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Functional and spatial transformation of the city of Geneva at the end of the 20th and beginning of 21st century

Przekształcenia funkcjonalne i przestrzenne miasta Genewy na przełomie XX i XXI wieku

Abstract

The article describes the functional and spatial transformation of the city of Geneva at the end of the 20th and beginning of 21st century. In the article was described the social and economic characteristics including labor market in the city of Geneva. The aim of the article was to answer the question: what was the most dynamic period of Geneva's development in terms of the number of people inhabiting this city in this period of time? What functional and spatial transformations in the city of Geneva have taken place over the last few decades and what is the dominant function of revitalized buildings in Geneva (cultural, financial or transport)?

Keywords: functional and spatial transformations, the city of Geneva, architecture of Geneva

Streszczenie

W artykule opisano przemiany funkcjonalno-przestrzenne miasta Genewa na przełomie XX i XXI wieku. Scharakteryzowano specyfikę społeczno-gospodarczą uwzględniającą rynek pracy w mieście Genewa. Celem artykułu było uzyskanie odpowiedzi na pytania: jaki był najbardziej dynamiczny okres rozwoju Genewy pod względem liczby ludności zamieszkującej miasto w tym okresie. Jakie przemiany funkcjonalno-przestrzenne w Genewie zaszły na przestrzeni ostatnich kilkudziesięciu lat i jaka jest dominująca funkcja rewitalizowanych budynków w Genewie (kulturowa, finansowa czy transportowa)?

Słowa kluczowe: przekształcenia funkcjonalno-przestrzenne, Genewa, architektura Genewy

1. INTRODUCTION

International organizations need buildings for their offices and conference space. The facilities built to host these organizations since the 1920s have profoundly transformed their spaces and the urban landscape of Geneva, which is consistently supported and facilitated by local and national authorities. The city strives to maintain a balance between farm and business facilities and single and multi-family residential buildings. Switzerland faces a number of policy challenges with regard to the hosting of international organizations. Most of these organizations now occupy buildings from the 1960s and 1970s. These older building stocks have deteriorated significantly due to heavy use of workplaces and conference rooms, coupled with a lack of regular renovation. In addition, competition between countries has increased significantly in recent years, increasing the risk that international organizations decide to relocate from Geneva. In response to these challenges, the Federal Council, the Canton and the City of Geneva adopted in 2013 a Joint Strategy for the International Future of Geneva, which focuses on meeting the real estate needs of international organizations. Maintaining the existing infrastructure in good condition is essential to maintaining Geneva's role as a center of global governance and multilateral diplomacy. The architecture and economy of this city are inspiring. Geneva boasts a beautiful location on the shores of Lake Geneva, with narrow streets around the old Bourg de Four square. Tourists in Geneva can admire historic buildings and interesting museums, including the well-known Museum of Modern Art, many beautiful parks and classical buildings.

The aim of the analysis taken in the article was to indicate the most dynamic period of Geneva's development and to answer to a question: what functional and spatial transformations in the city of Geneva have taken place over the last few decades, how do changes in the economy affect functional and spatial changes and what is the dominant function of revitalized buildings?

2. THE AIMS OF THE ARTICLE

The aim of the article is to present the changes in architecture and changes of the use of the buildings that took place in Geneva in the last four decades, i.e. in the years 1980–2020. In addition, the aim of the article is to answer the question: what was the most dynamic period of Geneva's development in terms of the number of people inhabiting this city, and to obtain an answer to the question: what types of buildings have taken transformations in the city of over the last few decades and what is the dominant function of analyzed building in Geneva (cultural, recreational, financial or educational)? The article uses the literature on the subject (analysis of scientific articles and book publications), analysis of statistical data and graphs containing data. The work also uses cartographic data and own observations from 2021 (field research).

3. LITERATURE DISCUSSION

Between 1995 and 2005 Geneva experienced strong annual demographic growth (from 1.3% to 1.4%). According to the analysis of M. Thebault, G. Desthieux, R. Castello and L. Berrah (2022) the Greater Geneva Agglomeration (GGA), which is a cross-border French–Swiss territory consists of almost 270 thousands buildings. The share of cross-border proportion in Geneva is about 34% (Sohn, Reitel, Walther, 2009). The metropolitan functional area in Geneva consisting of 741 thousands of inhabitants. According to P. Piguet, P. Blunier, M.L. Lepage, M.A. Mayer and O. Ouzilou (2011). Geneva nowadays has a small housing capacity for its population with the rental vacancy ratio is 0.17%.

There is recorded a high number of foreigners and binationals living in Geneva (27% binationals, 37% foreign inhabitants) (Gamba, Cattacin, 2021). This highly heterogeneous population is the result of the territory's history – “Cité de refuge” (Camisa, 1991). In Geneva it is recorded a high number of inhabitants working in international organizations and multinational companies Geneva is a state with a high population density, which doubles its population on working days (except pandemic times) (Mongin et al., 2022).

The State of Geneva is going to reduce its CO₂ emissions in its building sector by 45% in 2030 comparing to 2012 (*République et Canton de Genève*, 2018). Geneva is going to reduce its greenhouse gas emissions by 60% (Pratiwi, Trutneyte, 2021). The city has good geothermal conditions. Analysing by the method of thermal modelling (Chelle-Michou et al., 2017) and using geochemical data (Guglielmetti, Eichinger, Moscariello, 2020) it can be stated that there are area with from 25°C per km to 30°C per km, this predicts up to 150°C at the top of the basement in the southern part of the Geneva (Perozzi, Guglielmetti, Moscariello, 2021).

However it is important to consider the image of the city of Geneva as a financial and international centre. For K. Lynch (1990) the important question was what does the city's form actually mean to the people who live in the city? And how planner can make a city more memorable for the visitors? (Lynch, 1990). W. Ostrowski (1975) describes three patterns of functional and spatial structures: concentric-radial, band, checkerboard (network) (Ostrowski, 1975).

Analyzing the perception of space, K. Wejchert (1984) pointed out that city residents perceive objects as more expressive, “with a satisfactory form”, those that are regular and compact. Cohesive systems are more deeply embedded in the observer's memory (Tota, 2015; Wejchert, 1984). Many researchers have already dealt with the transformation of the functional and spatial structure (Warczewska, 2016). However the spatial structure of the city consists of overlapping layers: morphological, functional, spatial and social (Słodczyk, 2004). According to J. Runge (2018), the functional structure influences the dominant economic activities. The spatial structure reflects the diversity of morphogenesis and morphology of forms of use in the area. The demographic and social structure shows

population diversity. The authors have also repeatedly dealt with the phenomenon of revitalization and the management of the revitalization process. Revitalization is understood as a purposeful process of change that is aimed at social and economic purposes (Wańkiewicz, 2010). There are three meanings in foreign literature for the process, which are distinguished revitalization, regeneration and renewal (Kołsut, 2017: 29–46). However the idea of revitalization is showing the project of the Institute of City Development (2008). Revitalization is a coordinated process held by local government and community with other participants counteracting the degradation of urban space and crisis event improving the living conditions and protecting the national heritage with taking into account the sustainable development rule (Strzelecka, 2011: 661–668). Important issues is also that urban form is a key element in adapting existing cities towards “smart city” (Gorgol, 2018).

4. THE DEVELOPMENT OF GENEVA AT THE TURN OF THE 20TH AND 21ST CENTURIES

In this part of article the development of the city of Geneva at the turn of the 20th and 21st centuries was presented (more precisely in the years 1980–2022). The first industrialization followed by an explosion of inventiveness during the second industrialization (20th century). Switzerland is open to external technological models assisted by multicultural Switzerland and national issues that combine different aspects. The city of Geneva is establishing its planning tools with a set of planning documents and monitoring. The city administration creates new flats, public utility buildings and green areas. It also develops roads, public transport stops, pedestrian paths and a well-connected transport infrastructure. These projects require many exchanges with interested partners in order to achieve economically viable projects that satisfy the public interest. They are held in close cooperation with the cantonal authorities and are discussed by the City Council. The main political priorities of the city of Geneva are: a sustainable city that promotes the diversity of work and housing; builds housing and struggles with enormous demand and tries to create low-rent housing in order to adapt also to the lowest income among residents; maintains the diversity of populations, services, enterprises, activities and facilities; responsibility, which is revealed, mobility adapted to its location as a city center to its unique density and to the context of the agglomeration; a sustainable city, respecting its social, environmental and economic obligations. The city authorities emphasize their strengths as an international central city.

5. SOCIAL CHARACTERISTICS OF THE CITY OF GENEVA

The population of Geneva was changing greatly. In the 1960s, it amounted to 180 thousands inhabitants. The 1980s is a reduction of this number to the level of 155 thousand residents. Then a stable increase was recorded to the level of almost 200 thousands in 2020. Figure 1 shows the changes in the population number between 1950–2020.

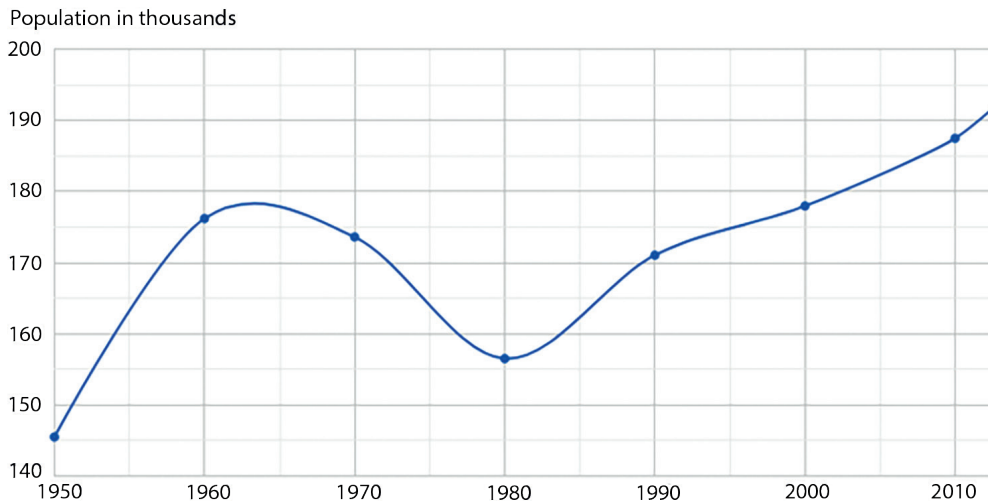


Fig. 1. Population in Geneva in 1950–2020 (in thousands). Source: www.bfs.admin.ch/bfs/en/home/statistics/regional-statistics/regional-portraits-key-figures/cantons/geneva.html (date of access: 2022/06)

From April to June 2022, the population of the entire Canton of Geneva increased by 644 (an increase of 0.1%). The growth is therefore much weaker than in the two previous quarters. Within one year, the increase was 0.8% (+3.9 thousands people). At the end of June 2022, the population of the canton was 514 thousands people. However in the core-city of Geneva in 2021 there was 203 856 permanent population (*City Statistics portraits 2022: core cities*, 2023). The most dynamic growth of the population of the city Geneva was in the last two decades of the XXI century (especially the last decade 2010–2020).

On average, in the years 2016–2020 and 2011–2015 the number of people with a migrant origin increases by 25.6 thousands people, while the non-migrant population remains stable. The number of naturalized people increased the most (+14.8 thousand people), in particular due to the period of strong naturalization that the canton experienced in 2015–2017, following the announcement of the amendment to the Act on Citizenship. Figure 2 shows the migrations of the population in Geneva in the years 1989–2021. The migrations of the Swiss (as can be seen a significant minority) and of foreigners (the majority) are listed.

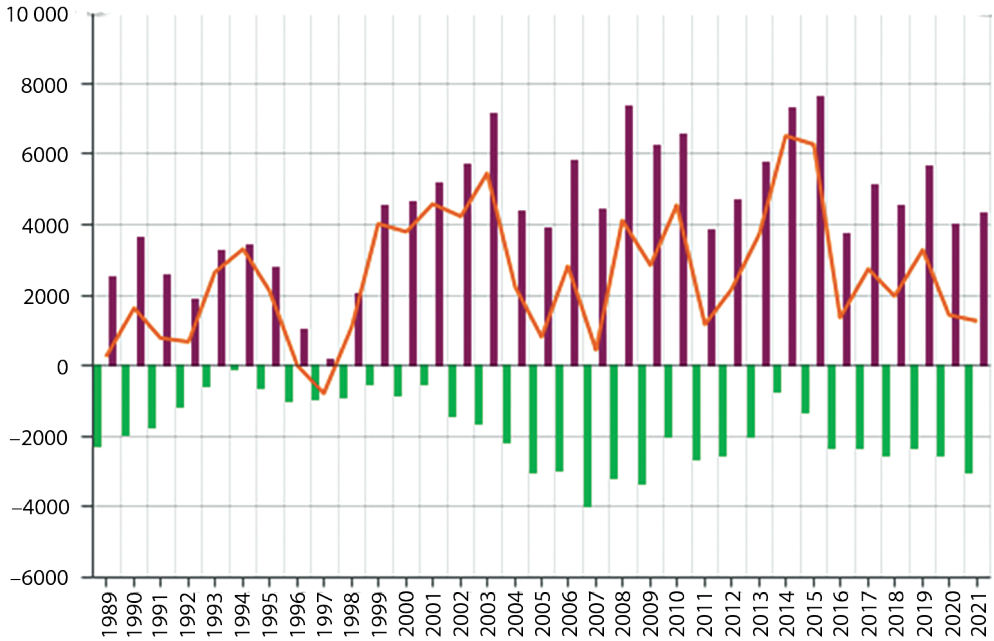


Fig. 2. Migrations in Geneva in 1989–2021. Green – emigration of Swiss people in the city of Geneva, red – immigration of foreigners in the city of Geneva, wrinkled – the sum of Swiss and foreigners in the city of Geneva. Source: www.bfs.admin.ch/bfs/en/home/statistics/regional-statistics/regional-portraits-key-figures/cantons/geneva.html (date of access: 2022/06)

According to the three scenarios under consideration, in the years 2021–2050 the population of the canton may increase from 72 thousands up to 151 thousands people. At the end of 2050, the canton would have, therefore, from 580 thousands up to 660 thousand inhabitants, compared with 508 thousands at the end of 2020. Regardless of the envisaged scenario, by 2030 the number of people aged 65 and over will exceed 100 thousands. Single-person households are the most numerous in the canton. In 2020, they account for 37% of all households, but account for only 16% of 464 thousand people living in the household. Couples with children account for 29% of households. In this type of household where the most people live: almost one in two live in it. One-parent families account for 11% of the population. In 2016–2020 91% of people aged 15–24 declared French as their main language, this percentage is lower and amounts to around 75% for working people aged 25–44 and 45–64. Foreign languages such as Portuguese, Spanish and Italian have higher percentages in these age groups, in particular due to migrants who have come to work.

6. ECONOMIC CHARACTERISTICS OF THE CITY OF GENEVA

In the first quarter of 2022, employment in the Canton of Geneva increased: +1.1% compared to the previous quarter (excluding primary sector, international public sector and domestic services¹). Employment has increased for four quarters of 2022. Previously, it showed a downward trend following measures taken during the COVID-19 pandemic.

The annual non-residential vacancy survey covers 190.725 square meters of office space and 22.1 thousand square meters of vacant shops or shopping arcades (for sale or for rent) as of June 1, 2021. Most of the vacant office space is concentrated in the city of Geneva (35% of the total), Meyrin (25%) and Plan-les-Ouates (12%), while shops are mainly located in Geneva (48% of the total). In 2020, the Swiss National Bank had 244 banking offices in Switzerland, a decrease of 3 units compared to 2019. The city of Geneva is associated with economic prosperity, a large number of commercial, industrial and financial activities. It is associated with economic success. Capital and commercial financial institutions drive the city's economy. So that is why the changes in the economy affect functional and spatial changes in the city of Geneva, which provides development of financial and commercial buildings.

7. THE LABOR MARKET IN GENEVA

The employed workers far exceed the number of jobs in the territories, mainly by residents of the French border of the Canton of Geneva. This residential character was strengthened by 10 years under the influence of the development of cross-border work or the lack of balance in the market. Work is especially important for certain professions. The relative balance for other translators' employment professions is in 52 foreign hands in the canton of Geneva (51 offices in 2019). Only the Canton of Zurich has more (80 seats) and these are assets from adjacent French areas. Due to this labor market situation, management is more concentrated near the border. Over the past few decades, jobs have tended to be concentrated in larger agglomerations, while the suburbs have seen most of the population growth. Increasingly, these territories become interdependent for employment or manpower. This phenomenon is reflected locally in the imbalance between the current employment and the number of employees. The relationship between the two values is high in centers of economic activity and, conversely, low in areas with more residential functions. This is the case in the French outskirts of the Canton of Geneva. This tendency is strongly emphasized for two reasons. The former holds up to the status and dynamics of Geneva as an important economic center, the latter relates to the specific geographic location of the Geneva agglomeration, which makes it more and more expanding into neighboring France.

¹ Data adjusted for seasonal effects.

8. BUILDINGS OF FUNCTIONAL AND ARCHITECTURAL SIGNIFICANCE FOR THE CITY OF GENEVA

The urban planning of the city of Geneva and its inhabitants are, contrary to appearances, very diverse. People from all over Europe and from all over the world live and work here. It certainly influenced the current look and the functional and spatial level of the city. The geographical location, on the communication routes between the north and south, and the east in Western Europe makes Switzerland open to the world. The most important districts and buildings that are of greatest importance for the development and functioning of Geneva are presented in the article. For the analysis were taken the most important revitalization of the buildings, which are the icons of the Geneva city or are important to the city architecture.

Certain buildings were preserved, but most of all, the very character of the old districts, for example by using pastiche. On the other hand, another district of this type, Rues-Bass, significantly increased the value of the land after the creation of a modern center in this part of the agglomeration. In the second half of the 19th century, the characteristic, classicist parts of the city were pierced by the newly created streets: Commerce, Céard, de la Tour-Maitresse and du Prince. In the 20th century, renovations and demolitions were finally completed. The changes to the buildings were motivated by the pursuit of modernity, as well as for economic reasons. The last major undertaking was an operation carried out by the Confederation Center (René Favre and Antoine Guth, 1976–1985), leading to the destruction of many buildings, including some from the 20th century. Overall, Geneva has played a number of roles in its history (table 1).

Table 1. Number of roles in Geneva history. Own study

1	It is a port city – transportation function	Thanks to its location on the Rhone River
2	Cultural and educational center	with several Universities of world renown: University of Geneva, Business University, College of Social Sciences
3	The largest financial center with localized capital from domestic banks	Examples: Union Bank of Switzerland (UBS), Swiss Credit Group (CSG) and Raiffeisen Bank
4	Geneva – financial currency capital	Switzerland as the owner of the most stable currency in the world – Swiss Franc
5	Commercial role	Locating a specialist trade (watchmaking), Patek Philippe, luxury boutiques (Cartier, Baucheron)

Geneva as a city is a synonym of wealth and seems to be versatile and self-sufficient. However, due to its reputation as a neutral and safe place, real estate prices here grow to horrendous sizes. The average price of land for single-family housing (or often

for investment) fluctuates around PLN 8 thousand up to 11 thousand PLN per square meters. In the outskirts provinces, the price drops slightly and amounts to an average of 2 thousand per square meter. A sample construction plot of 1,200 square meters in Vernier, a district on the outskirts of Geneva, costs over PLN 7 million (in an urbanized part of a small town). However, in the more strict city center of Geneva, a plot of 1,300 square meters costs 15.5 million PLN². When it comes to housing, prices are also at the highest level in the world. For a 3-room apartment of 88 square meters with a terrace in the Chêne-Bourg district, you have to pay 6.5 million PLN (PLN 75.5 thousand per square meters). A 70 square meters 3-room apartment in Geneva costs over PLN 7 million, i.e. – approx. 108 thousand. PLN per square meter. It can be safely said that real estate in Geneva and the surrounding area is over 5 times higher than, for example, in Warsaw.

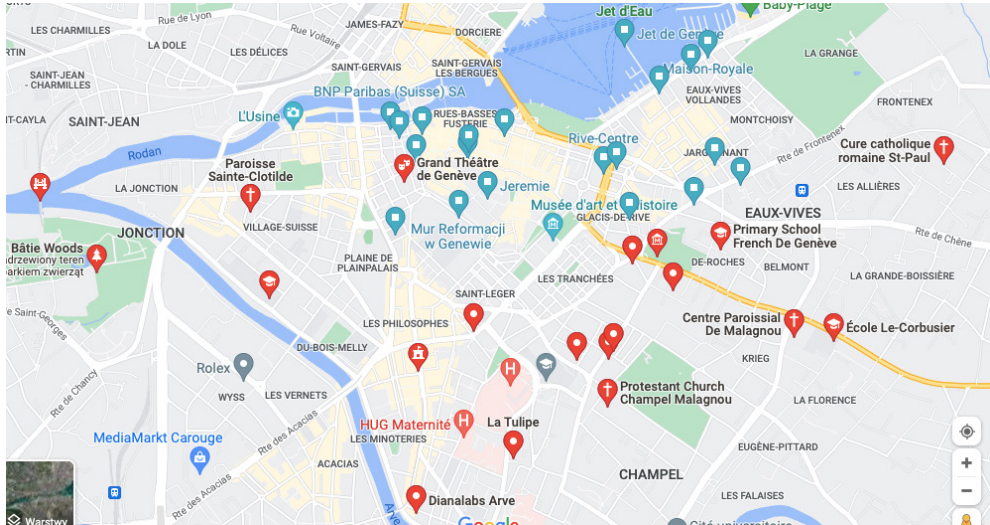


Fig. 3. Location map of the objects analyzed in the article. Source: www.google.com/maps/4atN3gzWi1pEkHGC8 (date of access: 2022/07)

8.1. VIEILLE-VILLE

Vieille-Ville or the Old Town leads by default through the Cathedral, then Rues-Basses, the banking district and the bastions. The Old Town Square has undergone some changes in the 20th century. Its very concept is a factory of the past century with many demolitions, transformations and new buildings. These are mainly those whose motivation was the revitalization activities, and in particular those that transformed in 1910 and 1920,

² www.properstar.pl (date of access: 2022/06).

from Rue de la Rôtisserie to the entire northern part of Vieille-Ville. An important role was also played by the desire to emphasize the existing buildings and beautify it, created in the 1930s. An ideal project of shaping the urban fabric, like an acropolis dominating any city. The materials and the method of construction were of less importance than the aesthetic values (*Genève, ville internationale*, 1990; *L'art de vivre*, 1992).

8.2. UNI DUFOUR – UNIVERSITY

The building is ideally designed in terms of the facade, entered in the register of public buildings of the canton of Geneva, integrates with the urban fabric. The 1965 competition winning design. Uni II (Uni Dufour since 1988), was built due to the previous fire-damaged election building. In addition to its universal purpose, the building retains a public function with two auditoriums for 300 and 800 seats. The complexity of the program is solved by the superposition of three different statistical systems. The use of the prestressed concrete technique, borrowed directly from the land technique, allows to meet the requirement of large spans of rooms for the auditorium and the ground floor or a large hall with stairs. The university is situated between Planpalais and Parc des Bastions.

8.3. MUR DES RÉFORMATEURS

Created to commemorate John Calvin's 400th birthday in 1909, the Reformation Wall in Geneva owes much to Charles Borgeard, a historian and professor at the Academy that designed the iconographic program. For him, the presentation of historical figures and scenes should primarily refer to Calvin's works on the spread of Reform ideas. At the end of the international competition (1908), the winning architects implement a design of raw simplicity on a wall from the 16th century. The monument consists of a stone embankment carved and decorated with bas-reliefs, in front of which there are statues of statesmen, pioneers and protectors of the Reformation. The whole, protected by a piece of water resembling the ditch of the old fortifications, extends over a hundred meters. Sculptors Henri Bouchard and Paul Landowski working for a group of Guillaume Farel, Jean Calvin, Théodore de Bèze and John Knox.

8.4. RUE DE LA CORRATERIE

This is a street with luxury shops in the center of Geneva. After the enactment of the Monument Protection Act in 1920, the plans and regulations for the old town followed one another, leading to integral conservation. This led to the classification of buildings of true architectural and historical significance and consisted in the preservation of the so-called character of the Old Town. In his report from 1948–1950, the Society for Public Art and

Antoine de Saussure, responsible for the work on Rue de la Corraterie 18. On this side there is a neoclassical facade, it is also distinguished by green marble columns that mark the aisles on two levels.

8.5. SOTHEBY'S SA AUCTION HOUSE

This building in the banking district displays elegant stucco combining Art Nouveau and Art Deco elements. The facades are interrupted by bays of adjoining windows from pilasters to decorative capitals, elements that give them a vertical effect. The arched windows extend from the floor and rest on the balustrades. The carved stone facades are slightly convex, creating the illusion of balconies. The glazed entrance door located at the corner of two streets is decorated with decorative motifs, similar to the windows on the ground floor.

8.6. BNP PARIBAS BANK

The BNP Paribas bank building itself is an autonomous block of six floors from the ground floor upwards and three basement storeys. In order to improve this impressive building located in the business district, the architect skilfully designed the glazing mesh and the arrangement of the mezzanine ground floor offset from the façade to create a portico that unfolds around two levels. At the same time, the structure includes solid, forged steel pillars specially designed to support the entire facility.

8.7. LA FONTAINE DE BEL-AIR

The corner of the street is a strategic place – it marks the beginning of the road from Rue de la Cité to Rue de la Confédération. As a junction of the Vieille-Ville district and the city and its business, it was under the watchful eye of heritage protection circles. The architects chose a covering inspired by patterned Germanic facades here. This beautiful fountain was a meeting point for all locals and a popular tourist attraction in the city. The magnificent architecture of the fountain depicts a dragon faucet pouring water into the pond.

8.8. NOUVELLE FAÇADE CLAUSTRA

Composed into a medieval tenement house, this building has, however, been restored in a completely different style than the rest of the previous years. Its surface is covered with small square granite protrusions, and only a part of the object is glazed outside. The transformation project results from the architects' dual approach to the materials used, mainly concrete and granite. It was finally renovated in 1950. Its definitely contemporary

design, with a layout of asymmetrical floors perpendicular to the facade, offers the use of wood, stone and glass as basic building elements. This solution ensures the dynamics of the facade, catching the light in different ways, depending on the seasons and the amount of sunshine. The bright and warm color of travertine refers to shades of brown on the facade inspired by the land of the place. Travertine is used as a facade material for all buildings in this style. It gives material and color consistency to the whole, while at the same time offering a very diverse implementation and perception of the building.

8.9. MALBUISSON/PAX

This building was designed in collaboration with William Dunkel and a professor at the Federal Polytechnic University of Zurich. He provided the overall design and facades, and Pierre Braillard took care of the structural and technical parts. Its implementation fits in the context of great revitalization activities, which in the 1950s and 1960s renewed the economic fabric, and thus the image of the city. Then they mark the arrival of Geneva focused on international service activities. Malbuisson Passage – Maurice Braillard 1933 has large windows overlooking the Mövenpick. The facades are read as the alternation of reinforced concrete columns and welded matt aluminum profiles.

8.10. QUADRLATERAL ROTISSERIE AND DU TERRAILLET PASSAGE

These two massive structures on the real estate market were built after the previous ones were dismantled. As for the building, it was built next to the widened street Rue Frank-Martin, built in 1919. It has stone facades with various components and templates. From them, the alleys are connected in the inner courtyard by a passage topped with a glass roof, on the Rue Frank-Martin side, where the middle building has only three levels. At Place des Troix-Perdrix, the ceremonial facade comprises eight levels above the ground floor and a mezzanine, with three balustrade balconies resting on strong supports. On three floors there are pilasters with Ionic capitals extended over a strong cornice. The top floor is slightly set back. The building is topped with a front inspired by mansions from the 18th century.

8.11. ALHAMBRA CINEMATOGRAPHIC THEATER

This multi-purpose hall (theater, cinema, music hall) with 1,400 seats, then the largest in Switzerland, was built after adding the extensive perimeter of the Old Town. The inscription on the front of the reception peristyle reminds that before its inauguration, the Allhambra was called Omnia, receiving the concessionaire in 1919 in Pathé, Geneva. The room was transformed into a design from 1928 – the first sound films in Switzerland, then colorful

ones from 1951. A concrete building covered with plaster, contains a combination of classic, baroque and Art Deco elements, it occupies a large hall topped with a bar, a performance hall with balconies and an orchestra and a stage tower housing a dressing room for artists. The lights in the curvature of the coffered ceiling give this room a special atmosphere. Saved from demolition, Allhambra was listed as a historical monument in 1996.

8.12. MONUMENT TO THE PROPHET JEREMIAH

Bronze statue of the Prophet Jeremy, which is on the Cour Saint-Pierre in Geneva, was made by the artist Auguste de Niederhäusern (known as Rodo), born in Vevey in 1863 and died in 1913 in Munich. The greatest sculpture by a Swiss artist at the exhibition in Paris, “a masterpiece” and “a perfect example for all of us”. Nevertheless, from 1918 it was stored in the Museum of Art and History before being installed in its current location in 1939. Due to the staging, Maurice Braillard did not place the statue in the central position, but laterally, in a slightly dark corner of the street. Remembering the creator of the rhythmic spaces of the Geneva renovation and the theatrical interior, Adolphe Appia, the architect skilfully combines all architectural elements and facades with the cubature of an existing building.

8.13. COMMERCIAL AND ADMINISTRATIVE BUILDINGS ON THE MAIN STREET OF VIEILLE-VILLE

Distinguished itself with its research technically and constructively, in its latest projects The invention agency moved towards issues of typology and architectural plasticity. This early 1970s building has a triple metal facade, three axes separated by main and intermediate pillars, the concrete of which is enriched with white marble inserts. Character is created by the commercial part and its relation to the public space: a concrete structure with a glass awning. This architectural aspect gives the stores spatial autonomy, as well as mezzanines and signboards separate their space.

8.14. SAINT JOSEPH

Bordering the church with Vieille-Ville and Eaux-Vives, as the number of Catholics increased, the parish decided to enlarge it in 1897. Side aisles and many stained glass windows were added. In 1937, the Catholic parish of Eaux organized the reconstruction of his church. In the years 1937–1938, a new expansion was undertaken, consisting in the reconstruction of the aisles and the apse, which were raised so that they were one with the building. In addition, the chapel of St. Victor. A new renovation was carried out in 2000. It refers to the neo-Gothic style of the previous church, but gives an interpretation oscillating between Expressionism and Art Deco. Engineer Robert Maillart managed to overcome the challenge of

maintaining the upper part of the building – the belfry and the vault of the upper nave – while completely rebuilding the lower part. Wide arcades on the nave and a choir create a space of great horizontality. The skillfully decorated building is the main achievement of Geneva artists working for the revival of sacred art in French-speaking Switzerland under the name Groupe de Saint-Luc. Alexander Cingria is joined by Alexandre Blanchet, who is responsible for the mosaic of stained glass in the Chapel of St. Victor.

8.15. EAUX-VIVES CENTRUM

From La Terrassière to La Grabelle via Eaux-Vives, Beginning in the old suburbs of La Terrassière and Eaux-Vives, this section continues towards Annemasse, a nearby city in France bordering Geneva. The district of La Grabelle is also nearby. Administrative unit created under French occupation in 1798, approved in 1816 as the commune of Eaux-Vives. It is adjacent to the districts of Grange-Canal and Malagnou, connected to the city of Geneva in 1930, at the same time as the other suburban municipalities of Petit-Saconnex and Planpalais on the other side of the city. In the first half of the twentieth century, the compact buildings of these districts, as well as the Paquis represented by architects and city planners, set an example of what should be avoided. The port, most of the residential and commercial estates were considered anarchic, lacking craftsmanship and aesthetics. It functioned until 1849, that is until the planned revitalization. The Eaux-Vives transition was largely driven by Maurice Braillard and Louis Vial starting in 1927.

The first example of modern planning in the city of Geneva was the Square des Deux and Montchois Park. It is also worth paying attention to the park in Mont-Blanc, built in 1851, with a rounded structure, which guarantees free air flow to the central part. The general plan, consisting of four squares, was then realized by the Honegger brothers and completed in the late 1950s. In 1948, the Geneva Development Commission established an overall plan that included the complete redevelopment of Eaux-Vives in six phases, from 1950 to 2050. Although this project – which took into account the district's central lakeside location. The plan included saving space in public space, which meant that, among others, Montchois Square was to be replaced by a more innovative venture due to the amount of free, unused space. Shortly thereafter, in 1952, the Town Planning Department, led by André Marais, agreed on a partial plan.

8.16. IMMEUBLE CLARTÉ “GLASS HOUSE”

The double Clarté building, glass house is inspired by the 1923–1924 Corseaux house, the only avant-garde building in Switzerland by the great architect La Corbusier and his third cousin Pierre Jeanneret. The site was set up by John Torcapela, assisted by Francis Quétant and Boris Nazarieff, three members of the Groupe d'Architecture Nouvelle à Genève,

a group dealing with modern architecture in Geneva. Robert Maillart's engineer to solve the problem of foundations and slabs when building on a slope. The building was erected on the initiative of Edmond Wanner, a businessman and locksmith from Geneva, on a plot of land belonging to him at that time. It was the first building in Geneva to be entirely constructed of glass, including floors and ceilings.

8.17. DIANE RIVE I RIVE TERRASSIÈRE

Built with a 20-year difference by the same architectural firm with qualified staff, these two buildings demonstrate great attention to detail and adaptation to current architectural changes. Located on Rue Adrien-Lachenal (1933), it is built in the Art Deco style, while the corner building (1955) has a classic style.

8.18. SCALA CINEMA

Object it includes three cinemas on two levels after the dismantling of a small hall in the years 1992–1993 and the entrance hall with a foyer overlooking the Eaux-Vives street. This foyer, a relic of modernism still steeped in the spirit of the years in the 1930s, is one of the last remnants of its kind in Geneva. It has been restored taking into account its elements: a bar and a mezzanine decorated with beautiful oak wood furniture, mirrors and display cases, and five wall paintings from the period 1949 and signed by the Geneva artist Benjamin Vautier, designer of many decorations for public places, where he represents various activities of everyday life. Thanks to an extensive program, Micheline and Roland Perrière – managers independent filmmakers since 1974 – have created an important place for Scala in the cultural life of Geneva.

8.19. TWO DISTINCTIVE APARTMENT BUILDINGS AND ROYAL HOUSE

These two buildings, designed by the same architect twenty years apart, are present at a time when modern architecture was just beginning in Geneva. The one with the number 26 has some of the most innovative features: spacious interiors, glazed windows and a flat roof. Built in the early 1950s, the corner building adjoining number 24 has a symmetrical façade that is often framed by protruding balconies. Built of stone, cornices and facade slats, it will give a strongly neoclassical character and a view of the lake. Royal House is luxurious apartment building, originally with two apartments upstairs, similar to the former Hôtel Bellevue on the other bank. It is worth paying attention to its rich and carved appearance, numerous domes, a terrace on a pedestal in front of the main facade, unique in this area. Its size (22.5 instead of the standard 21 m) also caused a lot of

discussion. Stone, white facades are interrupted in a Baroque setting by small towers and monumental columns, accompanied by simple and rounded balconies with cornices. The entrance door, an elegant work of locksmith (like a staircase and an elevator), gives access to the vestibule decorated with polychrome marble and a beautiful fresco on the ceiling. The eagle that once crowned one of the two towers of the house was made in Carouge by the Torrigiotti locksmith's workshop. It was removed in 1942. The roof and domes have been completely restored. Triangular and curved pediments and spiers appeared, decorating the shape of the roof terrace. The building was entered on the list of historical monuments.

9. FUNCTIONAL CHANGES IN GENEVA

The main districts, in my opinion, the most interesting are Vieille-Ville (Old Town) with the center located at Rue du Rhône, Eaux-Vives being the most prestigious area of the city, Champel with research and medical centers. Next, the Planpalais district intended for events and meetings for residents, as well as the main University located here. The L'Arve a Rhône flowing into the lake are the main rivers in Geneva, they flow through the entire city, and the La Jonction Viaduct is the dividing point. There are many interesting buildings in Geneva that have appeared in recent years. Their main features are functionalism and the use of natural materials and new technologies. Over the years, the city has also changed the infrastructure for the needs of many international organizations into their offices and conference rooms. The facilities built to host these organizations since the 1920s have profoundly transformed the urban landscape of Geneva, which has been consistently supported and facilitated by local and national authorities. Geneva is not particularly famous for its modern architecture. Most of the newcomers to the city want to see the attractions of Geneva, head to the old town on the hill and its medieval and Renaissance buildings. But there are some modern facilities that are among the best buildings in Geneva are included in the work. Mainly located in Eaux-Vives or other central parts of the city. Among others, Immeuble Clarté by Le Corbusier and Nouvelle Façade Clastra. The figure 3 shows the map of the buildings and areas described in article. All the list of analyzed buildings with description is attached in table 2.

Table 2. Building of Geneva city under revitalization in the analyzed article. Own study on basis (*Genève, ville internationale, 1990; L'art de vivre, 1992*)

No.	Name	Address	Architects	Owners of the building	Year of construction/ intervention	Main function
1	Vieille-Ville	e.g. La Rue du Marché	various	n/a	n/a	various
2	Uni Dufour – University	Rue du Général-Dufour 24	Werner-Charles Francesco, Gilbert Paux, Jacques Vicari, Engineers: Houchmand Naïmi, Jean Wäitchli	n/a	n/a	educational
3	Mur des Réformateurs	Address Parc de Bastions	Alphonse Laverrière, Jean Taillens, Eugène Monod, Charles Dubois. Performers: Alphonse Laverrière, Jean Taillens, Artists: Paul Landowski, Henri Bouchard, sculptors	Association du monument de la Réformation	1911–1917	recreational
4	Rue de la Corraterie	n/a	n/a	n/a	n/a	commercial – (street with luxury shops)
5	Sotheby's SA Auction house	Rue François-Diday 2	Marc and Jean Camoletti	Banque Populaire Genevoise	1919–1920	financial
6	BNP Paribas Bank	Address: Place de Hollande 2, Rue du Stand 57, Place de la Poste 1–3	Pierre Brailard	Banque BNP Paribas	1982	financial
7	La fontaine de Bel-Air	Rue de la Cité 1/ Rue de la Confédération 4	Architects: Jean-Maurice Bommer, Jean-Jacques Megevand	SI Cité Fontaine, Year built: 1951–1952	n/a	recreational

8	Nouvelle Façade Claustra	Rue de la Cité 3	Aurelio Gaffetti, Athanase Spitsas, Thierry Estoppey; Father Nicole, Engineer; M. Giannakopoulos	Banque Leu, Zurich	1993–1994	various
9	Malbuisson/pax	Rue du Rhone 40/ Malbuisson Passage	Pierre Braillard, William Dunkel (Pax building), Maurice Braillard (Malbuisson crossing), Interior designer: Otto Zollinger (former Mövenpick restaurant). Engineers Pierre Froidevaux, W. Weber, E. Abersson	client of Pax Assurances & Cie, Basel	1955–1959 (Pax), 1931–1933 (Malbuisson passage). Intervention: comprehensive renovation of the facade and equipment	commercial
10	Quadrilateral Rotisserie and du Terraillet Passage	Address: Rue de la Rôtisserie 2–8 / Place de Trois-Perdrix/ Rue Frank-Martin 1–5/ Rue de la Pélisserie / Passage du Terraillet	Frédéric de Morsier, Charles Weibel	SI La Citadine, SI Le Pignon	Construction 1915–1919 (Passage du Terraillet), 1923–1925 (Rotisserie). Intervention: renovation of the Passage du Terraillet in 1967 by René and Luca Hermès	various
11	Alhambra cinematographic theater	Rue de la Rôtisserie 10, Rue de la Pélisserie 1	Paul (Henri Jules) Perrin	Lucien Lévy, dit Lansac, director of Société Omnia, for the Dom real estate company	1918–1920	cultural
12	Monument to the Prophet Jeremiah	Saint Pierre Quarter, Rue du Soleil-Levant	Architect: Maurice Braillard, Sculptor: Auguste de Niederhäusern	Geneva City	Structure: Sculpted in 1913, installed in 1939	cultural
13	Commercial and administrative buildings on the main street of Vieille-Ville	Rue du Rhône 62	Marc Joseph Saughey	SI Rue du Rhône 62–66 SI Extends	1970. If in the 1950s Marc J. Saughey's agency	commercial

14	Saint Joseph	Place des Eaux Vives 4, Rue Petit-Senn, Architect: Jules Zumthor	Engineer: Robert Maillart, Artists: Marcel Fauillat (bronze and goldsmiths), Alexandre Blanchet and Alice Basset (mosaic, stained glass), François Baud, Charles Collet and Jean-Joachim Cornaglia (sculptures), Eugène Dunand	Roman Catholic Parish Eaux-Vives	1937–1938. Intervention: renovation 2002–2003 by the architectural studio Dominique Grenier and colleagues	religious
15	Eaux-Vives Centrum	Avenue de Frontenex 6–8	Raoul Engeli, René Pahud	SI La Fraidieu, SI Eaux-Vives	1959	various
16	Immeuble Clarté “Glass House”	Rue Saint-Laurent 2–4	Architects and designers: Le Corbusier and Pierre Jeanneret, John Torcapel, Francis Qutant, Boris Nazarieff, Engineer: Robert Maillart	Edmond Wanner, administrator SI Clarté	1931–1932. Intervention: external renovation 2009–2010 Jacques-Loius de Chambrier	recreational
17	Diane Rive I Rive Terrassière	Address: Rue Adrien- -Lachenal 1/2, Rive 2 intersection, Rue de la Terrassière, SI Rive Terrassière	Edmond Barassi (Rue Adrien-Lachenal 1) and John Balland (Rive 2 intersection)	SI Rive Terrassière, SI Diane Rive	1933 (Rue Adrien-Lachenal 1), 1955 (Rive intersection 2)	various
18	Scala Cinema	Rue des Eaux-Vives 23, Architect: Alfred Eyper, Artist: Benjamin Vautier (cinema foyer decorated with several murals)	The Scala Cinema and an apartment building with integrated premises were built from 1949 by Alfred Eyper in the vicinity of buildings from the 1930s	Owner: Walter Schaub	Built in: 1949. Intervention: The original cinema was built in 1992–1993	recreational

19	Two distinctive apartment buildings	24 and 26, Quai Gustave Ador, Architect: Jean Camoletti	n/a	Owner: SI Le Trident, SI quai des Eaux-Vives 26	1929 (No. 26), 1953–1954 (No. 24)	residential
20	Royal House	Address: Quai Gustave-Ador 46	Henri Garcin, Charles Bizot, Engineer: Maison Gauthier, Geneva Owner: SA Maison Royale Quai des Eaux-Vives	n/a	1908–1909: Renovation of the roof and removal of decorative elements on the facades 1960–1966 Marc Gignoux; interior transformations in the years 1970–1971. Dominique Julliard and Jacques Bolliger; finishing works in 2007–2010 André Gallay and Jacques Berger	cultural
21	Residential building with an irregular shape	Quai Gustave-Ador 42	Architect: André Bordigoni	Owner: SI Villa SA	1952–1953. Renovation of the entrance and cellars in 1996–1997, elevation 1999. In the context of the mid-nineteenth century, this corner building recalls the hermetic architecture of the 1950s	residential
22	Sauge Office Building (Tour Sauge)	Address: Rue du 31-Décembre 47; Linck Passage 1	Architect: Marc Joseph Saugey, Engineer: Pierre Froidevaux	Owner: SI La Tourelle	1959–1961. Renovation: 1993	various
23	AM STRAM GRAM Theatre	Rue Frontenex 56	Peter Boecklin, Predrag Petrovic, Contributors: Roland Fabra, Nicolas Maeder, Bruno Porcher Engineer: C. Fischer SA, Artist: Roger Pfund	City of Geneva	1988–1992	cultural

24	Saint-Paul Church	Avenue de Saint-Paul 6	Adolphe Guyonnet, Artists: Maurice Denis, Alexandre Cingria, Georges de Traz, Marcel Poncet, Charles-Emile Brünner, Casimir Reymond, François Bocquet, Wanner & Cie, Henri Passet, Pierre Chevalley, Antoine Casanova	Roman Catholic parish	1913–1915	religious
25	Champel- -Florissant- -Malagnou	n/a	From 1915, the first elements of the 19 th century were recreated, and the buildings on the opposite side of the avenue à la in the 1930s flats, planned transformation of villa areas into areas of city development. Gradually, multi-family houses began to emerge	n/a	In the 20 th century replaced by a district with commercial premises	residential
26	Angle Prairie Fleurie	Rue Michel-Chauvet 2; Boulevard des Tranchées 54	Paul Perrin Senior	St Prairie Fleurie	1928	residential
27	Natural History Museum	Route de Malagnou 1	Raymond Tschudin Contributor: Michel Girardet Engineer: Pierre Beurret, Artist: Paul Bianchi (bronze sculpture on the entrance facade)	City of Geneva	1965–1966	cultural

28	Malagnou-Cité	Rue Michel-Chauvet 7-11, 15	Georges Addor, Jacques Bolliger, Artist: André Sangsue (paintings in the entrance hall)	SI Polymnie, SI Malagnou-Cité	1955	various
29	French primary school and kindergarten	Address: Chemin des Vergers 3	Architects: Georges Candilis, Arthur Bugna, Engineer: Pierre Tremblet	French Youth Foundation in Geneva	1961-1962	educational
30	Centre Paroissial de Malagnou (parish centre)	Chemin (street) Rieu 3	Michel and Gilbert Frey, Contributor: Gerard Varesio, Artist: Bodjol (stained glass)	National Protestant Church	1970-1971	religious
31	Le Corbusier School	Address: Rue Le-Corbusier 2-6 / Route de Malagnou 70	Ugo Brunoni, Imré Vasas, Associates: J. Yves Ravier, Jiri Jebavy Engineers: Liechti and Serex	City of Geneva	1984-1990 (in 2 stages)	educational
32	Chempel Temple	Avenue Alfred-Bertrane 10	Antoine Leclerc Auguste Bordier, Adrien Haas, Emile-Albert Favre, Engineers: René Epars, G, Devaud (extensions and transformations)	Protestant Church in Geneva	1933. Intervention: expansion (parish center) in 1968-1969 René Koechlin and Marc Mozer	religious
33	Le Vieux Mur (Old Wall)	Rue Marignac 1-3	Rene Murset	SI Le Vieux Mur	1934	recreational
34	Ensemble Athénée	Rue de Contamines 30, 27 / Rue l'Athénée 42, 31-35	Paul Eugène Henssler	SI Athénée Parc, SI Athénée-Florissant, SI Athénée-Contamines, SI-Athénée-Pelouse, SI Athénée-Fleuri SI Athénée-Bocage	1931-1933	commercial

35	Three apartment buildings	Rue de l'Athénée 37–39, Avenue Léon-Gaud 10–14, Avenue Gaspard-Vallette / 29–35, Rue de Contamines, Architects: Edmond Glaser, Alfred Eyper (implementation)	n/a	SI Athénée-Léon-Gaud A-C, SI Champel-Peschier, SI Colombière	1933, 1934 (Avenue Léon-Gaud / 10–14, avenue Gaspard-Vallette), 1937–1938 (Rue de Contamines 29–35)	residential
36	Plainpalais-Sud	This area of the former suburban commune of Plainpalais. It is intersected by the Rue de Carouge, the approximate route of the Roman road axis connecting Geneva with Annecy from north to south, linking l'Arve over Geneva's oldest surviving bridge	n/a	n/a	attached to Geneva in 1930, stretches from the Boulevard du Pont-d'Arve and from the plain to the Charles-Page quays and Capo-d'Istria along the Arve	educational/cultural It includes the main building of the University of Geneva and also hosts cultural sites that appeal to a wide audience: Théâtre de la Comédie, Casino-Théâtre, Salle
37	Plainpalais Commune Hall	Address: Rue de Carouge 52 / Rue Pictet-de-Bock 2	Joseph Marshall, Artists: Atelier Jourdin (stained glass), Georges Guibentif (paintings from the gallery), Edouard Ravel (photo on canvas on the mezzanine), Mittey & Dumont (paintings on the ceiling of the theater foyer)	Plainpalais Commune, from 1931 the City of Geneva	Built: 1908–1909. Intervention: renovation of the façade and renovation of the conference room on the ground floor in 1938 major renovation of the audience and stage of the Pitoëff Theater in 1968 major renovation in 1998–2000 by Alain Carlier (architecture), Atelier Saint-Dismas (paintings), Atelier du Vitrail (stained glass)	administrative

38	Courbe Du Quai Capo-d'Istria et bâtiment industriel – wharf and infrastructure	Address: Quai Capo d'Istria 3–13 / Rue de Carouge 99 / Rue de la Colline 2, 6–10	Jean-Jacques Dériaz, Ernest Gojon, Owner: SI quai Capo-d'Istria	n/a	1929–1931. Intervention: part of the industrial building was converted into housing in the late 1990s. Renovation of the exterior in 2004	religious/recreational
39	La Tulipe	Avenue de la Roseraie 64, Architect: Jack V. Bertoli	P.-H. Béguin, C. Huguenin	Swiss Foundation for Medical Research	1975–1976	heath
40	Immeuble de logements pour étudiants	Boulevard de la Tour 1	Patrick Devanthery, Inès Lamunière Contributor: Isabelle Charollais, Engineer: Michel Paquet	CUP Foundation	1991–1993	recreational (public garden)//residential
41	Grand Théâtre de Genève	Boulevard du Théâtre 11	Henry Baudin, Artist: Eric Hermès (sculptures)	La Comédie SA	1911–1912. Complete renovation of the interior in the years 1962–1963 by Michel Buri and Gilbert Frey, in cooperation with the sculptor Albert Rouiller	cultural
42	l'Arve a Rhône, la Jonction	l'Arve and Rhône, boulevard Georges-Favon (which leads to the bridge (Coulouvrenière), Plainpalais and Boulevard du Pont-d'Arve	It was industrialized from the second half of the 19 th century, after the demolition of fortifications and facilities such as barracks, gas plants, gold processing (UGDO)	This sector remained as an industrial area until the 1960s. Then it was transformed into leisure, entertainment, culture and association districts by transforming former buildings industrial. Currently, the area around the Plainpalais district is in constant movement	Houses were built after the First World War. This sector remained as an industrial area until the 1960s	residential (before industrial)

43	Viaduc de la Jonction	le chemin (route) du Nant-Cayla a chemin du Bois-de-la-Bâtie	Artur Lozeron Engineers: Jacques Bauty, Bureau des Ponts de la direction générale des CFF in Bern; J.-P. Colomb, work director of the SA consortium Conrad Zschokke meeting of the Pulfer-Olivet companies	CFF	1943–1946	transportation
44	The Bois-de-la-Bâtie	Located near the Arve River	A forest in the middle of the city. The Bois de la Bâtie offers wonderful walks through 12 hectares of natural forest	public	n/a	recreational (sports and leisure facilities)
45	Institute of Physics	Quai Ernest-Ansermet 24 / rue des Bains 32, Architect: Denis Honegger, Engineers: Alfred Esselborn, M. de Rham	Geneva City	n/a	Intervention - renovation carried out by the Billaud brothers in 1964	educational
46	Sainte-Clotilde Church	14, Sainte-Clotilde Avenue, Architects: Albert Cingria	church	Sainte-Clotilde Parish, Crèche de la Jonction	1963–1965	religious

Table 3. The main function of analyzed buildings and districts of Geneva city under revitalization.
Own study

Main function	The number of analyzed buildings/areas	Share (in %)
recreational	6	15%
residential	6	13%
commercial/financial	6	13%
religious	6	13%
cultural	5	10%
educational	5	6%
transportation	1	2%
administrative	1	2%
health	1	2%
various	7	15%

From the analyzed building and areas in the article, which have taken the transformation in the last decades the biggest group are the buildings with the main function of recreational (15%), residential (13%), commercial and financial (13%), religious (13%).

10. SUMMARY AND CONCLUSIONS

Companies and organizations are best placed to design what types of transformation plans are appropriate for their situation. Geneva is also developed through the continuous reorientation (modernization) of the structures of the company or organization (consolidation of activities for sustainable development). Functional changes in the space of Geneva are related to organizational changes, adapting to the current situation in the country. In Geneva, you can observe the qualitative development of urban areas, cooperation between various institutions and numerous revitalizations of individual buildings. The work also describes aspects of town planning and the legal and territorial development of the city of Geneva. They allow the identification of emerging and recurring issues over time, such as the extent and boundaries of the city, the density and intensity of urbanization, transport links, and the location of industrial zones.

The article presents a collection of urban and architectural projects that clearly show different concepts of the organization of the city and canton territory. Some of these buildings are the showcase of the city and are recognizable among foreign tourists. The aim

of this article was to present the changes in architecture and socio-economic changes that took place in Geneva in the years 1980–2020 and to obtain an answer to the question: what was the most dynamic period of Geneva's development in terms of the number of inhabitants who lived in this city, and to obtain an answer to the question: what functional and spatial transformations of the city of Geneva have taken place over the last few decades and what function currently dominates in Geneva. In 1980 was a significant demographic decline in Geneva. Since then, however, the population began to increase significantly, especially between 1980 and 1990, its greatest increase was recorded. In the years 1990–2010, the population increased regularly, while since 2010 it has increased again more than in the previous twenty years. The most dynamic growth of the population of the city Geneva was in the last two decades of the XXI century (2000–2020).

The described buildings are mainly business and cultural functions, with the predominance of the former. Banks, both those mentioned and not mentioned (e.g. the legendary Safra's) play an important role in the financial system and the economy. As a key element of the financial system, banks efficiently allocate funds from savers to borrowers. They provide specialized financial services that reduce the costs of obtaining information about both saving and loan opportunities. These financial services help increase the efficiency of the entire economy. Their multitude and privatization effectively locates Geneva in the richest cities in the world. From analysis taken in the article the areas and buildings, with transformation in the last decades were mainly with the function of recreational, residential commercial and religious. However the changes in the economy affect functional and spatial changes in the city of Geneva, which results in development of financial and commercial buildings.

The author is responsible for linguistic correctness of the paper.

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