

ASSESSMENT OF URBAN-ARCHITECTURAL COHERENCE IN HISTORIC URBAN FABRIC: A CASE STUDY OF ALEJA NAJSWIETSZEJ MARYI PANNY IN CZESTOCHOWA

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Abstract

In most urban centres, a distinctive historic area can be identified, often located along the main representative avenue, which, due to its unique character, serves as the city's calling card. In Paris, this includes the Champs-Élysées with the Arc de Triomphe; in Barcelona, Passeig de Gràcia with Antoni Gaudí's Casa Batlló and Casa Milà; in Budapest, Andrassy Avenue with its historic villas and palaces from the late 19th century; and in Berlin, Unter den Linden with the Brandenburg Gate. The area is located along Aleja Najświętszej Maryi Panny in Czestochowa and includes residential, commercial, and religious buildings, the most notable of which is the Jasna Góra Monastery. Many of these buildings are historic. This study analyzes how the urban layout of this area of the city has changed over the years. The impact of new developments over the last 80 years on the urban-architectural coherence of this part of the city was assessed. The factors that have shaped the current form of Aleja Najświętszej Maryi Panny were also identified.

Keywords: Historic Urban Buildings, Historical Buildings; Czestochowa; Expansion of Cities.

Introduction

The first document in which the name Czestochowa appears is a document by Bishop Iwon Odrowaz from 1220, confirming the tithe that the village of Czestochowa was to pay to the monastery of Canons Regular in Mstow (located near the present-day city of Czestochowa) [1]. It is assumed that this village was located near the present-day hill on which the Jasna Góra Monastery now stands, and from the second half of the 14th century it was referred to as Old Czestochowa, and from the 15th century it was called Czestochowka [2]. In 1382, Prince Władysław Opolczyk founded a monastery located here, brought Pauline monks from Hungary, and in 1384 placed a painting of the Blessed Virgin Mary with the Child in her arms in the chapel of the monastery church [3].

Independently of the settlement on Jasna Góra Hill, a few kilometers to the east, a settlement developed on the Warta River, providing a river crossing for the emerging trade routes resulting from the region's economic development. This settlement gradually expanded, and by the end of the 14th century, it was granted city rights under Magdeburg Law and called New Czestochowa. The names of these two towns changed in the 17th century, and from then on, the city of Czestochowa was called Old Czestochowa, and Czestochowka (the settlement near Jasna Góra) New Czestochowa. In the 18th century, Czestochowka was granted city rights and the official name of New Czestochowa [1].

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Both cities developed in parallel until the beginning of the 19th century, when work began on connecting them. Today's Aleja Najświętszej Maryi Panny (Aleja N.M.P.) was marked out, connecting both urban organisms. On August 9, 1826, the merger of both cities into one common center was officially approved, which from then on was called Czeszochowa, with an estimated population of about 5,000 people [4]. The designated avenue was divided by three squares: Nowy Rynek (now Daszyński Square), Rynek Jakuba (now Bieganski Square), and Rynek Jasna Góra (now the area in front of the Jasna Góra Monastery). Based on these squares, an informal division of Aleja Najświętszej Maryi Panny (Avenue of the Blessed Virgin Mary) was adopted into I Aleja (I Avenue) from Daszyński Square to the viaduct over the railway tracks, II Aleja (II Avenue) from the viaduct to Bieganski Square, and III Aleja (III Avenue) from Bieganski Square to the parks near Jasna Góra—3 May Park (Fig. 1).



Fig. 1. Layout of Aleja Najświętszej Maryi Panny divided into I, II, and III Aleja.
Source: Author's own elaboration based on © OpenStreetMap contributors [5]

The demarcation of the Aleja N.M.P. venue also involved the demarcation of plots adjacent to the newly created street, which were successively sold and developed, creating a new urban layout for the city. Construction of the Town Hall was completed in 1835, and the first tenement houses were erected around 1840, beginning with the southern frontage of I Aleja [4]. The last building was erected in 2018.

The development of Aleja N.M.P. underwent numerous changes related to the reconstruction or modernization of existing buildings, the demolition of some of them, the construction of new ones, or the development of the few remaining vacant plots. Some of these changes were caused by warfare (two tenement houses on II Aleja were destroyed during World War II [6]), some by changes in owners and new ideas for the use of the buildings, and some by meeting the growing housing needs of the dynamically developing city – in 1946, there were 2.1 people per room [7]. In addition to changes in development, work was also undertaken to revitalize public spaces within Aleja N.M.P., including Biegański Square, the Old Market Square, and the areas around St. Sigismund's Church, which closed the avenues on the eastern side [8].

A key issue related to the modernization of existing historic buildings is preserving their historic character, especially if this involves changing their current use [9]. Construction work carried out in such buildings is associated with numerous difficulties and problems related to energy efficiency [10] and financial and technical barriers [11]. Particular caution should be exercised during demolition work, which in extreme cases may result in the uncontrolled collapse of part of the building [12]. These activities enable the preservation of the historic character of buildings, which is not only an element of material heritage but also a significant factor in shaping the cultural identity of the city.

This paper attempts to assess the urban and architectural coherence of the historical development of Aleja N.M.P in the context of the changes made in the period from the end of World War II to the present.

Materials and methods

To assess the urban and architectural coherence of the Aleja N.M.P. development, we first analyzed source materials, which determined the historical development of this part of the city. Next, a photographic inventory of all buildings was conducted to provide a basis for subsequent analysis. A review of contemporary research on the quality of urban spaces and the protection of architectural heritage was conducted, which served as the basis for developing assessment criteria. A comparative analysis was conducted, aimed at comprehensively assessing the coherence of the development, both formally and functionally. The analysis is based on a comparison of historic buildings retaining their original architectural form (under conservation protection) with new or significantly transformed structures in order to determine the degree of their urban, architectural, and historical compatibility.

Urban and architectural coherence is understood as the degree of harmony and integration of building elements and their spatial relationships within the analyzed urban layout. The assessment encompasses both the formal characteristics of buildings and their connections with the urban context, including spatial composition, building size and proportions, façade layout, materials and colors, relationships between historical and contemporary buildings, and the use of space.

The following evaluation criteria were adopted:

1) Urban composition (UC) – is based on the analysis of the structure of urban space, taking into account the importance of development continuity and the readability of the urban layout [13], [14]. Analyzed parameters: view axis, development continuity, building line;

2) Building scale (BS) – takes into account the adjustment of new facilities to the existing spatial proportions, which is an important element of integrating contemporary and historical architecture [15], [16]. Analyzed parameter: building height and building proportions in relation to the neighboring buildings;

3) Facade layout (FL) – refers to the visual perception of space, where the repetition and arrangement of elements influence the assessment of its quality [17], [18]. Analyzed parameters: layout and shape of windows, divisions;

4) Materials and colors (M&C) – were assessed in terms of their compliance with the historical context, which is one of the main challenges of contemporary interventions in the historic urban fabric [17], [19]. Analyzed parameters: materials used, colors;

5) Architectural convergence (AC) – assessment of the relationship between new and historical buildings in the context of adaptation and protection of architectural heritage [15], [18]. Analyzed parameters: degree of adaptation of the building to the surroundings, preservation of architectural details;

6) Function and manner of use (F&MU) – the assessment of the functions and manner of use of buildings is based on the assumption that the quality of public spaces results largely from their activity and the way they are used by people [15], [20]. Analyzed parameters: compatibility of functions, ground-floor activity;

7) Disturbing elements (DE) – assessed in the context of their impact on the perception of space, where an excess of visual stimuli leads to a decrease in its quality [21], [22]. Analyzed parameters: signs, advertisements, other disturbing elements;

For each criterion, a rating scale of 1 to 5 was adopted, with 1 indicating no compliance and 5 indicating full compliance with the original historic development. The final rating was the arithmetic mean of all ratings.

Results and discussion

Due to the specific urban layout, the degree of interference with the original historical structure, and the manner of use, the analysis was conducted separately for I, II, and III Aleja. The analysis included new developments (built after 1945) and older buildings whose

modernization significantly altered their architectural appearance. Buildings were numbered according to their ordinal (address) numbers.

I Aleja

There are a total of 15 buildings on I Aleja, of which two were analyzed: Nos. 12 and 15. The first building was originally occupied by the Wolberg tenement house, built in the first half of the 19th century. It was a two-story building with a steep roof. In 1992, due to its poor technical condition, it was demolished and replaced by a new building (three stories and an attic) serving as a retail space. In the place where the second building stands, there was a cocktail bar built in 1960. This structure had the form of a pavilion and differed from the historic buildings on the frontage. After its demolition in the early 21st century, a new building with a contemporary design was constructed, exemplifying the next stage of transformation of this part of Aleja N.M.P. The results of the assessment of the urban and architectural coherence of these buildings with the historic buildings are presented in Table 1.

Table 1. Assessment of the urban and architectural coherence of the analyzed buildings in I Aleja

No.	Building number	Evaluation criterion							Final result [pts]
		UC (1)	BS (2)	FL (3)	M&C (4)	AC (5)	F&MU (6)	(DE) (7)	
1	12	5,0	5,0	4,0	4,0	4,0	4,0	3,0	4,1
2	15	4,0	4,0	1,0	1,0	1,0	3,0	4,0	2,6

The average total score for the analyzed buildings on I Aleja was 3.35 points, which indicates a very moderate cohesion of the studied group with the rest of the development. This rating is lowered by the second analyzed building – no. 15. This is primarily due to the failure to preserve the historic architectural style (modern architectural form), materials used (glass and metal), function, and a completely different façade layout (a uniform, smooth plane of glass divided by vertical and horizontal metal elements) (Fig. 2B). The second building refers stylistically to the existing development, and its cohesion is much higher (Fig. 2A).



Fig. 2. Analyzed buildings: A – Aleja N.M.P. No. 12, B – Aleja N.M.P. No. 15.

However, since the analyzed buildings constitute just over 13% of the entire development of I Aleja, when considered as a whole, it can be considered relatively coherent in terms of urban planning and architecture.

II Aleja

There are a total of 24 buildings on II Aleja, of which six were analyzed: 21, 22, 26, 36/38, 39/41, and 40/42. The first is located between the existing historic buildings nos. 19 and 23. The second was created through the expansion and modernization of the former Bergman tenement house. Building no. 26 was built on the site of the former Wassertal tenement house, which was demolished in 1968. For a long time, this area was developed in various ways. At the turn of the 21st century, the plot was developed with a new commercial and service building. Buildings no. 36/38 and 40/42 were built on the site of the previously existing Riecher and Boglewska tenement houses. Building no. 39/41 was constructed on the site of tenement houses damaged during World War II and demolished to make way for new development. The results of the assessment of the urban and architectural coherence of these facilities with the historical buildings are presented in Table 2.

Table 2. Assessment of the urban and architectural coherence of the analyzed buildings in II Aleja

No.	Building number	Evaluation criterion							Final result [pts]
		UC (1)	BS (2)	FL (3)	M&C (4)	AC (5)	F&MU (6)	(DE) (7)	
1	21	5,0	4,5	4,0	3,5	1,0	5,0	3,5	3,8
2	22	5,0	4,0	4,0	3,5	1,0	2,0	5,0	3,5
3	26	5,0	4,5	1,0	1,0	1,0	3,5	1,0	2,4
4	36/38	5,0	4,0	3,5	3,5	1,0	5,0	4,0	3,7
5	39/41	5,0	4,0	4,0	3,5	1,0	5,0	4,0	3,8
6	40/42	5,0	4,5	3,5	3,5	1,0	5,0	4,0	3,8

The obtained results allow us to conclude that the urban and architectural coherence for the studied group is moderate, except for building no. 26, whose assessment differs significantly from the others due to its diametrically different architectural style, materials used, and function (Fig. 3A). Buildings 21, 39/41, and 40/42 received higher scores, although they clearly stand out against the background of the historical buildings of II Aleja (Fig. 3B).



Fig. 3. Analyzed buildings: A – Aleja N.M.P. No. 26, B – Aleja N.M.P. No. 21.

The average score for the analyzed buildings on II Aleja was 3.50, indicating moderate cohesion between the studied group and the rest of the development. However, in this case, the analyzed group constitutes 25% of all buildings on II Aleja, which justifiably creates the impression of greater disruption to the original historical development than in the case of I Aleja.

III Aleja

The largest changes in development occurred on III Aleja. These were caused by less intensive development than on I and II Aleja (vacant plots remained, which were later developed); the demolition of existing historic tenement houses (Wnorowskiego at no. 46, Rucinskiego at no. 49, Olewskiego at no. 50, and Januszewski at no. 62); and the modernization and expansion of existing buildings (Maliszewska's tenement house at current nos. 58/60). There are a total of 27 buildings on III Aleja (not including the Church of the Most Holy Name of Mary), of which 17 were analyzed. Because the building adjacent to building 58/60 on the eastern side does not have a separate serial number, it is designated as 58* in Table 3. The results of the assessment of the urban and architectural coherence of these buildings with the historical development are presented in Table 3.

Table 3. Assessment of the urban and architectural coherence of the analyzed buildings in III Aleja

No.	Building number	Evaluation criterion							Final result [pts]
		UC (1)	BS (2)	FL (3)	M&C (4)	AC (5)	F&MU (6)	(DE) (7)	
1	46	5,0	4,5	4,0	3,5	1,0	5,0	4,0	3,9
2	47A	5,0	3,0	4,0	4,0	3,0	3,0	4,0	3,7
3	49	5,0	4,0	4,0	3,0	2,5	3,0	4,5	3,7
4	50	5,0	4,5	4,0	3,5	1,0	5,0	4,0	3,9
5	57	5,0	4,0	4,5	4,0	3,0	5,0	5,0	4,4
6	58*	5,0	4,0	3,0	3,5	1,0	2,0	4,0	3,2
7	58/60	5,0	5,0	4,5	4,5	4,5	3,5	5,0	4,6
8	59	5,0	4,0	4,5	4,0	3,0	5,0	3,5	4,1
9	61	5,0	4,5	4,5	4,5	3,5	5,0	4,5	4,5
10	62	5,0	4,0	3,0	3,5	1,0	5,0	5,0	3,8
11	63	5,0	4,5	4,0	4,0	3,0	5,0	4,5	4,3
12	64	4,0	4,0	3,0	1,0	1,0	2,0	4,0	2,7
13	65	5,0	4,5	4,0	4,0	3,0	5,0	4,0	4,2
14	67	5,0	4,0	4,0	4,0	3,0	5,0	3,5	4,1
15	69	5,0	4,5	4,0	4,5	3,0	5,0	4,0	4,3
16	73	5,0	4,5	4,0	3,5	3,0	5,0	4,0	4,2
17	81	4,5	4,5	4,0	4,0	3,0	5,0	4,5	4,2

In the case of III Aleja, the number of buildings constructed after World War II and those that have undergone significant modernization is 63% of the total. This confirms the visual impression that this section of Aleja N.M.P. has undergone the most significant transformations in the last eighty years. The average rating for the analyzed group of buildings is 4.00, which allows us to conclude that the urban and architectural coherence of the studied group is good. The building that received the highest rating (no. 58/60) is the former Maliszewska tenement house – a historic building in which, as a result of subsequent renovations, certain architectural details have been simplified, but its historic character has been preserved (Fig. 4A). The building with the lowest rating is a structure built in the second half of the 20th century, which currently houses

the Municipal Art Gallery and conducts commercial and catering activities. It differs from the rest of the development in terms of architecture, function, and location (Fig. 4B).



Fig. 4. Analyzed buildings: A – Aleja N.M.P. No. 58/60, B – Aleja N.M.P. No. 64.

Assessing the urban and architectural coherence of the entire Aleja N.M.P., it can be concluded that the changing development has not disturbed its compositional axis. The visual axis between Jasna Góra Monastery and St. Sigismund's Church has been preserved, and almost all buildings on both sides of the avenue maintain the building line (Fig. 5).



Fig. 5. Panorama of Aleja Najświętszej Maryi Panny in Częstochowa

Building heights do not exceed 5 stories for those built after World War II and 3 stories for historic buildings (excluding attics). Because the stories in older buildings were higher than in newer ones, the height differences for the tallest buildings are not significant.

In terms of architectural features, such as facade layout, materials, colors, and consistency of form, the greatest differences can be observed between the new and modernized buildings and the historic ones. Some of the newly constructed buildings completely fail to blend with the historic character of the Avenue, constituting "foreign bodies" in the urban fabric of this part of Częstochowa.

In most of the analyzed cases, the function and use were adapted to the existing ones—the ground floors are used for retail, services, or restaurants, while the upper floors are used for offices or residential purposes.

As for the elements disrupting the space around the buildings, they are limited to advertisements and signs, the aesthetics of which could be improved. In some cases, restaurants on III Aleja have added "winter gardens" in the form of glass facades, which narrow the sidewalk, obstruct traffic, and distort the architectural character of the surrounding buildings.

Conclusions

The results of the analysis, in light of the adopted criteria, allow us to assess the urban and architectural coherence of the development of Aleja N.M.P. in Częstochowa as moderately good. The element that fared the worst was the failure to preserve the original historic architectural style. New or modernized buildings differ in appearance from the historic buildings, some of them glaringly.

The first factor that influenced this state of affairs was the applicable legal framework, a consequence of the political conditions prevailing after World War II. In the postwar period, there was a very high demand for residential and commercial premises. Issues related to the preservation of cultural heritage were relegated to the background, especially since representatives of the new regime viewed the historical legacy with considerable skepticism. Nevertheless, these regulations allowed for the preservation of the original compositional axis and the maintenance of the existing building line.

The second factor was financial and time constraints – it was cheaper and faster to construct simple building forms, devoid of architectural detail, than to recreate the much more complex and labor-intensive historical buildings.

Third, the lack of aesthetic sensitivity on the part of the investors resulted in buildings that, architecturally, in no way fit with the existing buildings on Aleja N.M.P.

Regarding the remaining criteria, these discrepancies are less noticeable. The original layout of the Aleja N.M.P. was preserved: a wide dual carriageway with a central pedestrian (promenade) median, planted on both sides with trees. The building lines for the northern and southern frontages of Aleja N.M.P. were also maintained.

Despite the changes that have occurred over the last eighty years, the basic assumptions of the original urban and architectural layout have been preserved, although more cohesive architectural elements could have been achieved.

References

- [1] S. Krakowski and A. Czarnota, "Dzieje Częstochowy, od zarania do czasów współczesnych," *Wydawnictwo Śląsk*, Katowice, Poland, 1964.
- [2] K. Nabiałek, "Who Founded the Town of Częstochowa? On the Urbanization of the Lesser Poland in the 14th Century," *Sredniowiecze Polskie i Powszechne*, vol. 11, no. 15, 2019. DOI: 10.31261/SPiP.2019.15.05.
- [3] F. Kiryk (ed.), "Częstochowa. Dzieje miasta i Klasztoru Jasnogorskiego," T.1, *Wydawnictwo Urzędu Miasta Częstochowy*, Częstochowa, Poland, 2002.
- [4] M. Zwolinski, "W dawnej Częstochowie," *Wydawnictwo POLIGRAM*, Częstochowa, Poland, 2021.
- [5] OpenStreetMap contributors. OpenStreetMap. <https://www.openstreetmap.org> [accessed March 26, 2026].
- [6] K. Kersten (ed.), "Częstochowa. Dzieje miasta i Klasztoru Jasnogorskiego," T.4, *Wydawnictwo Urzędu Miasta Częstochowy*, Częstochowa, Poland, 2007.

- [7] E. Usakiewicz, "Zbiór tablic dotyczących region częstochowskiego," *Rocznik statystyczno-sprawozdawczy m. Częstochowy*, Częstochowa, Poland, 1947.
- [8] N. Solkiewicz-Kos, "City Square – The Evolution of Public Spaces as Exemplified by the City of Częstochowa," *The Ignatianum Philosophical Yearbook*, vol. 29, no. 3, pp. 91–110, 2023. DOI: 10.35765/rfi.2023.2903.7.
- [9] J. Nawrot and K. Bloch, "Renovation of a Post-Industrial Building and Change of Its Utility Function," *International Journal of Conservation Science*, vol. 16, no. 3, pp. 1261–1272, 2025. DOI: 10.36868/IJCS.2025.03.03.
- [10] C. Bertolin and A. Loli, "Sustainable interventions in historic buildings: A developing decision-making tool," *Journal of Cultural Heritage*, vol. 34, pp. 291–302, 2018. DOI: <https://doi.org/10.1016/j.culher.2018.08.010>.
- [11] E. Savoie, , "Key factors for revitalising heritage buildings through adaptive reuse," *Buildings and Cities*, vol. 6, no. 1, pp. 103–120, 2025. DOI: <https://doi.org/10.5334/bc.495>.
- [12] H. Michalak, P. Przybysz, "Revitalization of Historic Masonry Tenement Structures: A Case Study," *Journal of Heritage Conservation*, vol. 70, no. 2022, pp. 89–100, 2022. DOI: 10.48234/WK70MASONRY.
- [13] M. Carmona, "Contemporary Public Space: critique and classification. Part One: Critique," *Journal of Urban Design*, vol. 15, no. 1, pp. 123–148, 2010. DOI: <https://doi.org/10.1080/13574800903435651>.
- [14] M. Carmona, "Contemporary public space, Part Two: Classification," *Journal of Urban Design*, vol. 15, no. 2, pp. 157–173, 2010. DOI: 10.1080/13574801003638111.
- [15] F. Rahmat, N.G. Yuli, and I. F. Maharika, "Infill Architecture: Contextualizing Design in an Urban Setting," *Engineering and Technology Quarterly Reviews*, vol. 5, no. 2, pp. 1–17, 2022. DOI: 10.5281/zenodo.6792853.
- [16] J. Nasar and A. Stamps, "Infill McMansions: Style and the psychophysics of size," *Journal of Environmental Psychology*, vol. 29, no. 1, pp. 110–123, 2008. DOI: 10.1016/j.jenvp.2008.09.003.
- [17] M. Zamri, M. Rasidi, and R. Majid, "The Contextual Design Criteria of Infill Building Façade in Malaysian Urban Historic Districts: A Systematic Review," *International Journal of Sustainable Development and Planning*, vol. 18, no. 5, pp. 1467–1475, 2023. DOI: 10.18280/ijstdp.180517.
- [18] M. A. Gaber, A. O. Akcay, "Qualitative and Quantitative Evaluation Techniques of New Infill Designs in Historic Context," *Amazonia Investiga*, vol. 9, no. 35, pp. 20–33, 2020. DOI: 10.34069/AI/2020.35.11.2.
- [19] R. J. Balcerzak and K. Szuminski, "Color in the Design Modern Additions to Heritage Structures of the Klodzko Main Fortress as a Factor in Their Integration," *Journal of Heritage and Conservation*, no. 82, pp. 70–87, 2025. DOI: 10.48234/WK82FORTRESS.
- [20] N. Onay and D. Kanoglu, "Functional Continuity in Adaptive Reuse of Historic Buildings: Evaluating a Studio Experience," *American Journal of Educational Research*, vol. 3, no. 6, pp. 674–682, 2015. DOI: 10.12691/education-3-6-2.
- [21] P. Crawford, E. Lee, and M. Beatty, "Aesthetic Perception of Urban Streetscapes and the Impact of Form-Based Codes and Traditional Zoning Codes on Commercial Signage," *Current Urban Studies*, vol. 3 no. 3, pp. 199–215, 2015. DOI: <http://dx.doi.org/10.4236/cus.2015.33017>.

- [22] E. Gelan, “Assessing Visual Pollution: The Impact of Urban Outdoor Advertisements in Addis Ababa, Ethiopia,” *Architecture*, vol. 5, no. 1, 9, pp. 1-27, 2025. DOI: <https://doi.org/10.3390/architecture5010009>.
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