episodes. Such sites serve as reminders that urban identity is not shaped solely by triumphs, but also by scars, which constitute an integral and irreplaceable part of a city’s historical uniqueness.

Preserving and valuing “difficult” heritage – one that reflects both societal achievements and failures plays a crucial role in safeguarding the authenticity of cultural identity. The contribution of this research extends beyond the local context of Niš and is applicable to the broader post-socialist and post-industrial context of the former Yugoslavia. It represents an initial step toward the establishment of a systematized database of industrial heritage from the socialist period, while simultaneously contributing to the development of instruments for the integration and critical alignment of architectural, cultural, historical, and societal interpretations within the decision-making process.

ACKNOWLEDGMENT

This research was supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia under the Agreement on the Implementation and Financing of Scientific Research Work of the NIO in 2026 - Registration number: 451-03-33/2026-03/200095 dated 05/02/2026.

LITERATURE

- [1] O. Olsson, “The rise of Neolithic agriculture,” *Economics*, vol. 57, pp. 1–26, 2001.
- [2] C. Chu and R. Xu, “From Neolithic Revolution to industrialization,” *Macroeconomic Dynamics*, pp. 1–19, 2023, doi: 10.1017/S1365100523000214.
- [3] C. S. Holzberg and M. J. Giovannini, “Anthropology and industry: Reappraisal and new directions,” *Annual Review of Anthropology*, vol. 10, no. 1, pp. 317–360, 1981, doi: 10.1146/annurev.an.10.100181.001533.
- [4] TICCIIH, *The Nizhny Tagil Charter for the Industrial Heritage*, 2003. [Online]. Available: <https://ticcih.org/wp-content/uploads/2013/04/NTagilCharter.pdf>
- [5] R. Kulenović, *Industrijsko nasleđe Beograda*, 1st ed. Belgrade, Serbia: Museum of Science and Technology, 2010.
- [6] A. Stanojević and A. Keković, “Functional and aesthetic transformation of industrial into housing spaces,” *Facta Universitatis – Series: Architecture and Civil Engineering*, vol. 17, no. 4, pp. 401–416, 2019, doi: 10.2298/FUACE190722024S.
- [7] A. Draganić and M. Silađi, *Shadows and Silhouettes of the Industrial Past of Vojvodina*, 1st ed. Novi Sad, Serbia / Budapest, Hungary: Faculty of Technical Sciences, University of Novi Sad & ICOMOS Hungary, 2018.
- [8] U. Antić, Lj. Jevremović, and A. Milojković, “Public spaces in post-industrial sites: Navigating between visions of heritage protection, urban morphology, spatial planning and spontaneous reuse—The case of the Electronic Industry site in Niš, Serbia,” in *Proc. Int. Conf. on Urban Planning (ICUP 2025)*, Niš, Serbia, 2025, pp. 53–60.
- [9] M. Plićanić, “Between vision and possibility: Industrial architecture from the socialist period in Sarajevo,” *AGG+*, vol. 12, no. 2, pp. 132–151, 2024, doi: 10.61892/agg202402132p.
- [10] M. Nikolić, “Doprinos istraživanju, zaštiti i revitalizaciji industrijskog nasleđa Beograda,” *Zbornik radova Građevinskog fakulteta*, vol. 34, no. 34, pp. 101–117, 2018, doi: 10.14415/zbornikgfs34.08.
- [11] K. Hudson, *Industrial Archaeology: An Introduction*, 1st ed. London, U.K.: Routledge, 1963.
- [12] UNESCO, “UNESCO,” 2025. [Online]. Available: <https://www.unesco.org/en>

- [13] C. J. Pardo Abad, "Valuation of industrial heritage in terms of sustainability: Some cases of tourist reference in Spain," *Sustainability*, vol. 12, no. 21, Art. no. 9216, 2020, doi: 10.3390/su12219216.
- [14] S. Labadi, "Industrial archaeology as historical archaeology and cultural anthropology," *Papers from the Institute of Archaeology*, vol. 12, Art. no. 77, 2001, doi: 10.5334/pia.162.
- [15] I. M., "Toplane u Srbiji koriguju cene: Grejanje poskupljuje u osam gradova," *Vreme*, Sep. 26, 2024. Accessed: Mar. 26, 2026. [Online]. Available: <https://vreme.com/en/razno/toplane-u-srbiji-koriguju-cene-grejanje-poskupljuje-u-osam-gradova/>
- [16] H. Oevermann and H. A. Mieg, "Urban development planning and world cultural heritage: Two perspectives of planning practice dealing with industrial heritage," *Planning Practice & Research*, pp. 1–12, 2021, doi: 10.1080/02697459.2021.1874639.
- [17] C. Ahmer, "Riegl's 'modern cult of monuments' as a theory underpinning practical conservation and restoration work," *Journal of Architectural Conservation*, vol. 26, no. 2, pp. 1–16, 2020, doi: 10.1080/13556207.2020.1738727.
- [18] Australia ICOMOS, *The Burra Charter*, 2013. [Online]. Available: http://portal.iphan.gov.br/uploads/ckfinder/arquivos/The-Burra-Charter-2013-Adopted-31_10_2013.pdf
- [19] ICOMOS, *International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter)*, 1965. [Online]. Available: https://www.icomos.org/images/DOCUMENTS/Charters/venice_e.pdf
- [20] M. Jagiełło, "Do we need a new Florence Charter? The importance of authenticity for the maintenance of historic gardens and other historic greenery layouts," *Sustainability*, vol. 13, no. 9, Art. no. 4900, 2021, doi: 10.3390/su13094900.
- [21] J. Jokilehto, "Questions of authenticity," in *Conversaciones... con Herb Stovel*, vol. 8, pp. 55–72, 2019.
- [22] S. Fadaei Nezhad, P. Eshrati, and D. Eshrati, "A definition of authenticity concept in conservation of cultural landscapes," *International Journal of Architectural Research: ArchNet-IJAR*, vol. 9, no. 1, Art. no. 93, 2015, doi: 10.26687/archnet-ijar.v9i1.473.
- [23] G. Boccardi, "Authenticity in the heritage context: A reflection beyond the Nara Document," *The Historic Environment: Policy & Practice*, vol. 10, no. 1, pp. 4–18, 2018, doi: 10.1080/17567505.2018.1531647.
- [24] ICOMOS, *The Nara Document on Authenticity*, 1994. [Online]. Available: https://www.iccom.org/sites/default/files/publications/2020-05/convern8_06_thenaradocu_ing.pdf
- [25] TICCIH, "Dublin Principles," [Online]. Available: <https://ticcih.org/about/about-ticcih/dublin-principles/>
- [26] J. Sowińska-Heim, "Adaptive reuse of architectural heritage and its role in the post-disaster reconstruction of urban identity: Post-communist Łódź," *Sustainability*, vol. 12, no. 19, Art. no. 8054, 2020, doi: 10.3390/su12198054.
- [27] S. H. Han and H. Zhang, "Progress and prospects in industrial heritage reconstruction and reuse research during the past five years: Review and outlook," *Land*, vol. 11, no. 12, Art. no. 2119, 2022, doi: 10.3390/land11122119.
- [28] Dj. Milovanović *et al.*, *Industrial Heritage – Preservation and Rehabilitation*, 1st ed. Kragujevac, Serbia: Cultural Heritage Preservation Institute Kragujevac, 2013.
- [29] Lj. Jevremović, "Nova namena kao determinanta u tretmanu industrijskih braunfilda – modeli obnove i klasifikacija," Ph.D. dissertation, Faculty of Civil Engineering and Architecture, University of Niš, Niš, Serbia, 2022.
- [30] R. Singh, "Congress of Berlin (1878)," *Owlcation*, Nov. 16, 2023. [Online]. Available: <https://owlcation.com/humanities/congress-of-berlin-1878>. [Accessed: Mar. 21, 2026].
- [31] Ž. Matić, "Reakcija javnosti na Majski prevrat 1903. godine," *Istorijska čitanka*, Nov. 25, 2015. [Online]. Available: <https://vistorija.com/2015/11/04/1903/>. [Accessed: Mar. 21, 2026].
- [32] A. Životić, "Srpski vojnik u Velikom ratu," *Ministarstvo odbrane Republike Srbije*, [Online]. Available: <https://www.mod.gov.rs/eng/17053/srpski-vojnik-u-velikom-ratu17053>. [Accessed: Mar. 21, 2026].

- [33] S. Zarić, “Stvaranje Kraljevine SHS,” *Radio-televizija Srbije (RTS)*, Dec. 1, 2018. [Online]. Available: <https://www.rts.rs/lat/vesti/drustvo/3339808/stvaranje-kraljevine-shs.html>. [Accessed: Mar. 21, 2026].
- [34] Ubistvo kralja Aleksandra (dokumentarni film),” *PCNEN*, Jan. 3, 2022. [Online]. Available: <https://www.pcnen.com/porta/2022/01/03/ubistvo-kralja-aleksandra-dokumentarni-film/>. [Accessed: Mar. 21, 2026].
- [35] “Godina 1887.,” *Niška pivara*, [Online]. Available: <https://niskapivara.com/godina-1887/>. [Accessed: Mar. 21, 2026].
- [36] R. Jakovljević, “Industrijski pejzaži Bora,” *Razotkrivamo staze zavičaja*, [Online]. Available: <https://rsz.rs/home-2/razotkrivamo-staze-zavicaja/staze/industrijski-pejzazi-bora/>. [Accessed: Mar. 21, 2026].
- [37] G. Antić, “Ratna dejstva oko Beograda u Prvom svetskom ratu,” *Princip.info*, Mar. 1, 2016. [Online]. Available: <https://princip.info/2016/03/01/ratna-dejstva-ok-beograda-u-prvom-svetskom-ratu/>. [Accessed: Mar. 21, 2026].
- [38] G. Vesić, “Najmodernija fabrika Beograda sa ambulantom i restoranom za radnike,” *Kaldrma*, Jul. 25, 2025. [Online]. Available: <https://kaldrma.rs/najmodernija-fabrika-beograda-sa-ambulantom-i-restoranom-za-radnike/>. [Accessed: Mar. 21, 2026].
- [39] “Život posle smrti – BIGZ,” *Kaldrma*, Mar. 1, 2021. [Online]. Available: <https://kaldrma.rs/zivot-posle-smrti-bigz/>. [Accessed: Mar. 21, 2026].
- [40] J. Rafailović, “Two centuries of industry in Serbia,” in *On Factories and Workers*, S. Šibalić and A. Momčilović-Jovanović, Eds. Belgrade, Serbia: Museum of Yugoslavia & Museum of Science and Technology, 2022, pp. 34–45.
- [41] N. Bekus and K. Cowcher, “Socialism, heritage and internationalism after 1945,” *International Journal of Heritage Studies*, vol. 26, no. 12, pp. 1123–1131, 2020, doi: 10.1080/13527258.2020.1852299.
- [42] M. Hadžić and S. Zeković, “Rethinking deindustrialization and the reindustrialization policy in Serbia,” *Spatium*, no. 41, pp. 14–22, 2019, doi: 10.2298/SPAT1941014H.
- [43] A. Keković and Z. Čemerikić, *Moderna Niša 1920–1941*, 1st ed. Niš, Serbia: Society of Architects of Niš, 2006.
- [44] E. Kochetkova and A. Petrova, “Abandoned, but not forgotten heritage: Former industrial enterprises in cultural and urban Russian landscapes,” *Heritage & Society*, pp. 1–22, 2022, doi: 10.1080/2159032X.2022.2126224.
- [45] A. Rihter, “Heritage of socialism with art and institutions in Yugoslavia,” in *Proc. 2nd Int. Conf. Heritage of Socialism: Architecture, Urbanism and Art*, Belgrade, Serbia, 2013, pp. 37–54.
- [46] D. Niebyl, “16 Powerful Depictions of Women in Yugoslav Monumental Art,” *Spomenik Database*, May 12, 2020, updated Mar. 5, 2021. [Online]. Available: <https://www.spomenikdatabase.org/post/15-powerful-depictions-of-women-in-yugoslav-monumental-art/>. [Accessed: Mar. 21, 2026].
- [47] “Reči i slike: Josip Broz Tito (1892–1980),” *Palanacke.com blog*, Mar. 1, 2016. [Online]. Available: <https://blog.palanacke.com/ reci-i-slike/reci-i-slike-josip-broz-tito-1892-1980/>. [Accessed: Mar. 21, 2026].
- [48] “Desetogodišnjica smrti Slobodana Miloševića,” *Radio-televizija Srbije (RTS)*, Mar. 11, 2016. [Online]. Available: <https://www.rts.rs/lat/vesti/drustvo/2240751/desetogodisnjica-smrti-slobodana-milosevica.html>. [Accessed: Mar. 21, 2026].
- [49] “Serbia marks anniversary of NATO bombing,” *B92*, Mar. 24, 2016. [Online]. Available: https://www.b92.net/o/eng/news/society?yyyy=2016&mm=03&dd=24&nav_id=97466. [Accessed: Mar. 21, 2026].
- [50] “Četvrt veka od petoaktobarskih demonstracija 2000. godine,” *Tanjug*, Oct. 5, 2025. [Online]. Available: <https://www.tanjug.rs/srbija/politika/197110/cetvrt-veka-od-petooktobarskih-demonstracija-2000-godine/vest>. [Accessed: Mar. 21, 2026].
- [51] A. Stankov, “Sećanje na ‘EI Niš’ – fotografije i bivši radnici za nezaborav industrijskog giganta [foto],” *Južne vesti*, Jan. 3, 2022. [Online]. Available: <https://www.juznevesti.com/drustvo/secanje-na-ei-nis-fotografije-i-bivsi-radnici-za-nezaborav-industrijskog-giganta-foto/>. [Accessed: Mar. 21, 2026].
- [52] G. Simonović Veljković, “Srbija i ekonomija: ‘Prvi maj’ Piro, bajka sa nesrećnim krajem,” *BBC News na srpskom*, Feb. 14, 2023. [Online]. Available:

- <https://www.juznevesti.com/bbc-news-na-srpskom/srbija-i-ekonomija-prvi-maj-pirot-bajka-sa-nesrecnim-krajem/>. [Accessed: Mar. 21, 2026].
- [53] V. Krkobabić, “Poluvekovni rafinerijski mozaik,” *Nafna industrija Srbije (NIS)*, Dec. 20, 2018. [Online]. Available: <https://www.nis.rs/rs/blog/poluvekovni-rafinerijski-mozaik/>. [Accessed: Mar. 21, 2026].
- [54] U. Zeljković, “Svilara u Novom Sadu: Od napuštene fabrike do kulturne stanice,” *Gradnja.rs*, Apr. 4, 2025. [Online]. Available: <https://www.gradnja.rs/svilara-novi-sad-napustena-fabrika-kulturna-stanica/>. [Accessed: Mar. 21, 2026].
- [55] *Generalni urbanistički plan Niša 2010–2025*, Grad Niš, Javno preduzeće Zavod za urbanizam Niš, Niš, Serbia, 2011.
- [56] A. Dukić, “Electronic Industry Niš: Architecture and urbanism,” in *Proc. 9th Int. Conf. on Industrial Heritage PRO TORPEDO Rijeka*, Rijeka, Croatia, 2025, pp. 149–167.
- [57] V. Damjanović, *Industrijski kompleksi i zgrade*. Belgrade, Serbia: Građevinska knjiga.
- [58] *Detailed Regulation Plan of the Electronic Industry Complex in Niš*. Niš, Serbia: Official Gazette of the City of Niš, 2014.
- [59] A. Milojković *et al.*, “Industrial brownfields as modernist legacy in a post-socialist city—A qualitative analysis,” *Facta Universitatis – Series: Architecture and Civil Engineering*, vol. 15, no. 3, pp. 477–487, 2017, doi: 10.2298/FUACE170508037M.
- [60] A. Stanojević *et al.*, “Identifying priority indicators for reuse of industrial buildings using AHP method: Case study of the Electronic Industry in Niš, Serbia,” in *Proc. 6th Int. Conf. Places and Technologies*, Pécs, Hungary, 2019.
- [61] Republic of Serbia, *Law on Cultural Goods*, “Official Gazette of RS,” nos. 71/94, 52/2011, 99/2011, 6/2020, 35/2021, 129/2021, 76/2023. [Online]. Available: https://www.paragraf.rs/propisi/zakon_o_kulturnim_dobrima.html
- [62] U. Antić and Lj. Jevremović, “Effects of post-socialist industrial brownfields transformation on the revival of historic urban network: Case study in Niš, Serbia,” in *Proc. DOCONF23 – Facing Post-Socialist Urban Heritage*, Budapest, Hungary, 2023, pp. 42–53.
- [63] Žitopek Niš, “Istorijat,” 2025. Accessed: Dec. 15, 2025. [Online]. Available: <https://www.zitopek.rs/istorijat.html>
- [64] *Fifth Changes and Appendices of the General Regulation Plan of the Municipality of Palihula – Phase One*. Niš, Serbia: Institute for Urbanism Niš, 2019.
- [65] *Narodne novine*, Sept. 5, 1984.
- [66] “Sećanje na ‘EI Niš’ – fotografije i bivši radnici za nezaborav industrijskog giganta,” *Južne vesti*, Jan. 3, 2022. Accessed: Dec. 29, 2025. [Online]. Available: <https://www.juznevesti.com/drustvo/secanje-na-ei-nis-fotografije-i-bivsi-radnici-za-nezaborav-industrijskog-giganta-foto/>