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Defining the Attributes for Modernist Urban Heritage: The Case of 'Kaunas 1919–1939: Architecture of Optimism'

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Abstract: The cultural heritage of modern architecture is a widely acknowledged phenomenon; however, unique urban landscapes that have witnessed a fundamental transformation in urban life in the 20th century are still underrepresented on the UNESCO World Heritage List. In this paper the built urban heritage of Kaunas city (1919–1939) is investigated as an example of a modern urban heritage site with a problematic focus on defining the attributes of urban heritage, especially when intangible heritage values are added to the tangible built heritage. In this paper the attributes of modern urban heritage are discussed on the example of “Modernist Kaunas (1919–1939): Architecture of Optimism”, the nomination dossier for the UNESCO World Heritage List. Three groups of attributes are described using historical research and later discussed by applying the method of comparative analysis. The conclusion proposes that Modernist Kaunas can fill the gap by representing Eastern European modern urbanity and enhance the understanding of the modern global city by reflecting the metropolitan aspirations in modern Europe.

Keywords: modernist architecture; modernist urban heritage; Kaunas modernism; architecture of optimism; Lithuania; UNESCO world heritage



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1. Introduction

The cultural heritage of modern architecture is a well recognized phenomenon; however, a special attention needs to be paid to modern urban landscapes that represent an unprecedented pace of urban modernization, and the huge architectural legacy of the 20th. Yet, modern urban landscapes are still underrepresented on the UNESCO World Heritage List, therefore in 1994 UNESCO launched a Global Strategy for a credible, representative and balanced World heritage list for promoting new categories for World Heritage sites, such as cultural landscapes, industrial heritage, and historic cities [1,2]. Up to date 46 properties representing the 20th century heritage are listed on the UNESCO World Heritage List; among them 17 properties represent the development of modern urban areas and cities, and few modern capital cities, built in the 20th century: *Brasilia* (1987), the *White City of Tel-Aviv—the Modern Movement* (2003), *Rabat, Modern Capital and Historic City: a Shared Heritage* (2012), and *Asmara, a Modernist African City* (2017). It can be noted that the dynamic modernization and transformation of European capital cities is not yet represented.

While the number of 20th-century objects on the WH list has increased, it should be noted that properties, already inscribed on the List, illustrate classical icons of Modern Movement and International Modernism: *Bauhaus and its sites in Weimar and Dessau* (Germany, 1996); *Rietveld Schröder House* (Netherlands, 2000); *Tugendhat Villa in Brno* (Czech Republic, 2001); *Berlin Modernism Housing Estates* (Germany, 2008); *Fagus Factory in Alfeld* (Germany, 2011); *Van Nelle Factory* (Netherlands, 2014); *Ivrea, industrial city of the 20th century* (Italy, 2018), and works by recognised masters of the Modern Movement (including Ludwig Mies van der Rohe, Walter Gropius, Frank Lloyd Wright, and Le Corbusier). Thus far, the UNESCO World Heritage List has tended to focus mostly on examples from Western Europe that were interpreted as examples of general development and as typical cases. Only a few examples represent the diversity of Modernism, including *Victorian Gothic and Art Deco Ensembles in Mumbai* (India, 2018), and *Pampulha Modern Ensemble* (Brazil, 2016).

In this paper the nomination dossier *Modernist Kaunas (1919–1939): Architecture of Optimism* to the UNESCO World Heritage List is investigated as an example of a modern urban heritage site and European capital city which has witnessed a fundamental transformation of urban life in the 20th century. In the executive summary of the dossier, the nominated site is described as “the area which was planned in the mid-19th century and largely developed from 1919–1939, when, after the declaration of an independent State of Lithuania in 1918, Kaunas served as the provisional capital of the state. The property consists of two areas—Naujamiestis and Žaliakalnis. Naujamiestis (New Town), a generous grid planned in 1847, was attached to the eastern edge of the Old Town (developed in the 13th to 18th centuries) and extended eastwards along the Nemunas River valley. Encircling Naujamiestis to the north and east is Žaliakalnis (Green Hill)—a distinctive natural plateau rising to an average of 35–40 metres above the river valley. Žaliakalnis was developed as a garden city residential suburb in 1919–1939 according to the 1923 master plan of Kaunas, which enabled a seven-fold increase in area from 1919–1939 and accommodated a doubling of the city’s population to 155,000 over the same period. The status of provisional capital was crucial for unprecedented development. In less than twenty years, under the auspices of the new national government, Kaunas was transformed into a modern capital based on the assimilation of modern urban planning and architecture with pre-existing natural, urban and other local conditions. 1500 of the 6000 remaining buildings erected in 1919–1939 are concentrated in the nominated area. Architecture, specifically in the form of a local inflection of the international language of Modernism, played a particularly important role in that transformation.” [3], Figure 1.



Figure 1. Kaunas from a bird’s view: Naujamiestis by the river and Žaliakalnis on the hills. Aerial photo: Živilė Šimkutė, 2019.

The nomination was based on the assumption that Modernist Kaunas can fill the gap by representing Eastern European modern urbanity and enhance the understanding of the modern global city under criteria (ii) and (iv) of the *Operational Guidelines for the Implementation of the World Heritage Convention* [4]. *Criterion (ii)* requires to “exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-

planning and landscape design". To meet this criterion, Modernist Kaunas was described as "expanding the concept of Modernism beyond the International Style by revealing a more diverse, complex fabric of numerous, often divergent, cultural, social, political, and artistic trends, and is an exceptional example of rethinking architecture as a process of social, political, and cultural modernization in the 20th century. An outstanding value of the Kaunas cityscape is its architectural diversity, represented through the plurality of modern architectural ideas, which co-existed throughout the world in the first half of the 20th century." [5] *Criterion (iv)* requires the nominated property to be "an outstanding example of a type of building, architectural or technological ensemble, or landscape that illustrates a significant stage(s) in human history". Modernist Kaunas therefore is conceptualised as "an example of a historic city subject to rapid urbanization and modernization, encapsulated by diverse expressions of the values and aspirations associated with an optimistic belief in an independent future amid the turbulence of the early 20th century. The gradual and sustainable modernization of Kaunas, carried out through civic initiatives with respect to the urban context and natural environment, produced an outstanding urban landscape and modern architectural language serving the needs of provisional capital and possessing functions, structures, and building typologies that reflected the modernization of urban life in the 20th century [5].

However, the definition of attributes for modern urban heritage (including Modernist Kaunas) was rather complicated, especially when material elements that constitute the historic city (urban grid, streets, plots, construction materials, building volumes) were to be presented and evaluated in a broader cultural context (e.g., "the architecture of optimism") [6]. Dennis Rodwell and Michael Turner have noted that the methodology of heritage value assessment for single monuments is not usually well adapted for value assessment of urban heritage sites [7,8]. In addition, the very concept of a 20th century city as a historic urban site still needs to be verified and confirmed. As Edward Denison has noted, "to understand the present and prepare for the future, we need to better understand the global experiences of the recent past, which gave rise to the systems, infrastructures, and urban forms that now barely sustain life on earth for our species" [9].

Comparison of Kaunas in the national, regional, and global contexts demonstrated that the construction of a new modern capital, during the 20th century, was an important topic in the context of the emergence and affirmation of new states. The challenge of defining the attributes lies in the dual representativeness of Modernist Kaunas. Compared to the Central and Eastern European capital cities and other well-known cities of the region that have a rich layer of modernist architecture built on historic urban layers and inspired by the socio-political imperatives of construction of the new capitals, Kaunas combines features characteristic to the region as well as exceptional features. Therefore, in this paper the groups of values and valuable attributes of Modernist Kaunas as a modern urban heritage are discussed in the context of a broader cultural context—not merely as the material elements, but as meanings of these elements for the society and representatives of the global 20th century urbanity.

2. Materials and Methods

The Nomination Dossier for Modernist Kaunas was prepared in 2019–2021 by a group of experts assembled by Kaunas City Municipality [10]. The group carried out archival, cartographical, iconographical, historical, and architectural history research that was supplemented by the analysis of existing heritage protection documents, social and economic values research, workshops with professional communities and residents, an international symposium [11], and an international traveling research-based exhibition [12]. Experience from the previous successful application of Kaunas for the European Heritage Label (2015) was also used [13]. Three main chapters of the dossier served as a basis for defining the attributes: delineation of the boundaries of the nominated property, the comparative analysis, and the description of the Outstanding Universal Value.

The rationale behind the boundary delineation of the nominated property was the incorporation of the urban layout that had evolved through several stages of urban planning with the representation of its urban fabric and structures up to 1939. The nominated area exemplifies the city’s modernization during the interwar period (1919–1939) and consists of two areas: Naujamiestis and Žaliakalnis. Both areas are protected cultural heritage sites that possess several distinctive components in terms of historical significance, architecture, and urban planning, Figure 2.

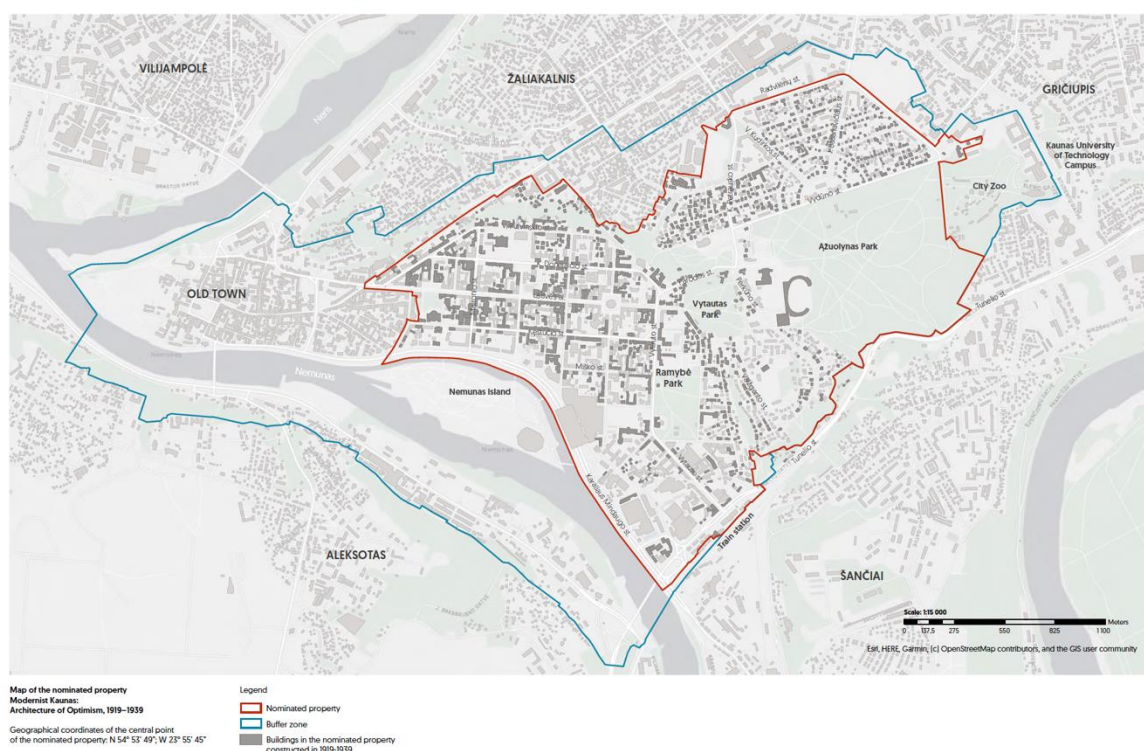


Figure 2. Position of the nominated property (red) and buffer zone (blue). Naujamiestis (on the left) spans a territory of 226 hectares and Žaliakalnis (on the right) has a total area of 243 hectares. The nominated property covers a total area of 451.6 ha. Drawing by Živilė Šimkutė and Sigita Bugenienė, 2021.

The comparative analysis on a national, regional and global scale has been compiled to assess the importance of Kaunas 1919–1939 in an international context. This comparative analysis has shown that on the global scale, none of the already inscribed 20th century’s urban heritage sites, “has had to work around the constraints of existing historic structures inside a modernist project, either because of the urban and architectural approach adopted, or because of the absence or destruction of any historic structures” [14]. It was also found out that compared to many modernist cities, Kaunas presents an evolutionary rather than revolutionary process of urban modernization. The modernist project in the historic and natural setting illustrates the innovative European trends of town planning sustainably adapted for the construction of an evolving capital city. The comparative analysis also showed that Modernist Kaunas can be presented as an “outstanding example of a historic urban landscape inspired by the optimistic construction of a new capital city, demonstrating diversity and a plurality of modernist architecture, and witnessing a fundamental transformation of urban life in the 20th century retaining its authenticity and integrity up to this day” [14].

According to the latest methodology proposed for the evaluation of the 20th century sites in the publication *The Twentieth Century Historic Thematic Framework: A Tool for Assessing Heritage Sites* prepared by Getty Conservation Institute, the themes were selected to form the groups of value attributes for Modernist Kaunas: “Theme 1. Rapid Urbanization

and the Growth of Large Cities (Please see Table 1); Theme 2. Accelerated Scientific and Technological Development (Please see Table 2); Theme 6. Internationalization, New Nation-States, and Human Rights (Please see Table 3); Theme 7. Conserving the Natural Environment, Buildings, and Landscapes (Please see Table 4); Theme 8. Popular Culture and Tourism (Please see Table 5); and Theme 9. Religious, Educational, and Cultural Institutions (Please see Table 6)” [15].

Table 1. Rapid Urbanization and the Growth of Large Cities.

Subthemes	Types of Places
<ul style="list-style-type: none"> • Mass population migration to urban areas and the decline of smaller towns • Increasing city size, population, and density • Increasing scale and range of infrastructure needs • Defining new forms of urban living: densification and suburbanization • Redeveloping and renewing inner cities 	<ul style="list-style-type: none"> • Water and sewage systems • Power plants and infrastructure • Urban mass transit stations and infrastructure • Factories and industrial zones • Suburbs • Social housing and housing estates

Table 2. Accelerated Scientific and Technological Development.

Subthemes	Types of Places
<ul style="list-style-type: none"> • Increasing Pace and Scale of Scientific Change • Advances in Delivery and Administration of public health • Application of research to development of products and services • Adaptation of Military Technology to Civilian and commercial use 	<ul style="list-style-type: none"> • Civic landscapes and public parks • Structures built with new building materials • Hospitals and medical facilities, sanatoriums, geriatric care facilities, and mental health facilities • Research and development facilities • Scientific Laboratories

Table 3. Internationalization, New Nation-States, and Human Rights.

Subthemes	Types of Places
<ul style="list-style-type: none"> • Postcolonialism, independence movements, and emerging nation-states 	<ul style="list-style-type: none"> • Public Spaces And Monuments that Celebrate New nation-states • Public spaces and monuments that express national identity • Purpose-built capital cities and administrative centers • Independence monuments and memorials

Table 4. Conserving the Natural Environment, Buildings, and Landscapes.

Subthemes	Types of Places
<ul style="list-style-type: none"> • Sustainable development 	<ul style="list-style-type: none"> • Adaptively reused older buildings, spaces, structures, and infrastructure • Sites associated with painful memories or social minorities

Table 5. Popular Culture and Tourism.

Subthemes	Types of Places
<ul style="list-style-type: none"> • Growing access to leisure • Increased participation in individual and competitive sports • Growth of Mass Sports Spectatorship and international sports competition 	<ul style="list-style-type: none"> • Sporting, recreation, and leisure facilities • Cinemas and theaters • Amusement parks and showgrounds • Restaurants and cafes

Table 6. Religious, Educational, and Cultural Institutions.

Subthemes	Types of Places
<ul style="list-style-type: none"> • Increasing role of governments in mass education • Expansion of all levels of public, private, and religious education • Growth of informal education through museums and libraries • Educational and cultural institutions as expressions of national pride 	<ul style="list-style-type: none"> • Houses of worship, convents, monasteries, shrines, and other sacred sites • Public and private elementary and secondary schools, colleges, and universities • Technical schools • Museums • Cultural centers

After combining the findings of the comparative analysis and according to the thematic groups of *The Twentieth Century Historic Thematic Framework*, the attributes of Modernist Kaunas were collected into three groups of values: urban sustainability, optimistic construction of the capital city, and a plurality of modernist architecture. These attributes were defined with an aim to represent the characteristic processes of urban transformation and modern architecture of Kaunas in the period where cities developed as new capitals of nation states implementing new urban planning principles as a modern extension to a pre-existing historic old town.

3. Defining the Attributes for Modernist Kaunas

3.1. The Cultural Context: Architecture of Optimism and Emerging New Capital Cities in the Early 20th Century

The shaping of Kaunas as a new East Central European metropolis can be understood as a process in which architecture followed ideology, a process that, to a striking degree, linked urban planning to far-reaching promises of an improved human condition and a prosperous national future. The rapid growth of cities, new forms of urban life and the emergence of the nation state are key facets of the modern world. The decades from 1890 until the outbreak of the Second World War in 1939 were a period of profound change which unfolded in Eastern Central Europe and transformed the region politically and geographically [16,17]. The collapse of former empires and the recasting of the geopolitical order in Europe after the First World War saw the emergence of new nation states. Austria, Poland, Czechoslovakia, Hungary, Finland, Estonia, Latvia, and Lithuania shared an imperial legacy inherited from the three great European empires (Germany, Austria-Hungary, and Russia) and most of them emerged as nation states from these former imperial entities.

The history of Central and Eastern European cities with metropolitan aspirations is also part of the history of modernist architecture and urban planning [18]. Newly established governments felt the need to represent national power and legitimacy, both of which were demonstrated through architecture and urban form. Urban development was equated to nation-building. Capitals such as Kaunas faced not only infrastructural challenges, but they were also central to national pursuits for legitimacy that demanded the construction of representative government buildings, as well as the implementation of

solutions to persisting social problems. An important facet of modernization in Eastern Europe, therefore, was its heavy reliance on an expression of state policies [19].

The outbreak of the Second World War brought this era to an abrupt end. Warfare, ethnic cleansing, the Holocaust, and totalitarian dictatorship reshaped the region in a multitude of ways that distinguished it irrevocably from the interwar period. After 1945, in much of Eastern Europe the national, cultural, and political pluralism of the interwar era was subsumed within the Soviet empire. In many former nation states, the process of urbanization continued, but the age of capital planning and architectural optimism that characterized the interwar period was over.

As a provisional capital, Kaunas testifies to the tense political situations of New Europe, and is both characteristic and exceptional within the European context. In the national context, Kaunas is recognized and valued as a historically important provisional capital city shaping the emerging modern state of Lithuania, and as an outstanding example of the modernity of the interwar period. The historic importance of Kaunas as the *de facto* capital (1919–1939) of the First Republic of Lithuania (1918–1940) is evident not only in its urban, architectural, and environmental legacy but also in historical, political, and social intangible heritage associated with the optimistic ‘building of the nation’. Because of its status and importance, Kaunas has become an example for other Lithuanian cities to modernize. Therefore, at the national level, Kaunas is an outstanding example of modern urbanization both in terms of quality and quantity.

In the Baltic context the three independent Baltic Republics—Estonia, Latvia and Lithuania—emerged on the Baltic Sea Northwest coast after the collapse of the Russian Empire in 1918. Rather similar in size and modern aspirations, they were often called the Baltic Sisters in the interwar period. As noted by Andreas Fülberth and Steven Mansbach in their historical research, the Baltic States faced similar tasks in constructing nation states and national capitals, because Tallinn, Riga and Kaunas were all former provincial towns and lacked the infrastructure required of capital cities; however, the problems were not always solved in a similar manner [20,21]. Mart Kalm compared modernization of architecture in interwar Baltic States, and has shown how modern architecture helped to emphasize the differences from imperial history, and to present themselves as modern European nations [22]. The capital modernism created and asserted in Kaunas was an outstanding solution articulated in the new Baltic republics whereas material and historical circumstances prevailing in Tallinn [23] and Riga [24] dictated different responses to contemporary challenges.

Unlike the development of important historic cities in the region, Helsinki [25], Warsaw [26], Krakow [27], Brno [28] or Lviv [29] that also had a layer of modernist architecture, Kaunas lacked the physical size, native population, commercial contacts, and material resources. However, Kaunas contributed ingeniously to the modernist expressions constructed in East Central Europe, because an important factor determining the different outcome was its provisional and contingent nature, compared with the ambition and permanence of other new East Central European capitals and regional cities.

3.2. Evolutionary Modernisation of the Urban Plan

One of the unique attributes of Kaunas was that it is an evolutionary process of modernization, which illustrates the modernist project locally adapted in the historic and natural setting. The modernization of Kaunas’ urban layout in 1919–1939 proceeded not through dramatic urban reconstruction but by a steady adaptation of the existing urban and natural landscapes that resulted in two distinctive areas—Naujamiestis and Žaliakalnis with evident attributes of urban structure and urban morphology. The attributes that illustrate the described processes can be seen in Table 7 and the following textual explanation.

Table 7. Attributes that illustrate evolutionary modernisation of the urban plan.

Thematic Groups Attributes	Types of Attributes	Protected Attributes
Evolutionary modernisation of the urban plan		
Integration and reuse of the 19th century heritage	Urban structure and urban morphology: Integration and reuse of 19th century urban plan	Street grid and pattern of Naujamiestis area: streets, squares, axes, views; e.g., the historic orthogonal street grid, historic closed-block construction zones; the Central axis—Laisvės Alėja; three squares: Vienybės, Nepriklausomybės and a square between City Garden and L. Sapiegos street. City block building type (perimetric, mixed) of Naujamiestis area. Former Fortress roads and spaces in the Žaliakalnis area, integrated into the urban structure, e.g., Radvilėnų plentas, Aukštaičių street, Parodos street, Kaukas stairway, open space (esplanade)—Petras Vileišis square, Vytautas park.
	Architecture: Buildings of other historical periods	Buildings of the 19th century and earlier periods in the Naujamiestis area that were used, reused, modernized and renovated for the administrative and cultural function of the modern state in 1919–1939 and are listed on the Cultural Heritage Register (according to individually defined attributes). Buildings of the Fortress period adapted to contemporary needs in the Interwar period in Žaliakalnis and listed on the Cultural Heritage Register, such as Waterworks Station, Radio Station, etc.
Integration with and assimilation of the natural environment	Natural elements: Geomorphological setting and landscape elements	The terrain—river valley’s lower and upper terraces, slopes greenery, ancient oak-wood—žuolynas Park.
Implementation of the garden city residential suburb	Natural elements: Geomorphological setting and landscape elements	The terrain of the river valley’s upper terrace, slopes, greenery, žuolynas Park, and Vytautas Park.
	Urban structure and urban morphology: Implementation of the Garden City residential suburb	Street grid and pattern of Žaliakalnis: streets (incorporated former Fortress roads supplemented by interwar street pattern and new axes (Vydūno, J. Basanavičiaus, V. Kudirkos avenues), open views from the slopes towards Naujamiestis and Nemunas valley. Plot type (open) , building type, form and position (detached, villa type housing development with greenery (historic open-plan construction zones), Sports complex area; Research Laboratory area..
	Architecture: Modern residential architecture	Buildings representing modern housing typology and a plurality of modernist architecture, including wooden vernacular, wooden modernist, neo-classical, art deco, and modernist style residential architecture listed on the Cultural Heritage Register or protected by Žaliakalnis reglament and special plan, according to individually defined attributes.
	Function: Of urban areas (zones) and buildings	Residential neighborhoods of Žaliakalnis, and recreational (žuolynas and Vytautas parks) and sports facilities (Sports Complex).

3.2.1. Integration and Reuse of the 19th Century Urban Heritage

The coexistence of new architecture alongside the legacy of 19th century construction is a characteristic feature that shaped the spatial evolution of Kaunas between the two world wars. The Lithuanian government moved to Kaunas from Vilnius in January 1919 because

of geo-political reasons, but Kaunas was not prepared to serve as a capital city. Therefore, most offices and residents occupied the existing Naujamiestis (New Town), filling up its urban structure laid in the mid-19th century: an orthogonal street grid, three squares arranged in a chessboard pattern, a perimeter block development with two-story structures, and an urban axis—an avenue called Laisvės Alėja. The modern, three- to five-story multi-purpose buildings arising along the streets of Naujamiestis helped shape a compact, multi-functional city core adapted to meet the essential needs of the provisional capital.

A prominent attribute of interwar Kaunas' development associated with modern urban planning was the designation of zones, driven by a combination of aesthetic and functional motives, contributing significantly to the formulation of Kaunas' modern cityscape. This was a progressive step in an effort to provide the local population with clean and hygienic living and environmental conditions in the city centre. In 1932, Kaunas was divided into five zones based on construction type:

- zones designated for brick buildings;
- zones designated for closed-plan construction;
- zones designated for open-plan construction, where buildings were required to be sited away from property lines, helped to shape a garden type cityscape;
- zones designated for tile roof structures were expected to improve the city's aesthetic appearance;
- zones reserved for industrial development.

The shape of the newly laid out Žaliakalnis district was determined by the remains of the 19th century Russian Imperial Kaunas military fortress. It was an important element of the new Master plan for Kaunas (1923), because it reused the former fortifications to create a green belt around the existing city territory [30]. Though this concept was not fully implemented, a portion of the city's perimeter continued to follow the former fortification lines for another decade, and urban development continued primarily along the military roads of the central ring of fortifications. The situation was similar in the suburbs encircled by a second ring of fortifications. Former military roads, gunpowder magazines, forts, a radio station, batteries, defensive water trenches, and an artificially shaped terrain were all harmoniously incorporated into the landscape of a new Kaunas.

3.2.2. Integration with and the Assimilation of the Natural Environment

Another key attribute of modern Kaunas is its integration with its natural surroundings. Kaunas was established on two geomorphological landscapes: a valley-carved limnoglacial plane and on the sandy ancient riverbeds etched out by the Nemunas and Neris Rivers. A narrow transitional strip runs along the steep slopes created by the Nemunas and Neris riverbeds, etched by deep gullies reaching up and over the slopes. The most valuable segment of this terrain consists of oak forests on the heights and pine groves on the Nemunas and Neris river loops, which were adapted for recreational purposes in the 1930s.

The Old Town of Kaunas, which was developed in 13–18th centuries; and Naujamiestis, which was developed in the 19th century, grew up on the flat plain at the confluence of the Nemunas and Neris rivers. However, in the early 20th century the growth of the city started using the surrounding heights. These steep green slopes became a very important vertical dimension of the new city and overall urban composition. The green areas, green slopes and specially protected green areas as well as planted new parks were deliberately developed as a significant environmental component in the urban composition of Modernist Kaunas. The integration of natural landscapes elicited novel architectural responses on the slopes surrounding the city. A series of landmarks arrayed along the horizon crowned the city.

The significance of the natural slopes surrounding Naujamiestis and the Old Town in shaping the character of Modernist Kaunas was acknowledged in 1933 when the municipal government mandated the proper management of these slopes. It was precisely this connection between the sloping terrain and the developing modern city in the interwar period that enriched modern Kaunas' evolving cityscape with very specific features. Small

streets on the slopes and clusters of residential buildings along the slopes continued to enrich the diversity of Kaunas' urban spaces during the interwar period.

3.2.3. Implementation of the Garden City Residential Suburb

The Žaliakalnis area is an example of the realization of the garden city concept in several different forms. The garden city concept was discussed extensively in professional circles and in the national press throughout the 1920s. It was also supported by Kaunas' first mayor, Jonas Vileišis, who served from 1921 to 1931. The mayor's interest in new urban planning trends and visits to the International Garden Cities and Town Planning Association conference in London in 1922 led to active debates about Kaunas' urban and infrastructural development. In 1923, Antanas Jokimas, the city's chief engineer, was appointed to represent Lithuania at the next conference of the association in Gothenburg. In late 1923, Marius Frandsen, an experienced Danish engineer and urban planner, was invited from Copenhagen to draw up a new master plan for Kaunas. Inspired by the opportunity to create an entirely new city, Frandsen, in collaboration with Jokimas, created a master plan that divided the city into functional zones with uniform buildings (factory districts, villas, and working-class housing), Figure 3. Each of these districts was to have its own hospitals, schools, places of worship, and areas allocated to housing, sport, and community activities [31]. One of the most intriguing elements of Frandsen's plan was the suggestion to use the fortifications of the former Kaunas fortress to create a green belt around the existing city territory.



Figure 3. A Master plan for Kaunas by engineers Marius Frandsen (Copenhagen) and Antanas Jokimas (Kaunas), 1923. Drawing source: Lithuanian National Museum (published with permission).

Such an ambitious project would have required considerable funds and extensive reconfiguring of the existing urban structure. Only a small portion of the plan was ever implemented and can be seen in Žaliakalnis. Because the land there was owned by the city, there were few obstacles to creating a well-planned street grid. The planning and growth of Žaliakalnis were consequently supported by municipal legislation and modern town-planning regulation, therefore the conceptual and economic basis of the Garden City idea was implemented in full. For example, the idea of community-owned property championed by Ebenezer Howard in his original garden city concept was put into practice. Land plots in Žaliakalnis were allocated to residents on the basis of perpetual lease agreements and collected rents were paid to the Kaunas municipal government, which reserved the right to regulate the area's development, Figure 4.

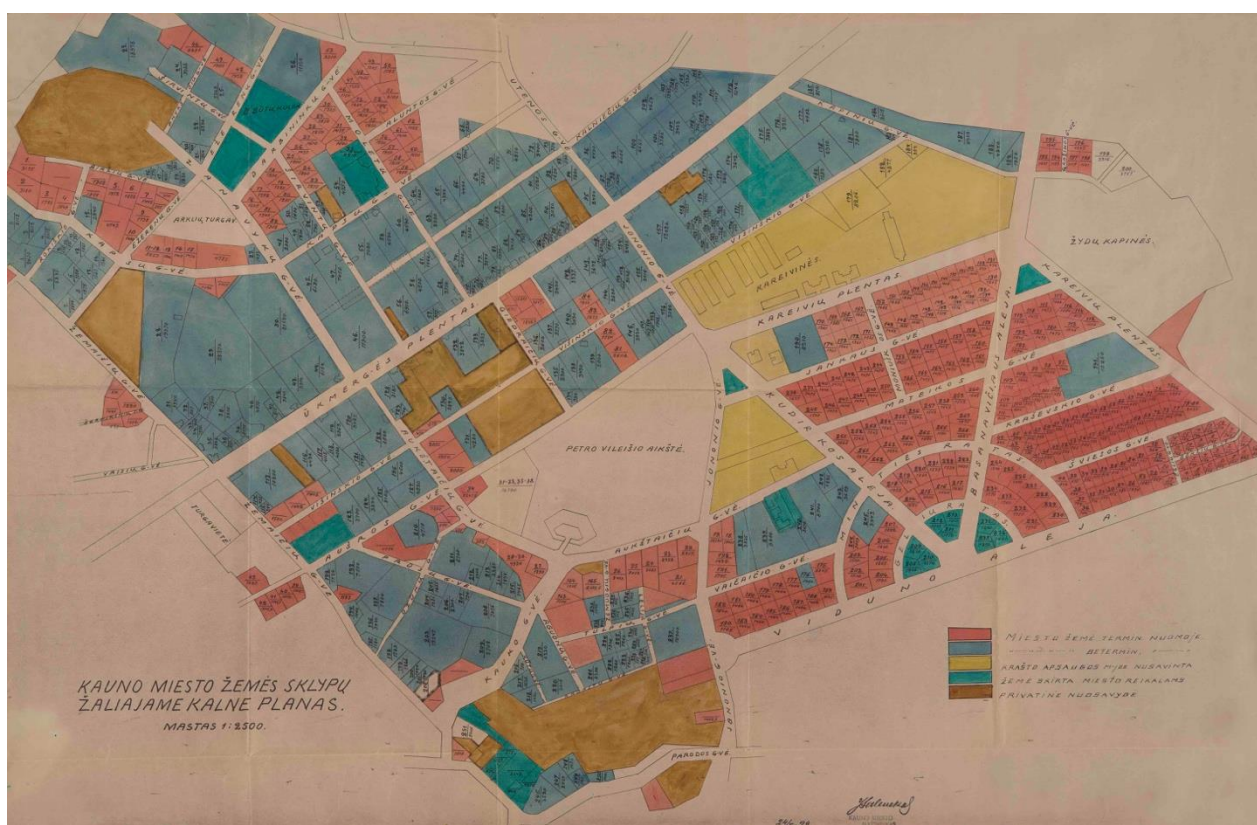


Figure 4. Map of plots in Žaliakalnis, 1929. Red and blue plots belonged to the city and were leased to residents; yellow plots belonged to the Ministry of Defense; dark blue plots were allocated for municipal needs; and brown plots were only allocated for private ownership. Drawing source: Lithuanian Central State Archives.

Modernisation of Kaunas urban plan, carried out in 1923, contributed to the European processes in a form of publication Considerations about the City Plan problem with a concrete case as a ground plan and construction plan for Kaunas, Lithuania's capital [32], that was written and published by Danish planner Marius Frandsen in 1924 based on his experience in Kaunas.

3.3. Optimistic Construction of the Capital City

Kaunas served as Lithuania's provisional capital city from 1919 to 1939. The modern capital of the newly emerging nation state was expected to be the practical and symbolic focus of national administration and a centre of national identity. The transformation on such a scale was problematic because of the status of provisional capital. Nonetheless, within these limitations, and for the brief two decades of its political prominence, Kaunas

served as a seedbed for modernist experimentation. In this regard, Kaunas presented a novel form of modern architecture appropriate for a new state. Most of the new states had developed primary cities that faced only infrastructural challenges, whereas in Kaunas there was an urgent need for new construction, including government buildings, cultural and social infrastructure, and new housing. Compared to other primary cities in the region Kaunas stands out as a unique ‘provisional capital’ that had to rapidly construct a new capital city, including a varied typology of administrative, social, and cultural buildings as well as modern housing. The attributes that illustrate the described processes can be seen in Table 8 and the following textual explanation.

Table 8. Attributes that illustrate the optimistic construction of the capital city.

Thematic Groups Attributes	Types of Attributes	Protected Attributes	
Optimistic construction of the capital city	Administrative centre	Urban structure and urban morphology: Integration and reuse of 19th century urban plan	Street grid and pattern of Naujamiestis area: streets, squares, axes, views. Central axis—Laisvės Alėja; three squares: Vienybės, Nepriklausomybės and a square between City Garden and L. Sapiegos street, the historic orthogonal street grid. City block building type (perimetric (historic closed-block construction zone), mixed morphotype), form (size) and position of Naujamiestis area .
		Architecture: Buildings of modernist architecture and of other historical periods	Buildings of modernist architecture and buildings of other historical periods modernized and reused for the administrative and cultural function of the modern state; listed on the Cultural Heritage Register, according to individually defined attributes.
	Function: Of urban areas (zones) and buildings	Authentic or similar function of landmark buildings: most of the buildings in the area have maintained their administrative, cultural, educational, social and religious functions (e.g., Vytautas the Great Museum and M. K. Čiurlionis National Art Museum, the Romuva Cinema, the Vytautas Magnus University’s Main Buildings (currently KTU university), the Lithuanian Officers’ Club, Research laboratory, etc.).	
	Intangible heritage: Memory, tradition, association, experience and feeling of the place	Official national celebrations, international and local international festivals and cultural events are held annually. Monuments, memorial plaques and displays.	
Social infrastructure	Architecture: Buildings of modernist architecture and of other historical periods	Buildings of modernist architecture designed and purposely built for education, health and social care of the multinational and multicultural modern society; listed on Cultural Heritage Register, according to individually defined attributes.	
	Function: Of buildings	Authentic or similar function of landmark buildings (e.g., the Chamber of Labour (currently the Kaunas Cultural Centre), Sports Hall, Hospital on Vytauto Street, etc.).	
Modern housing	Natural elements: Geomorphological setting and landscape elements	River valley’s lower and upper terraces, slopes, greenery, and historic parks.	
	Urban structure and urban morphology: Planning of the new residential areas and neighbourhoods	Street grid and pattern: streets, squares, axes, views, landmarks in Naujamiestis and Žaliakalnis. Plot types, building types, form and position (perimetric, mixed, detached etc.).	

Table 8. Cont.

Architecture: Buildings of modernist architecture and of other historical periods	Buildings of modernist residential architecture listed on the Cultural Heritage Register; their physical form, fabric, and function, according to individually defined attributes.
Function: Of urban areas (zones) and buildings	Residential function of neighbourhoods in Naujamiestis and Žaliakalnis.
Intangible heritage: Memory, tradition, association, experience and feeling of the place	Houses are called by the names of their historic owners, memorial houses, memorial museums of prominent personalities.

3.3.1. An Administrative Centre

The modern capital was, above all, the seat of government and legitimation of its existence. However, as long as the hope of returning to the historical capital Vilnius lived on, maintenance of government buildings in Kaunas was limited to simple renovations. The hopes for a temporary stay in Kaunas began to fade in the late 1920s, evidenced by the subsequent private construction and extensive renovations on buildings designated for government institutions. A characteristic type of hybrid administrative building shared by several institutions was developed in Kaunas due to the provisional nature of the capital and lack of funds. In the 1930s, Naujamiestis saw the construction of modern administrative buildings for new state institutions and organizations that were supported by the state as well as commercial headquarters.

The national narrative was promoted by a National Museum, which included two separate War and Culture museums in one building. The adjacent Vienybės (Unity) Square and garden with its monument to the Fallen for Lithuania's Freedom became the principal venue for official national celebrations. New national administrative and cultural buildings constructed for the purposes of the provisional capital in 1919–1939 constitute an important attribute of the optimistic construction of the new capital city.

3.3.2. Social Infrastructure

Modernization in Kaunas was imperative for building a truly modern society. Modernist solutions were dictated by certain practical requirements and economic constraints. Improving the country's educational system and providing it with a suitable architectural infrastructure were deemed critical to the modernization programme of the new state. In addition to primary schools, six new Lithuanian-language secondary schools, six secondary schools for Jewish students, and several schools for Russian, Polish, and German-heritage children were built in Kaunas by the state and private organizations. The establishment in 1922 of the University of Lithuania was due solely to the city's status as the provisional capital. Modernist architecture was promoted for these new educational institutions, marking a shift away from dark classrooms toward bright and spacious interiors commensurate with modern standards of comfort.

Similar approaches were applied to the nation's fledgling systems of health care and social welfare. This new national infrastructure involved the active participation of non-governmental organizations and individuals. By 1938, Kaunas had twenty-three hospitals, twenty-seven outpatient care centres, thirteen chemistry laboratories, seven x-ray facilities, and twenty-seven pharmacies, and construction had begun on a large clinic compound based on the winning entry in an international competition designed by French architects Urbain Cassan and Ellie Ouchanoff. Health and social insurance funds were also introduced by the government.

A campaign to better manage and increase recreational areas in Kaunas was closely associated with modernist rhetoric of hygiene, fresh air, and sunlight. A modern sports compound including a stadium, basketball arena, and the Hall of Physical Culture was

built in Žuolynas Park. Considerable attention was paid to green zones and recreational use of riverbanks became extremely important in developing urban territories.

The national government started to invest in Kaunas only by the late 1920s, because of the unstable political situation. However, the new residents of Kaunas, who arrived in the capital-to-be city, started building new structures for their needs. Therefore, Modernist Kaunas was built by the civic initiative of its multicultural old and new residents (with substantial financial help from émigré Lithuanians in the United States): Lithuanian, Jewish, Polish, German entrepreneurs, intellectuals, and civil servants, who arrived from rural provinces. This civic initiative and local entrepreneurship inspired local interpretation of modernist architecture, which was very different in comparison to state-imposed modernism [33]. The remaining modern buildings of the new social infrastructure are an important attribute of the optimistic state and civic initiative to create a modern social infrastructure and modern lifestyles.

3.3.3. Modern Housing

The construction of modern housing became one of the most significant attributes of Kaunas Modernism—in terms of quality, quantity, and architectural diversity. Housing was in severely short supply in the rapidly growing provisional capital. Therefore residential buildings became the most important element of the construction sector throughout the interwar period [34]. Of the nearly 12,000 construction and renovation permits issued between 1918 and 1940, approximately 60% were for residential projects. Individually constructed, privately-owned residential homes were the most prevalent building type in interwar Kaunas and, as such, heavily influenced the city's character and shaped the local environment:

- Single-family cottages or urban villas. With a few exceptions, private, single-family urban villas were developed further away from the city center. From luxurious residences to more modest but particularly functionalist residences, the villas were one- or two-story residences of brick or wood, featuring a more freely designed volume and open plan structure. It was also characteristic to install a couple of small units for rent in the attic because of the housing shortage.
- Small multi-family buildings for 2 to 4 families were an intermediate option between single-family homes and larger apartment buildings characteristic of Kaunas Modernism. The owner of a two- to three-story building usually resided in one of its apartments, renting out the other units. These types of residential buildings can be found both in the city center and on more remote urban streets.
- Three- to six-story, large apartment houses were usually developed according to the urban pattern of regular blocks. In residential districts, modernist apartment houses, not large blocks of flats, predominated. The owner of a building resided in one of its apartments, renting out the other units. Buyers of land in the city center embraced innovation in architectural and construction technology and favored high quality materials, bringing new, modern, and comfortable residential buildings to Naujamiestis.
- Inexpensive wooden tenement houses that were constructed in parts of Kaunas not subject to brick development requirements were usually simple two-story, corridor-system buildings with four to eight flats and brick firewalls. Built at almost half the cost of brick buildings, this type of housing came to embody the Kaunas version of affordable housing. This type proliferated in Žaliakalnis, shaping an authentic character of mixed development comprising wooden and brick architecture.

Several more ambitious initiatives to construct multi-unit social housing were undertaken in the late 1930s. An inter-agency commission on affordable housing construction, established within the Ministry of Interior in 1938, acknowledged that city workers needed sanitary housing at affordable prices. Several housing co-operatives were established by employees, however, this form of housing was rather rare in Kaunas. Modernist housing ideas were promoted by the Bauhaus-trained Vladas Švipas in his 1933 publication *Miesto gyvenamieji namai* (Urban Residential Housing). These new types of houses came to define

the modern standard for housing. Because of the large number of house construction, it became a characteristic attribute of Kaunas Modernism.

3.4. Kaunas Modernism: Plurality of Modern Architecture

European Modernism of the new states cannot be understood merely as a style, but must be placed within a specific social and political context. Kaunas Modernism exemplifies a period of intense development and architectural experimentation in the modernist idiom combined with the search for national or local expression. The majority of the new buildings erected in Kaunas from 1919–1939, bear witness to the plurality of modernism. The various architectural movements of this period demonstrate distinctive interactions with and debates over national style, ranging from the modern interpretations of historical styles to international modernism [35].

The architecture of the 1920s developed in three directions:

- by appropriating folk heritage;
- by transforming historical forms and attempting to imbue them with a degree of Lithuanian national character;
- by acquiring modern design ideas from abroad, principally Germany, which could meet the financial capacity and needs of local clients.
- An evident stylistic and functional shift occurred around 1930 as a result of three conditions:
- the emergence of a new generation of urban residents comprising a large proportion of young people wishing to live modern lives and with sufficient financial means to become architectural clients in their private and professional lives and the government-financed sector;
- the need to visualise a collective identity, which was accelerated by the celebration in 1930 of the 500th anniversary of the death of Vytautas the Great, the mediaeval ruler of the Grand Duchy of Lithuania, through representative architectural projects [36];
- the professional coming of age of a new generation of architects who were much more accepting of modern architecture than their senior colleagues. Under these conditions, the drive to create an image of a modern capital became one of the principal motivations for creating the city's modern urban environment.

In Modernist Kaunas it is possible to observe how architectural styles of historicism changed into Modernism with a specific notion of national style in two decades (1919–1939). Unlike most new cities and other well-known modernist sites established in the early 20th century, Kaunas was created by local architects. In the late 1930s, almost 60 architects of the registered 400 were trained in Western and Central Europe. Because of the lack of native architects and the national school of architecture (which was only developed in the 1930s) state-sponsored training of architects in different schools of Western Europe [37]. This meant that in the early 1930s, Kaunas became a place where the ideas of European modernism were absorbed, reinterpreted, and put into practice, representing the unique plurality of Modernism. Locally conceived ideas were just as important for the perception and representation of the phenomenon of modern architecture as the ideas promoted by renowned schools of architecture and the work of celebrated international architects. The attributes that illustrate the described processes can be seen in Table 9 and the following textual explanation.

Table 9. Attributes that illustrate the Kaunas Modernism and plurality of modern architecture.

Thematic Groups Attributes	Types of Attributes	Protected Attributes
Kaunas Modernism: Plurality of Modern Architecture		
A National Style	Architecture: Modern buildings in combination with national style	Buildings of modernist architecture with a notion of the national style listed on the Cultural Heritage Register; their physical form, fabric, and function, according to individually defined attributes.

Table 9. Cont.

Modern Interpretation of Neo-Classical Architecture	Architecture: Modern buildings in combination with neo-classical style	Buildings of modern architecture based on neo-classical style listed on the Cultural Heritage Register; their physical form, fabric, and function, according to individually defined attributes.
Local Interpretation of International Modernism	Architecture: Modernist buildings represent a plurality of modernism	Buildings of modernist architecture characteristic to Kaunas listed on the Cultural Heritage Register; their physical form, fabric, and function, according to individually defined attributes.

3.4.1. A National Style

Art historian David Crowley has observed an interesting feature of the new nations that emerged from Europe's post-imperial era after the First World War, because "they were among the first to experience and embrace modernism as the basis of a new national architecture" [38]. Yet, these nations faced the common dilemma of reconciling novel expressions of both architecture and national identity. In the 19th century, national movements were based on folk arts and crafts in need of making local cultural heritage.

The creation of a national style, which was expected to be unique, combining the national idiom and historic as well as folk heritage, became a central component of Lithuanian architecture from 1918. It was important for the nation state to base its deep genealogy in historical statehood—the Grand Duchy of Lithuania and the Lithuanian-Polish Commonwealth. Baroque style was also considered an important source of inspiration for the nascent Lithuanian national style for its association with the Catholic Church and the abundant Baroque architecture legacy in Vilnius [39].

Despite political support, a significant number of architects and public figures viewed the creation of a national style with scepticism. Younger architects were convinced that the Lithuanian style should be defined by the present. In blending the cosmopolitan (style) with the vernacular (materials, methods, and ornamentation), Kaunas Modernism reflected the reconciliation nationally of the progressive and the retrospective, the transnational and the native. This approach produced landmark buildings designed with modernist exteriors and interiors decorated in the national style, Figure 5.

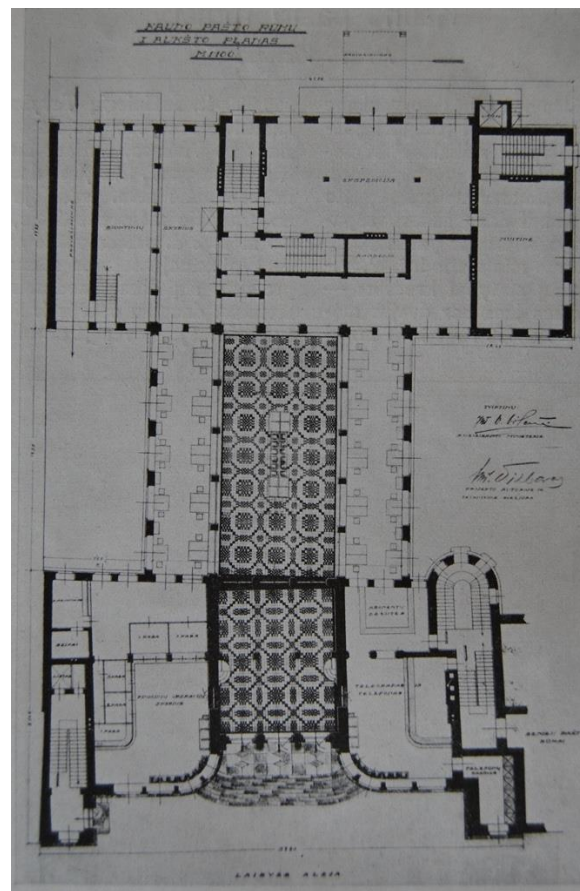
3.4.2. Modern Interpretation of Neo-Classical Architecture

In the 1920s, and often also in the 1930s, the aesthetic expression of landmark sites in Kaunas was intrinsically linked to Neo-Classicism, which satisfied the demand for a certain monumentalism of public buildings. Traditional aesthetics were familiar and therefore less unsettling when the discussion turned to representational needs. In the construction of the Bank of Lithuania and its residential building and the Ministry of Justice, modernized Neo-Classicism was intentionally deployed to declare the country's new economic ambitions.

Most of the public buildings in Kaunas combined international modernism and Neo-classical architecture, which was considered both sufficiently modern and monumental. At the end of the 1930s, modernized Neo-Classicism, known also as Neo-Traditionalism or State Modernism, began to emerge in the public buildings of Kaunas. Lithuania experienced the consequences of the World economic crisis, and was looking for stability, which was usually expressed by more traditional aesthetics. Military instability in the region generated insecurity. The Lithuanian Officers' Club or the Chamber of Commerce, Industry, and Crafts were presented as symbols of the vitality and wellness of the state, Figure 6. In both their composition and tectonics, these types of structures possess their own unique interplay of the modern and the classical. Indeed, this neo-traditionalism referred to as 'State Modernism' actually surged, as it occurred in many authoritarian European countries at the time.



(A)



(B)

Figure 5. (A) National Modernism featured a combination of modernism with the vernacular, as in the concrete window details of the Central Post Office that resembled the vernacular wood carvings of architect Feliksas Vizbaras. Photo: 1930s, source: Lithuanian Central State Archives. (B) The traditional village weaving pattern in the ornamental flooring in the lobby and transaction hall of the Central Post Office interior, 1930. Source: *Technika ir ūkis*, 1933, no. 5.



Figure 6. The Chamber of Commerce, Industry and Crafts, designed by architect Vytautas Landsbergis. Photo: Vytautas Augustinas, 1938, source: Lithuanian National Museum (published with permission).

3.4.3. Local Interpretation of International Modernism

By the 1930s, the characteristic architecture of Kaunas Modernism was formed. It was an intermediate path of high-quality modern architecture harmoniously assimilating local attributes. Kaunas Modernism was based on solid geometric forms, but the local interpretation of Functionalism confidently embraced ornamentation such as vertical and horizontal wall details, openings, entrance ways, and other door and wall décor. New structures were still just as rich in representational detail as more historical examples [40].

A large number of private construction produced a number of luxurious apartments and private villas that favoured decorative aspects of modern architecture associated with Art Deco and Streamline Moderne. It was introduced into modern façades through the use of variously shaped windows and balconies: corner, round, and rectangular. This constellation of architectural details helped create an especially rich interplay of light and shadow. Traditional approaches to decoration were also evidenced by the practice of adorning only the principal façade, as if to present only the good, official face of the building to the city. Meanwhile, simple, unadorned rear façades with modest service staircases rarely received much attention.

Flat roofs competed with traditional pitched variations. Flat or partially flat roofs were considered unsuited to Lithuania's climate. It was therefore decided that homes built on hillsides would be more attractive with pitched roofs covered in ceramic red tiles. A special roof type characteristic of the Kaunas Modernism was thus established. Roofs were usually a conventional hip, cross-hipped, or combination roof (30 to 45-degree angle) with

a special low sloped bottom (15-degree angle). Modernist architects favored low sloped roofs concealed by high horizontal cornices and parapets aiming to give the appearance of a flat roof.

Local materials brick and wood, as well as new material cement were used extensively, whereas concrete tended to be reserved for the construction of bridges and industrial sites and was rarely utilised creatively in public architecture. There was relatively little use of stone, though granite was a favoured material for façade ornamentation, particularly light or dark grey and sometimes brown, featuring various warm tones from yellow to almost red. There are also examples of plaster combinations featuring a wide colour palette. Metal was used and invariably produced by local workshops and craftsmen. Bronze was popular for more refined detailing and ornamentation, while stainless-steel was used for fences, handles, balcony railings, and other ornamentation. Wood was used extensively in the finishing of interiors. This was invariably locally sourced and stained or painted black for a different effects. Floors were finished with parquet in residences, with ceramic tiles popular for more general use.

Wooden modernism, as an economical replication in wood, sought to interpret modernism, creating an outstanding example of Kaunas Modernism characterized by the harmonious integration of local and international conditions. Unusually for wooden architecture, houses in the 1930s had corner windows and horizontal cladding in deference to modernism which, along with the sloping roof, became characteristic of Kaunas Modernism.

New architectural forms and traditional techniques were used in a way that would enable architectural modernity to become a part of the Kaunas *genius loci*, to give a new stimulus for development but also to be harmonious with the tradition of the city with its centuries-old history. It is interesting to note that villas in the spirit of interwar modernist forms continued to be built in the 1950s and 1960s. This appropriation in the Soviet era is a testament to the resilience of local construction traditions in Kaunas architecture.

4. Conclusions

Modernist Kaunas is a place that today best represents the urban transformation of interwar East Central Europe due to its authenticity, integrity, and concentration of variety of modernist buildings (both in terms of typology and styles). The overall process and urgency of the provisional capital resulted in evolutionary, rather than revolutionary, urban development, and produced a compact, integral, and perfectly preserved modernist city with clearly identifiable layers of Naujamiestis and Žaliakalnis (complemented with a historic layer of the old town and surrounding layer of the socialist period), both representative of political and architectural processes in new Europe, as well as special and unique attributes set in an impressive geomorphological setting and bearing an outstanding collection of diverse modernist buildings constructed for the purposes of the capital city. To represent these values, three groups of attributes were formulated, based on the comparative analysis and the methodological twentieth-century historic thematic framework (2021): urban sustainability, optimistic construction of the capital city, and plurality of modernist architecture.

The attributes of Modernist Kaunas were defined with an aim to cover a broader cultural significance than a selection of certain built elements or structures. The unique set of functional interactions and visual associations formed an essential layer of values that distinguishes Kaunas as a city that is simultaneously modern and sensitive to its existing historical and natural surroundings. Modernist Kaunas provides a dialogue between the existing city with its deep historical associations and the imperative to create a new capital city possessing a new urban infrastructure and capable of meeting the demands of a rapidly changing modern world. These processes highlight the optimistic mentality of a new and aspirational country and the ambitious expectations associated with the vision of a new capital city and modern architecture, while acknowledging and harmoniously incorporating the deep traditions of the city and those of the country it had to serve.

It can be concluded that a study of Eastern European modern urbanity enhances the understanding of the modern global city and also adds a strong argument to the current international debate about different modernities. Modernism can be defined today not as a unified rationalist project or a doctrine but rather as a particular experience of change, conscious of past achievements and failures. Modernist Kaunas demonstrates that modernity is plural in character and that it learned from the traditions within which it developed. In the 21st century, Kaunas' urban, architectural, and landscape heritage is a testament to this comparatively fleeting yet transformative period.

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