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Research Article

ASSESSING BUILDING TYPES TO TRACE THE EVOLUTION OF URBAN FORM

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Abstract
Since Tirana became Albania's capital, its urban transformation has reflected the ambitions and ideologies of successive governing regimes. This study examines the city's architectural and morphological evolution, analyzing how political, social, and economic shifts have influenced its urban fabric from the 1920s to the present. The research employs a historical and morphological analysis of Tirana's urban form, integrating insights from urban theorists such as Whitehand, Oliveira, and Dovey. It reconstructs the city's development by categorizing architectural typologies across five key historical periods. Archival research, spatial mapping, and case study analysis of representative buildings and planning policies form the core of the study's methodological approach. The study reveals that Tirana's urban transformation is marked by phases of expansion, socialist central planning, and post-communist redevelopment. Each governing regime has imposed distinct planning strategies, ranging from rigid, state-controlled designs to contemporary neoliberal densification policies. Recent urban planning documents advocate for extensive demolition and reconstruction, often at the expense of traditional urban structures, raising concerns about heritage preservation and socio-spatial justice. This research provides a critical reassessment of Tirana's urban development by integrating historical and contemporary urban planning perspectives. It highlights the city's transition from a fragmented town to a contested urban landscape shaped by ideological shifts, offering new insights into how political narratives manifest in architectural and planning practices. The study underscores the need for a balanced approach that preserves historical identity while accommodating future urban growth.

Keywords: Building Type, Morphology, Traditional Structures, Urban Form.

INTRODUCTION

Albania's historical narrative shapes an interesting cultural context. This research focuses on Tirana, a city in continual transformation, where shifts are evident not only in urban design but also in the architecture and experience of private buildings. As the capital, Tirana bears a unique

representational responsibility, playing a crucial role in defining the national image. Commitment to shaping its urban spaces reflects a broader ambition to create a cohesive expression of national identity.

For over a century, Tirana has served as a laboratory for urban experimentation (Bulleri, 2012), absorbing diverse influences from its Ottoman legacy to the Italian Fascist, Soviet, and Chinese revolutionary ideologies. Each regime's strategies have left visible imprints across the city's landscape, including public spaces, residential complexes, and government buildings. These ideological shifts have profoundly influenced Tirana's spatial organization, resulting in a relatively new city characterized by rapid, successive transformations (Bulleri, 2012; Islaihah, 2024; Puspitasari, 2024; Somantri, 2024). Urban design and planning have consistently mirrored the prevailing ideologies, and today, Tirana continues its search for a distinct identity in a prolonged phase of transition.

The communist regime brought sweeping changes to Albanian life, transforming traditional cultural practices and reshaping urban and architectural norms. Italian cultural influences, embraced by residents without significant opposition, also contributed to this evolution. However, the communist government's "cultural revolution" dramatically altered civic and spatial practices, promoting a new lifestyle both inside and outside the home (Aliaj, 2003; Habiburrohman, Supartini, & Onchera, 2024; Sunia, 2024). Pre-World War II housing in Tirana typically consisted of low-rise, single-family homes, while the communist era introduced collective housing structures of four to six floors with minimal apartment sizes and an architectural shift that reflected broader societal changes.

Despite the attempts of local institutions for urban regeneration, in the last fifteen years, they have failed to find a solution to these problems (Bulleri, 2012; Repriani et al., 2022; Nahar, 2023; Nwune, Oguezue, & Odum, 2023). The central and local governments have organized over fifty international competitions. International architectural studios called by the government and municipality proposed solutions for the city. The last 20 years have been the period of large international projects, which are changing the face of the city, making it a sort of open-air laboratory. Then, the question of whether it is possible to reconstruct the identity of the city or consider the city as a "tabula rasa" arises (Aliaj, 2003).

Urban form theory is a branch of urban studies that explores cities' physical characteristics and spatial patterns, such as their size, shape, layout, density, and configuration. Urban form theory also examines the factors and processes that influence the formation and transformation of urban form, such as history, culture, geography, economy, planning, and design. Urban form theory aims to understand the relationship between urban form and urban function, as well as the social, environmental, and aesthetic implications of urban form (Kiss, 2016; Aryadi, Sudaryono, & Karim, 2022; Nada et al., 2023; Ulfa et al., 2023). Conzen and Whitehand are two influential scholars in the field of urban morphology, the study of the form and structure of urban areas. The former adopted the concept of morphological periods to describe the historical phases of urban development that are reflected in the physical form of cities. Conzen defined a morphological period as "a period during which the general character of the town plan, or a major part of it, was generated or transformed under the influence of a specific set of cultural and natural forces" (Conzen, p. 5). Whitehand built on Conzen's work and established the historic-geographical approach to urban morphology, which emphasizes the role of historical processes and human agency in shaping urban form. The Italian school of urban morphology emerged with Saverio Muratori who introduced the concept of building typology while studying the process of formation and transformation of urban form. Based on his work, Caniggia and Maffei explored the relationship between architectural composition and building typology (Cataldi, 2002; Halimah et al., 2024; Melinda, Feizi, & Monfared, 2024). There are different approaches and perspectives in urban form theory, such as the historical-geographical approach, the process typological approach, the space syntax approach, and the spatial analysis approach (Kropf, 2009; Oliveira, 2016; Rachmanto, & Akande, 2024; Simamora et al., 2024). Each of these approaches has its concepts, methods, and tools to study and analyze urban form, as well as its strengths and limitations. Kropf (1996) argues how urban tissue analysis can help to understand the formation and transformation of urban form over time and space. This research aims to assess the evolution of the urban form of the city in different historical periods with a diachronic approach.

This study of the morphological characteristics of Tirana's current urban patterns through urban form provides a deeper understanding of the city's physical evolution. Examining urban form allows us to discern both what can not be done and how to do things better, contributing to a more effective and holistic approach to urban management. By tracing the evolution of Tirana's urban morphology, this research enriches the ongoing discussion on preserving traditional structures (Kumaraku and Prifti,

2024) and offers insight into the reasons behind the city's limited historical fabric. Enhancing our understanding of Tirana’s existing urban tissue is critical to guiding informed, sustainable development in the future.

RESEARCH METHOD

The paper utilizes diverse tools such as maps, aerial photographs, satellite images, and statistical data to analyze the city's transformations. By identifying and classifying various morphological models, the research aims to understand how urban form has evolved, focusing on the relationship between urban context, design period, and the scale of transformation between the city center and its surroundings.

The aim is to put the physical characteristics of urban plans in social and political contexts and study the morphological aspects of the current urban patterns through elements of urban form in Tirana based on the work of Whitehand, Oliveira (Whitehand, 2014; Oliveira, 2016; Dovey, 2018). This paper will try to reconstruct the evolution of the urban form of Tirana by analyzing the evolution of building typologies, starting from the traditional tissue to the present. The research points out different periods of architectural and urban design and divides interventions into morphological typologies according to the type of building (Figure 1) based on the urban context, design period, and scale of transformation between the city center and surroundings. Tirana's urban form evolution is divided into five key periods, each marked by unique architectural and urban design features. These periods are identified by analyzing building types, which highlight the impact of various interventions on the city's morphology. The paper categorizes these interventions into specific morphological typologies, based on factors like building type, urban context, and the period of design. This classification helps in understanding the different stages of urban transformation. To illustrate the evolution of the urban form, the paper includes graphic representations of the elements of urban form, such as buildings, streets, and plans, for each period. This visual analysis correlates with changes in building technology and highlights the dynamic development of Tirana's urban landscape. (Figure 2).

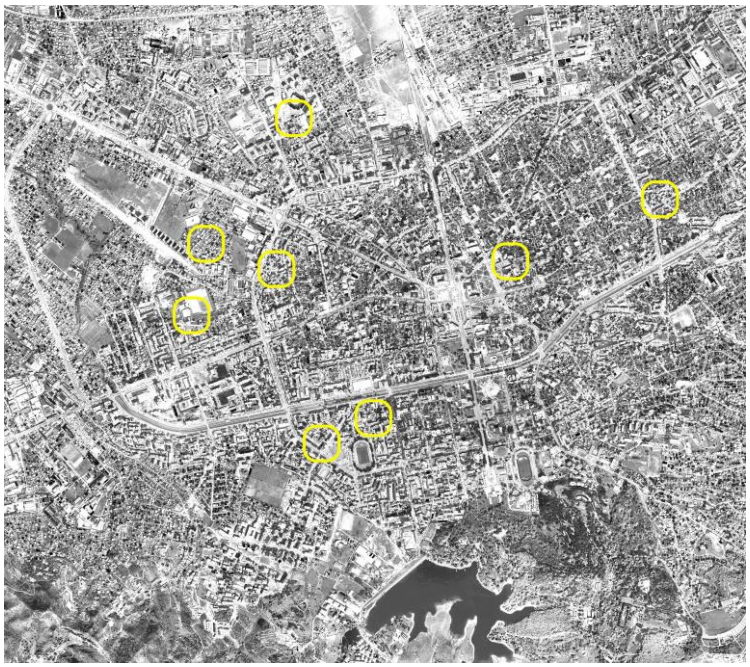

Figure 1. Location of case studies in Tirana

RESULTS AND DISCUSSION

Our research presents the experimental results passing through used numerical methods. We use the comparisons of methods for time and dicplacement. The numerical approaches depicted include the Central Difference Method, Constant Acceleration Method, Average Acceleration Method, Linear Acceleration Method, and Wilson-Method. By experimenting and simulating, getting graphic results and comparing them, we give a very clear idea about the methods used and compare them, analyzing

and drawing the appropriate conclusions of our research. Figure 7 shows a comparison between a theoretical solution and various numerical techniques used to approximate the time-displacement relationship of a physical system.

During the First World War, a few years after the proclamation of Independence from the Ottoman Empire, Albanian cities had exceedingly small dimensions and a typical urban fabric of the Ottoman culture of the nineteenth century. While European cities marked the period of major urban reconstruction, implementing redevelopment practices, urban renewal, and new languages for designing large areas, the development of Albanian cities was completely abandoned to spontaneity. Disorder and order at the same time prevailed in urban tissue. Professor Maurice Cerasi, searching for distinctive characteristics of the Ottoman housing typology, highlights the uniqueness of the structure of the Ottoman city. According to him, the typical Ottoman houses represent organizational units of low density without the necessity of having a large courtyard (Cerasi, 1998; Binti M & Adeshina, 2024; Muis, Pholboon, & Kamali, 2024). Houses are aligned to the road and try to take it over, occupying a part of it on the upper floors. The facades are not continuous, and the alleys that lead to dwellings are perpendicular to the main road. The urban structure appears chaotic due to the dispersion of houses that do not follow compositional principles but adapt to the orography of the territory with forms open to good sunshine. They represent an extensive typology that opposes the Mediterranean organizational mode of Hortus clauses (Cerasi, 1998), (Miho, 2003). In 1920, the population reached 15,000 inhabitants, an extension of 305 hectares, and a population density of fifty inhabitants/ha (Aliaj, B. Lulo, K. and Myftiu, G., 2003). According to architect Koco Miho, the “medieval extensive system” has caused issues of land ownership. The location and orientation of the houses did not consider the road axis and were often set back from the road boundary (Miho, 2003; Kiel, 2012; Abdaoui et al., 2024; Sulthon et al., 2024; Wirnayanti, Craig, & Malatjie, 2024). In the long run, when the profession of the architect or urban planner was unknown, the task was carried out by an officer in charge of solving problems and proposing urban planning solutions, who was called “building aga” (Baçe, 1979).

Since the First World War, a few years after the proclamation of independence from the Ottoman Empire, Tirana city had these features:

- small size
- an urban fabric typical of 19th-century Ottoman culture
- chaotic urban structure due to the dispersion of the houses that did not follow ordering principles but adapted to the orography of the territory with well-oriented open forms (Cerasi, 1998, p. 119).

The residential buildings of Tirana were built between the XVIII century and the end of the XIX century. Based on the composition and functional structure of the dwellings in Tirana, the building typology evolved with a firehouse located in the center. It represents an adobe building and is developed on two floors (Riza, 2009, pp. 113-125) (Riza E., Zheku, K., 1971). A graphic analysis of plots/streets/units in this period is represented in Figure 2.

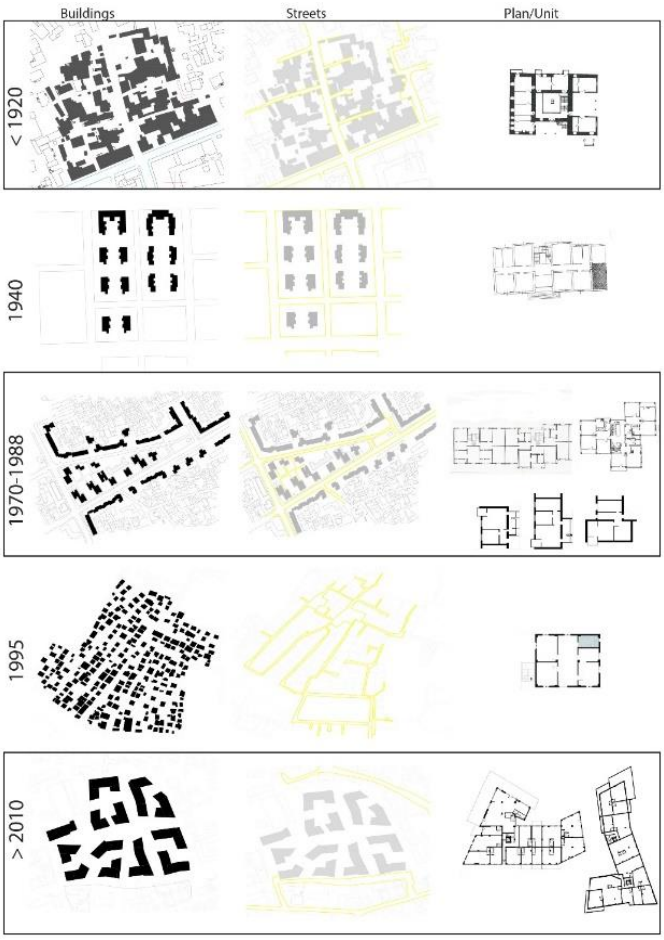

Figure 2. Development of urban form

After signing the Pact of Friendship with Italy in 1926 (L'illustrazione italiana, 1939, p. 713), Italian architects were invited to deal with urban planning and architecture in Tirana. Their work leaves an Italian imprint on Albanian cities. The integration of the existing city with the new part of the city is one strategy adopted by rationalist architects to preserve historic fabrics. Brasini ignored the presence of Islamic architecture in the immediate areas and neglected the integration of architectural languages in the new intervention (Aliaj, 2003). The period between the two World Wars represents the moment of breaking up with the past from an urban and architectural perspective. The capital's bourgeoisie tended to value the projects with an eclectic style as it met their needs for aesthetic qualities.

The writer Gustavo Traglia wrote about Tirana about how fast the city was transforming in 1930. 'How do you live in Tirana? Good. In this city, you witness an awakening of activity that cannot fail to impress. Assiduous daily work has characteristic expressions. Then, there is a state that is formed, there is the struggle between the old, conservative mentality and the new one that is in a hurry to act and which, to act quickly, sometimes falls into the inevitable errors of which hastiness is the mother.' (Traglia, 1930). While in Europe every country manifested avant-garde artistic styles, other approaches were proposed in Albania's artistic style of the twentieth century. The construction of several administrative buildings, in a certain sense, imposed eclecticism also on projects for private buildings. All the proposed architectural elements have nothing in common with the tradition of the country. In Bushati's opinion (Bushati, 1988, p. 181), the aim was to 'find the beauty in monumentalism in the forms and the eclectic details. These traits add up without a principle, like an amalgam, failing to create our physiognomy'.

The group of planners led by Bosio divided Tirana into three areas with different densities: intensive, semi-intensive, and extensive, with the intention to redesigning the city toward the west in opposition to the inherited spontaneous city. The extensive area was the garden city, a highly appreciated movement in Italy during that period. The idea of the garden city was in line with the structure of the existing city. I.N.C.I.S district, housing for state employees who would be relocated to Albania, was designed by Gherardo Bosio and Piero Bartolini and composed of 16 large buildings,

block type, organized on two levels, with an internal courtyard (Valentin, 2016) (Dossier, 2012). The works were interrupted by the coming of the war in September 1943, by the arrival of German troops. A graphic analysis representing this period in plot/street/units can be found in Figure 2.

Based on a detailed analysis of the historical events that have affected art and architecture and considering the statements of Faja (Faja, 2008) and Kolevica (Kolevica, 1997) in their books, this long period can be conceptually divided into three key periods that influenced the conformation of the urban space: Adherence to the socialist realism of the Soviet Union for almost a decade (period starting from the early 1950s to the first from the 1960s); A silent search for modern movement lasted for a decade (beginning after the break with the Soviet Union until 1973); Toward a national form with ideological content (until 1990, with the fall of the regime).

In 1950, the city of Tirana counted almost 100,000 inhabitants (Vickers, 2001, p. 180). The economy was mainly based on agricultural activities and handcrafted products. The existing buildings suffered serious damage during the war, and there were no financial resources for rehabilitation interventions. With the establishment of the dictatorial regime of the proletariat, a new era of architectural and urban approaches began. According to Crowley and Reid (Crowley, D., Reid, S.E., 2002, p. 3), the nationalization of land indicates that space was subject to political interest. Knowing what kind of space praises certain totalitarian regimes helps us understand the reason for choosing certain transformative interventions (Vale, 2008).

Socialist realism brought new ways of conceiving the space inside and outside buildings to Albania. The few completed projects were influenced by the architectural style of the Soviet Union during the 1920-1930. The slogan ‘socialist in content, national in form' sets the model for all fine arts. Anatole Kopp (Kopp, 1987, p. 234), in his study about architecture and urban planning in the Soviet Union during the twenties, claims to notice an 'absolute necessity of monumentalism, of simplicity, unity, and elegance in architectural expression and time itself of the need to rely on both new compositional procedures than to those used by classical architecture’. The urban space follows the rational and monumental criteria. The proposed urban model was based on linear buildings arranged along the main axes of transit. The Stalinist regime encouraged the construction of large buildings that could serve as a demonstration of political power (Crowley, D., Reid, S.E., 2002, p. 8). The architecture was influenced by imported styles. The architecture was strained with ideological violence. Kolevica (Kolevica P., 1997) claimed that the voice of the architect was a *vox ciamans* in the desert. The use of capitals, frames, and decorations was external to the tradition of the country.

The foundation of the new cities and the reorganization of the existing ones had to take place based on the return to nature. This concept of eliminating the differences between cities and the countryside can be noticed in the realization of the same urban interventions, without morphological and typological distinctions, in rural centers (Kopp A., 1987). The city was designed on an orthogonal network, with the main street connected to a road network. The compositional unit of the block had the shape of a rectangle and a large size where the buildings could float freely. The proposed building typology was the linear type. Almost all the buildings were arranged on the territory in such a way that they created a continuous alignment with the main road. The scarce development of building technologies did not allow the construction of several levels above ground level. Based on projects and building plans survey, the residential buildings of Tirana between 1955 and 1965 had five distinctive features visible in the urban structure:

- the spatial configuration and linear typology
- two section buildings, two apartments per floor plan
- the materials: load-bearing thick walls, up to three-story buildings
- the pitched roof and basement plan
- the compositional unit: the large block with green spaces
- garden city approach

After the ideological detachment from the Soviet Union, which took place after 1960, the figure of the architect has always been able to experiment with other architectural styles consistent with the system and under close observation. The dictatorial regime was very centralized and leaned toward urban operations, ignoring private property, with architects and planners enjoying the freedom of revolutionaries to transform everything.

Many architects with foreign professional degrees followed with interest in the European events on architecture and CIAM activities. Finally, although silent, not declaring the belonging of the style, in

art and architecture, one could be free without suffering physical, moral, oppression, or violent censorship. There was the freedom to apply the principles of modern urban planning and the Charter of Athens (Faja, 2008, p. 14). Modern architecture has become part of the urban fabric without any noise, without being declared, and without any approvals. The residential buildings had these distinctive features visible in the urban structure:

- a folded facade;
- bearing brick wall;
- up to five-story buildings;
- three apartments per floor plan.

In 1973, at the IVth Plenum of the Central Committee of the PPSH Party, the topic was identified and discussed as a vital emergency to deepen the ideological war against foreign influences and liberal attitudes toward them. Communism has declared war on modernization in architecture and freedom of artistic expression. The slogan 'socialist in contents, national in form' depicted the model of all the figurative arts. With the creation of architectural types and standards, architecture and urban planning became monotonous in urban spaces and landscapes. Quality, materials, and above all, freedom of artistic expression were completely absent (Faja, 2008), (Kolevica, 1997). The denial of the right to private property was sanctioned by the constitutional amendment of 1974. The government proposed the need for architecture with clear and simple forms under the motion “keep costs down, build well and quickly.” Discussing the costs became essential, given the economic crisis that the country was going through.

With the growth of the population, the housing demand has increased. It was required to build as fast as possible. Linear buildings with multiple section schemes were studied and investigated to minimize construction costs. To contain costs, prefabricated concrete panels were proposed. External walls without plaget created rough facades. Residential buildings without plaster and color had brick textures or cement panels left visible to the naked eye. The use of plaster was limited. While other European states responded to the housing emergency with high-quality architectural proposals as opposed to the quality of the materials, in Albania, the figure and the work of the architect have been devalued as they have fallen into uselessness. Housing experimented with "typing" and "standardization". Researching the types of housing units, they needed to propose themselves ‘in series', which had as their objective to achieve equality. The apartments were distributed according to the number of nucleus members of a family. Standardization also included the architecture of social buildings. All this created a standard and monotonous architecture, poor in form, materials, equipment, and technology (Al Hasani et al., 2021), (Bidaj et al., 2023). The use of collective housing eliminated private housing or other typologies. Buildings with prefabricated panels were built to overcome residential emergence. Every section had 2 apartments per floor plan. They were built with load-bearing panels reinforced with concrete skeleton structures (Deneko et al., 2023), (Hysenlliu et al., 2023) and (Saad et al., 2023).

- more flexibility to determine the length and continuity of a building;
- experiment with new urban forms;
- more space for the apartments;
- pointing out interest in public spaces more than private spaces.

Buildings divided into units were built from 1989. They were designed to break the uniform facade and plan of the building type. The different combinations of units give, as a result, a different floor plan for the section. The different combinations of each section could bring a different shape to the building. Construction techniques are specified in Figure 3 for each building type. A graphic representation of this period can be found in Figure 2.

After the fall of communism and the start of land privatization, Tirana has gone through a period of rapid urban expansion, which has generated an unprecedented explosion of informal settlements. With the liberalization of internal migration, citizens began to migrate immediately to major cities, and the capital was the preferred destination (Stanilov, 2007). Two main factors can be highlighted as contributing to the environment for illegal buildings and the spread of urban sprawl: first, the communist regime left behind a significant housing demand, and second, there was a clear failure by both central and local governments to control a situation where private property was not properly regulated. The urban space becomes a free ground for any possible development decided by individuals. Everyone finds space or forcefully requests it, to delimit it with fences, occupy it with sales structures, or for residential use. In Tirana, the anti-sprawl "movement" was born spontaneously (Faja, 2008).

After an initial period in search of free land in the city suburbs, the interest of the builders is concentrated on the land close to the center, aiming to take advantage of the differences in the land rent. This long process was triggered by both the privatization of publicly owned plots and the re-appropriation of private properties. The lack of programming document territory has favored the expansion of legitimized urban planning practices. The result of this process is the overwriting of existing fabrics without principles or rules or blatantly violating the few zoning rules prescribed in the 1998 law. As Faja (Faja, 2008, p. 13) states, 'In this period, everyone dealt with architecture and urban planning, except the architects'. The problem of contemporary architecture is that it produces the same artistic solutions in diverse cultural situations of the world, with different traditions but in distant geographical positions.

The latest Master Plan of the city was drawn up by the Stefano Boeri studio Architects and UNLAB and IND for "Tirana 2030" (www.tirana.al). The plan was adopted in January 2017 and was characterized by the vision of creating a polycentric kaleidoscopic metropolis that constitutes the new image of the city. The municipal administration will make use of densification techniques to aim for compactness. One of the strategies that was proposed for this purpose in Grimshaw's Architects plan is urban densification.

<table>
<tr><th></th><th>Before 1920</th><th>1920-1940</th><th>1958</th><th>1977</th><th>1980</th><th>1982-1983</th><th>1988</th><th>>1990</th><th>>2000</th></tr>
<tr><td rowspan="4">Design</td><td>1-2 floor plan</td><td>1-3 floor plan</td><td>2-3 floor plan</td><td>5-floor plans</td><td>5-floor plans</td><td>5-6 floor plans</td><td>5-floor plans</td><td>2-3 floor plans</td><td>>8 floor plans</td></tr>
<tr><td>> 4 rooms</td><td>3 rooms</td><td>3 rooms</td><td>3 rooms</td><td>2-3 rooms</td><td>2-3 rooms</td><td>2-3 rooms</td><td>3-4 rooms</td><td>2-5 rooms</td></tr>
<tr><td>pitched roof</td><td>pitched roof</td><td>pitched roof</td><td>flat roof</td><td>flat roof</td><td>flat roof</td><td>flat roof</td><td>flat roof</td><td>flat roof</td></tr>
<tr><td>one family</td><td></td><td>2 sections
2 apartments x section</td><td>1 section
3 apartments x section</td><td>> 2 sections</td><td>1 section
3-4 apartments x section</td><td>> 4 sections</td><td>Individ.</td><td>> 2 sections</td></tr>
<tr><td>Economic assessment</td><td>Traditional/ cheap</td><td>quality</td><td>quality</td><td>cheap</td><td>cheap</td><td>cheap</td><td>very cheap</td><td>very cheap</td><td>medium-high quality</td></tr>
<tr><td rowspan="4">Technologies</td><td></td><td></td><td>assembled slabs</td><td>reinforced ceramic concrete slab</td><td>reinforced concrete slabs</td><td>reinforced concrete slabs
precast concrete slabs</td><td>reinforced concrete slabs</td><td></td><td></td></tr>
<tr><td>adobe/clay bricks</td><td>brick bearing walls</td><td>brick bearing walls</td><td>brick bearing walls</td><td>prefabricated concrete walls</td><td>reinforced concrete</td><td>reinforced concrete</td><td>reinforced concrete</td><td>reinforced concrete</td></tr>
<tr><td></td><td></td><td>span 3.65 m x 3.03 m</td><td></td><td>span 3.6 m x 4.8 m</td><td>span 3.4 m x 4.2 m x 6 m</td><td>span 4.95 m</td><td>span 4 m</td><td>span 6 m -8 m</td></tr>
<tr><td></td><td></td><td></td><td>anti-seismic</td><td>anti-seismic</td><td>anti-seismic</td><td>anti-seismic</td><td></td><td>anti-seismic</td></tr>
</table>

Figure 3. Characteristics of building typologies

CONCLUSION

Following the fall of communism and the advent of land privatization, Tirana entered a phase of rapid urban expansion, marked by an unprecedented proliferation of both formal and informal settlements. The city has since undergone substantial changes within brief intervals, continuing its quest to define a distinct urban identity. Analyzing historical data on buildings and urban development offers essential insights into Tirana's architectural landscape. Tirana's urban form has been shaped by a series of political regimes, from Italian rationalism to socialist realism, and later the chaotic growth following communism. The city's architecture reflects the ideological priorities of each era, from monumental socialist buildings to the more chaotic and informal developments post-1990. The recent focus on urban densification and polycentric growth seeks to address the challenges posed by rapid population growth and urban sprawl. In conclusion, the paper shows how the urban structure of Tirana has been shaped over time by various architectural and urban planning phases, highlighting the importance of understanding building typologies to grasp the city's urban transformation. This research contributes to understanding Tirana's urban form and supports the ongoing discourse on how to balance new development with the preservation of historic urban fabric.

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AUTHOR CONTRIBUTIONS

Single author contributions.

CONFLICTS OF INTEREST

The author(s) declare no conflict of interest.

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