EUROPAN 18 CROATIA

RE-SOURCING

ZAGREB (HR)

KLARA_NOVA

EUROPAN IS COMING HOME

SITE BRIEFS

CONTENTS

1| INTRODUCTION

The City of Zagreb has accepted the invitation of Europan Croatia to participate in the upcoming session of **EUROPAN 18** competition on the topic of **Re-sourcing**, preserving and restoring natural and urban resources. So far, the City of Zagreb has participated in five Europan competitions (E2, E8, E9, E10, E13), mostly on topics of new and innovative models of housing. Therefore, the E18 session is considered as a return to its origin, this time with affordable housing.

The proposed site is situated in the residential area of **Sveta Klara**, in the **Novi Zagreb ("New Zagreb")** district. The area was until recently used as a facility for separation of mineral materials (brownfield location), with several unrealized planning perspectives - first for organized housing development POS (The State-Subsidized Housing Construction Program), then for Roma families' settlement. In 2021, the area was planned for housing people whose houses were damaged in the 2020 earthquakes. The land was divided into parcels in 2021, but the parcellation is not obligatory in terms of this competition.

In accordance with the spatial planning documents, implementation of the city's policies of **affordable public housing** is planned on the **Klara Nova** competition site. Public facilities, sports and recreation facilities, along with green park areas are planned in the area, and the City wishes to implement the organised planned housing development as a model for contemporary housing community in the **near future**. The results of the idea competition will provide basis for the future urban development plan (UPU).

In line with the topic of the Europan 18 competition, Re-sourcing, participants are expected to design a sustainable, inclusive and resilient model of a contemporary housing community that provides different forms of social activity in the existing context, enabling closeness, togetherness and solidarity. The Klara Nova community could be a transformation accelerator for the wider zone of Sveta Klara – the unplanned outskirt of the city. It is a fragmented area of social, economic and cultural inequality, marked by informal self-built constructions and substandard living conditions, with high potential for urban regeneration.

In accordance with the competition topic, participants are expected to explore modalities, evaluate possibilities and solutions that, within given legal and spatial parameters, ensure quality upgrades in contemporary housing.

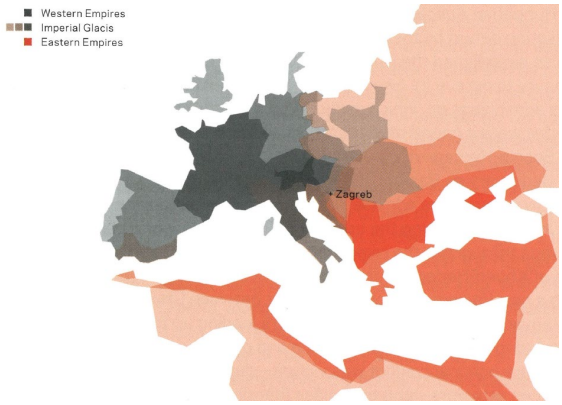
Placing housing at the focus of the programme for the Zagreb / Klara Nova competition site evokes the slogan "Europan is coming home" since it reactivates the early Europan competitions' goals. The expected architectural and urban designs should bring new and different perspectives on residential architecture, as well as define models that can be multiplied and built upon, aligned with topos in the periurban landscape.

Aerial photo of the project site, view from the south toward north

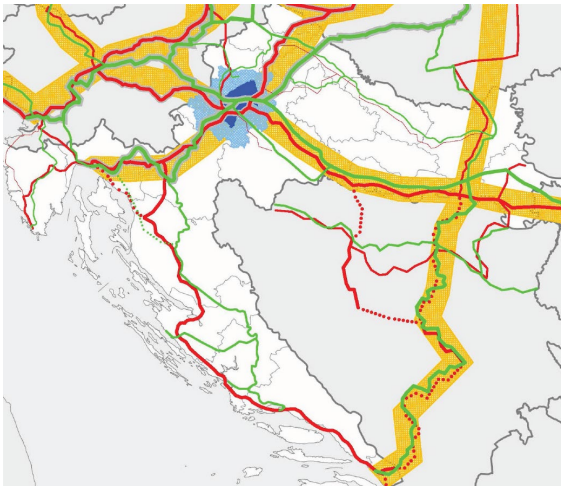
2| NATIONAL CONTEXT

2.1. Geographical, Geopolitical and Transportation Situation of the City of Zagreb

The Republic of Croatia is a member of the European Union, and is located in Southeastern Europe, at the crossroads of Central Europe, the Mediterranean and the Balkans. With an area of about 56,594 km² and a population of approximately four million inhabitants, it is characterized by diverse geographical features and cultural influences. The capital and largest city of Croatia, the City of Zagreb, is located in the center of the territory of the Republic of Croatia and represents the political, economic, cultural and educational center of the country. The city of Zagreb is the smallest territorial unit of the regional self-government with an area of about 641 km², which occupies only 1.13% of the land area, but at the same time, with 767,131 inhabitants, it is the area with the highest population density. The total population of the metropolitan region, including the city of Zagreb, is about 1,100,000 inhabitants, which is over a quarter of the population of Croatia. The metropolitan area is home to around 400,000 inhabitants who gravitate to the City of Zagreb due to centralization and intensive daily migrations. Zagreb is a key hub of international road and rail corridors, of which the corridor that connects Austria with Greece and the branch of the corridor between the port of Rijeka and Budapest that enables the transport of goods and passengers between Central Europe and the Adriatic Sea stand out.



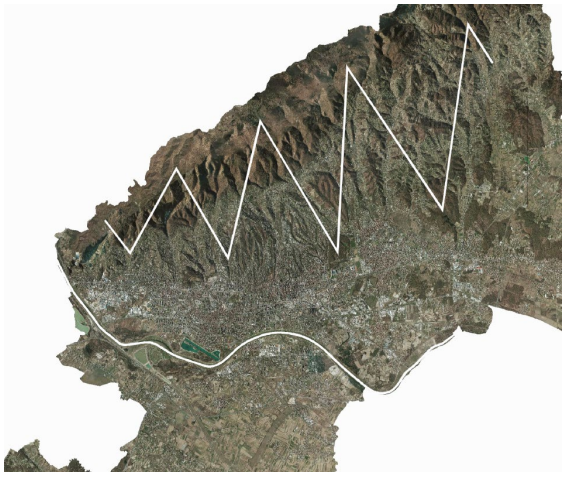
Cultural context



The city of Zagreb within the EU development corridors

2.2. Natural features

Zagreb belongs to the southwestern part of the Pannonian megaregion, at the junction of the lowland and mountain parts of Croatia, in the zone between the alluvial plain of the Sava River and the Medvednica mountain massif. It has the moderately warm climate of the moderate latitudes continental belt, with pronounced seasons and uniformly distributed rainfall throughout the entire year. The vegetation of the continental belt is characteristic, where grass cover prevails on uncultivated alluvial surfaces, deciduous forests predominate at lower altitudes and mixed forests at higher altitudes.



Dominant natural features of the area

2.3. Historical and spatial development of the City of Zagreb

In addition to historical, economic and social circumstances, the characteristic natural landscape patterns of the City of Zagreb - the Medvednica foothills with a system of streams and the valley of the Sava River with numerous tributaries - until the 19th century largely influenced the historical periods in which certain anthropogenic landscape patterns of permanent and temporary settlements were created.

The first urban settlement in the wider area of Zagreb dates to the classical era, when the Roman settlement of Andautonia, which represented the secondary center of the Roman province of Pannonia, developed along the right bank of the Sava (today the village of Šćitarjevo). The influence of this period on the shaping of the landscape is present in the structure of the basic road system and the agricultural landscape. The traces of ancient centuriation have been preserved not only on the routes of certain roads (and city streets) but also in the present system of lowland areas parcelling. Due to regular flooding of the Sava River and decreased security of life in lowland settlements after the fall of the Western Roman Empire in 476 the people moved from the Sava valley and inhabited the slopes of Medvednica, along the streams. Most prominent were medieval towns of Gradec and episcopal Kaptol, on two hills separated by the Medveščak stream. Until the end of the threat of Turkish attacks at the beginning of the 17th century, both cities develop within the defensive walls while smaller villages developed in the area between Medvednica and Vukomeričke gorica (**Sveta Klara**, Otok on Sava, Siget, Zaprude, Horvati, Prečko, Rudeš, Trnje, Vrapče, etc., with toponyms mostly related to the river landscape). The period from the end of the Turkish attacks to the middle of the 19th century was characterized by spontaneous urban growth outside the walls along the main traffic flows - today's Ilica, Vlaška, Petrinjska, Nova Ves and Frankopanska streets, as well as the baroque architecture of more modest or representative residential and religious buildings of Zagreb.

During the 18th and 19th centuries, urban growth along the southern slopes of Medvednica led to the transformation of numerous forested areas into arable land surrounding villages, which is still visible in some parts in the topography and indigenous elements of the landscape as topographical relics. Medvedgrad was built in the 13th century on the prominent peak of the southern slopes of Medvednica. It was one of the largest fortresses in Croatia, with a dominant position still present in the vistas of the city today.

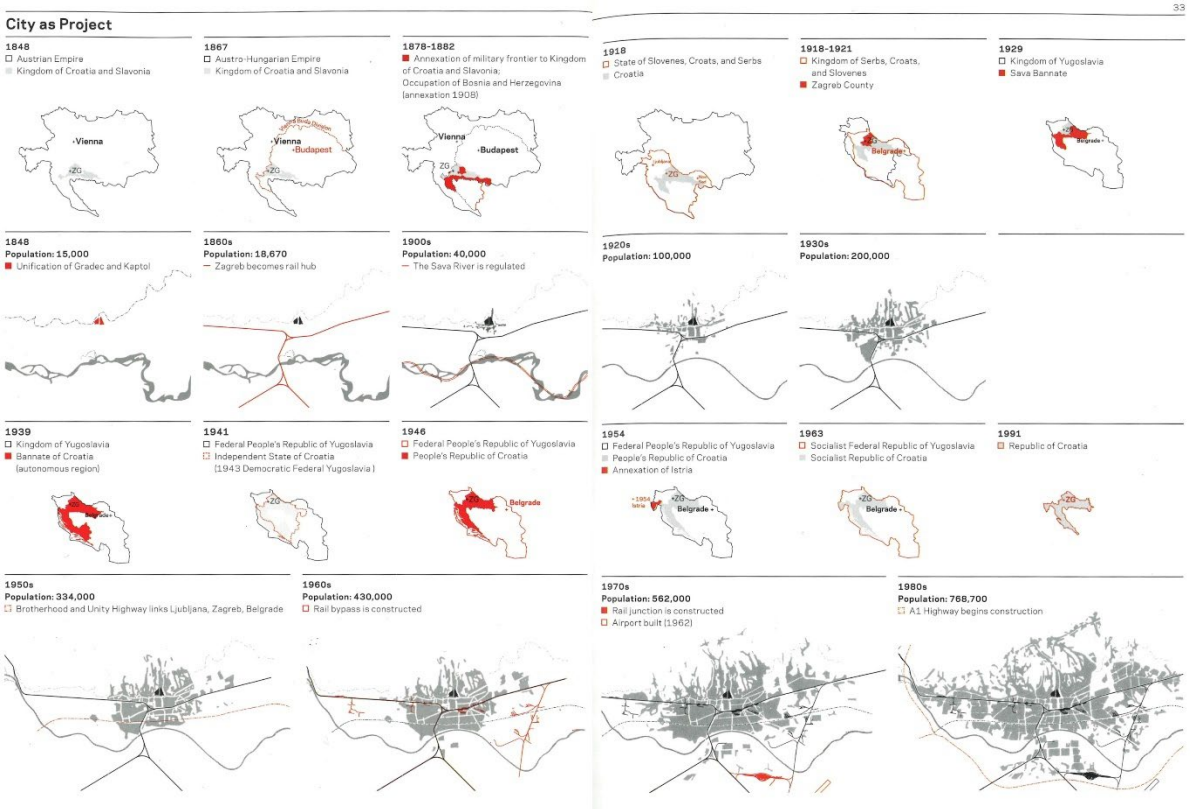
The administrative role of Zagreb and its favourable geographical position influenced its economic and spatial development, from the beginning of the 19th century to the mid-20th century, as well as the changes in the landscape.

Gradec, Kaptol, Nova Ves and Vlaška Street, with the ambient quality mostly preserved, were united in 1850, along with the suburbs and the associated villages, into the city of Zagreb. At that time, in addition to construction activities in the narrower city area, great attention was paid to the design of city parks (Ribnjak and Maksimir - the first public park in 1843). The previous spontaneous urban development of Zagreb, that adapted to the topography and conditions of the location, is replaced by regulatory planning of the city, in accordance with the importance of Zagreb as a peripheral center within the Austro-Hungarian monarchy. Since the middle of the 19th century, a series of urban planning regulations of lesser or greater detail followed the existing directions of historic streets. The city expands from east to west, with the straight-line

diagonal of Savska Street and the linear system of railways through the lowland area of the city, with a dominant direction towards the southeast (the city of Sisak) and a branch to the south (the city of Karlovac). The year 1862 was marked by the construction of the first railway line through Zagreb (connection with the Vienna-Ljubljana-Trieste railway), which limited the spatial expansion of the city to the south, directing growth towards east and west. In the following decades, the railway became an obstacle in the urbanization of the area between the railway and the Sava River. Urban regulation of the lowland areas, stimulated by the emergence of a rich middle class, merchants and bankers, led to the growth of a new urban center – the Lower Town (from Ilica and Jurišićeva in the north, to the railway in the south, Savska and Kolodvorska Streets in the west, and Draškovićeva Street in the east). The orthogonal scheme of the block matrix with numerous city palaces was emphasized by the newly built buildings dedicated to culture, art, and science, as well as the landscaping projects, the so-called Lenuci's Green Horseshoe. South of the railway line, opposite the new railway station, the construction of a river port was planned, and the Sava River became an integral part of the city's landscape for the first time, although only in plans.

The first cores of unplanned neighborhoods for the lower income population were emerging in Trnje and Trešnjevka districts, while at the same time residential and rural areas on the northern wooded hills, were built mostly for the more affluent residents of Zagreb.

The devastating earthquake that struck Zagreb in 1880 resulted in the classicist and neoclassical renovation and modernization of many dilapidated neighborhoods and buildings in the urban landscape, as well as in stricter building regulations (e.g. the ban on building more than three floors above ground, which conditioned the morphological structure of the Lower Town). The detailed planned expansion of the city in the east-west direction continues. Two spatial units of Zagreb are recognizable in the plan, one in the north (the area of urban blocks next to the railway and the summer houses in the foothill of Medvednica), and a smaller area in the south towards the Sava River which was planned for the industrial



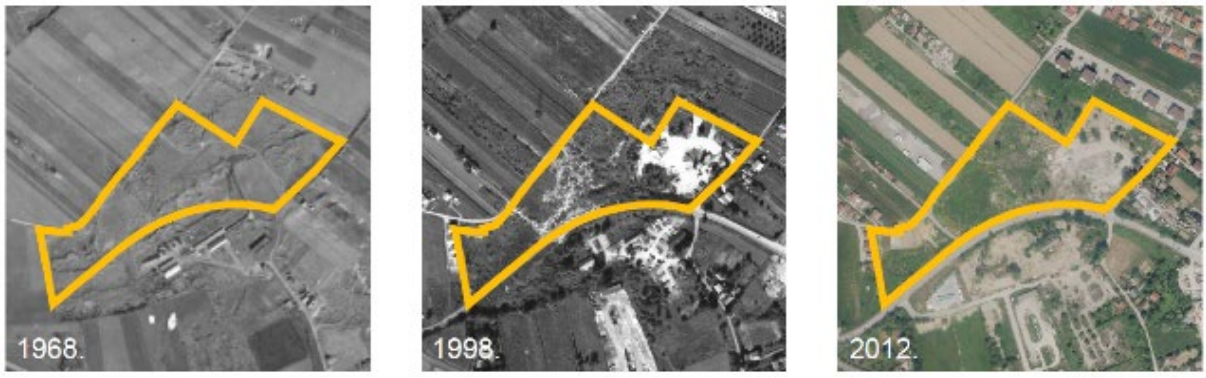
Changes in the historical matrix of the city

complex of the engineering workshops of the Hungarian State Railways. For the area south of the railway to the Sava River, only the basic regulation of the main roads was indicated, which influenced spontaneous and uncontrolled development of this area and other peripheral zones.

The great change of the landscape and the urbanization of the eastern part of the city at the very end of the 19th century was influenced by closing of the bed of the Medveščak stream and the construction of a drainage channel from Harmica to the mouth of the Sava River. Along with the earlier diagonally laid Savska Street, this represented the second radial axis that emphasized the dynamics of Zagreb's urban matrix of the lowland area. The central axis of the city's expansion towards the south was planned in the 1930s: instead of the previous linear expansion in the east-west direction the development of the city was directed towards the south, to the areas of the northern and southern banks of the Sava River. The next urban regulation from 1953 accentuated the central compositional axis of the city, as an extension of the park squares of Lenuci's Green Horseshoe (Zrinjevac), towards Trnje and to the southern bank of the Sava. In this way, the centuries-old tendencies of the spontaneous development of the city in the west-east direction have been redirected in terms of planning.

The most significant modifications of the landscape have been taking place since the middle of the 20th century: thorough political, economic and social changes encouraging industrialization and urbanization, strong migration and an increase in the number of inhabitants, which led to a large expansion of built-up areas into the former agricultural landscape of the Sava plain, lowland peripheral areas, and the Medvednica foothills. Several settlements from the suburbs were annexed to the urban area of Zagreb (Kustošija, Dubrava, Podsused, Stenjevec, Vrapče, Špansko, Mlinovi, Gračani, Šestine, Remete, Markuševec, etc.).

The appearance and structure of the previous landscape of the riverbank was changed by the construction of the residential areas south of the Sava River in **Novi Zagreb** and implementation of large park and recreational areas in the second half of the 20th century. The active life of the city on the river, whose meandering course in the central part of the city was regulated by interventions at the end of the 19th century, lasted until the great flood of the Sava in 1964. Since then, the construction of a high embankment has changed the image of the river landscape. The regulated river in the city matrix becomes a new geometric landscape figure placed symmetrically in the axis of the medieval twin city on the north coast. Numerous backwaters and meanders disappear, and the city area is separated from the river by embankment. By repurposing the agricultural landscape and the expansion of the city towards the south, the urban development of the areas of the working-class neighborhoods of Trnje (with the exception of the modernist avenue along which key administrative, political and cultural institutions were planned), Trešnjevka and Pešćenica was skipped for many decades, leaving them to unplanned and informal construction adjacent to the cores of former villages, or alongside existing infrastructure. By



Aerial photos of the project zone 1968, 1998, 2012

the Second World War, this kind of suburbs - developing periphery of a lower-ranking social class – made up almost half of the built-up city territory, depicting the social topography of Zagreb at the time in space.

The city's crossing over the Sava was initiated in the middle of the 20th century by the construction of a bridge in the central axis of the city in 1959 and the first public facilities on the southern (right) bank of the river, the Zagreb Trade Fair complex and the military-research complex of the Naval Architecture Institute. The urban landscape of southern **Novi Zagreb**, with new residential areas planned according to the concepts of the Athens Charter and the principles of the functionalist city with an orthogonal, geometric scheme and free-standing apartment buildings surrounded by large green areas, has set new criteria for residential construction and housing culture in Zagreb. The idea of housing communities for several thousand inhabitants is a direct embodiment of activist ideas from the late 1950s and early 1960s. In the planning of the **Novi Zagreb** neighborhoods, the cultural and artistic institutions as carriers of the spiritual values of time and space have often been overlooked. However, the high-quality affirmation of local landscape peculiarities as well as certain toponyms have been preserved. The applied principles of CIAM urbanism (not always consistently implemented) - housing, working, traffic and recreation - are being reevaluated today through the concept of the 15-minute city, as well as through valuable park and garden projects, "manufactured nature" which are integral parts of residential communities, becoming important components of the green infrastructure system of contemporary Zagreb. The construction of other infrastructural facilities (traffic and water engineering) introduced significant spatial changes and generated further development.

Medvednica foothills landscape transformation in this period is even more evident. Apart from the high-quality examples of regulated residential districts construction in the inner-city area, spontaneous development along the historic cores of former villages, along existing roads and paths in some places resulted in areas of degraded value. This is especially visible in the areas south of the river where traditional villages - previously sparsely populated suburbs - transformed into the substandard outskirts of the city with inadequate social and communal infrastructure. The postmodernist city planning phase began when population growth ceased during the 1970s, along with the transition from expansionist to consolidation urbanism based on the transition from the collectivist socialist paradigm to the liberal capitalist paradigm. Filling in the urban matrix by increasing urban density to achieve a more compact city limited the sprawl, but under the pretense of urban renewal and urban affirmation neighborhoods are often densified by converting green spaces into buildable land. A positive example of partial urban planning interventions is the 1980s, when the city hosted the 1987 Summer Universiade. On that occasion numerous public, green and sports facilities were built and renovated, including the Jarun sports and recreation center next to the Sava River, an important component of the city's green and blue infrastructure.

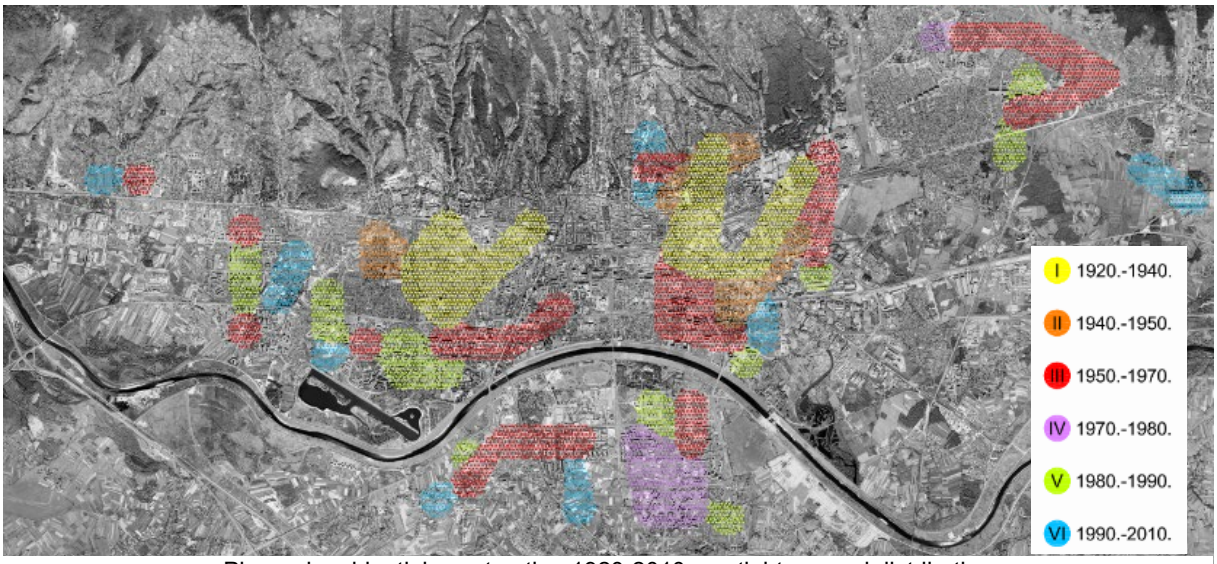
The re-evaluation of private properties and private investments shifted the urban-planning focus from spatial entities to individual land plots. The decrease in investment and organizational capacity of the City caused the so-called locational urbanism, reflected spatially by a significant increase in construction of private residential and commercial buildings, often not accompanied by the construction of the necessary technical, transportation and social infrastructure, with reduced public and social facilities, public parks and recreational areas in comparison to the modernist planned city.

2.4. Basic spatial data

2.4.1. Demography and migration

In the last 30 years, Croatia has had a continuous negative natural population change with emigration trends that have been intensified by joining the EU (from the 2011 Census to the 2021 Census, the number of inhabitants decreased by 9.6%), while in Zagreb there is a trend of stagnation with a slight decrease in the population of 2,9%.

Statistical indicators of the natural population change and population migration indicate that



Planned residential construction 1920-2010, spatial-temporal distribution

the City of Zagreb is not self-sustaining but grows through immigration from other counties of the Republic of Croatia. In the last three years, there has been a trend of increasing the number of foreign workers, currently around 20,000 in Zagreb. At the same time, the process of emigration from the City of Zagreb to other EU members is taking place, as well as emigration to the neighboring Zagreb County, due to lower housing costs.

The aging trend is continuously present and the average age in the City of Zagreb is 42.9 years, which, along with the emigration factor, causes a continuous decline in the working population. In the educational structure, there is a continuously positive trend of growth in the share of highly educated population, significantly higher than in other Croatian counties.

2.4.2. Economy

Despite occasional challenges, such as global economic crises and pandemics, the Croatian economy is currently showing stable growth based on service activities, predominantly tourism. For that reason, and because of the predominant free-market ownership model of housing, real estate prices and housing unaffordability are rising. Three decades after the country's independence, a National Housing Policy Plan is being developed for the first time (currently in the decision-making phase). The City of Zagreb is economically the strongest and richest region of the Republic of Croatia with a share of 34.3% in the total GDP (2021), and a pronounced share in the information and communication areas, financial and insurance activities, as well as professional, scientific, technical, administrative and auxiliary service activities. In 2021, the highest GDP per inhabitant in the Republic of Croatia was recorded in the City of Zagreb and was 71.9% above the national average.

Zagreb is the largest labor market in the Republic of Croatia, with over 30% of employers and about 40% of the total number of employees.

2.4.3. Housing

The total number of households in the City of Zagreb is 300,329 (2021). In the inter-census period (2011-2021) the population in the City of Zagreb has decreased by about 3 %, the number of private households decreased by 1.0 %, while the total number of residential units increased by 3.0%. The data indicates a change in the character of the use of dwellings, with an increase in the use of residential space for rent. The large share of home owner families in the City of Zagreb (80%) is conditioned by the transitional socio-political and economic processes that encouraged the purchase of social housing units. Also, there is a lack of organized housing policy to provide quality and affordable housing units for rent, as is the case in cities in Western Europe. Purchase of dwellings is often motivated by the

need to save or increase personal assets, and the increase in the housing stock cannot be interpreted as an increase in the standard of living and the quality of life of all citizens.

The City's housing fund consists of 4,374 dwellings owned by the City of Zagreb, 2,192 dwellings owned by the city's public institution Zagreb Holding Ltd. and 205 dwellings co-owned by the City of Zagreb and third parties. Out of the total number of dwellings, The City of Zagreb rents out 1.7% at a protected rent.

In the City of Zagreb, on average, smaller apartments are built, and 48% of the housing stock consists of studios or one- and two-room apartments. Often three different generations live in the same housing unit, which indicates a quantitative shortage of the housing stock. The average surface area of a newly built home in 2020 was approx. 74.2 m². After an extremely sharp increase in the number of newly built homes until 2007, a sharp decline followed, and in 2015 an increase of newly built homes was recorded again, with a slight decline in 2020. In 2021, a continuous increase in the construction of new homes is evident. In the earthquake that hit the City of Zagreb on March 22, 2020, a significant part of the housing stock was destroyed. In addition to the problem of rebuilding the city after the earthquake, there is also the problem of 'apartmanization' (massive use of homes for short-term tourist rental), which is detrimental to affordable housing. Also, one of the long-standing spatial problems related to housing policy and spatial planning is the absence of building plots ready for individual residential construction (detached, semi-detached and built-in family houses).

2.4.4. Formally planned and informal housing development

Planned housing development in the City of Zagreb has always reflected wider social, political and economic processes throughout history, following the dynamics of modernization and urbanization. At the same time as planned construction in the city area, uncontrolled informal construction of lesser or greater intensity is continuously present. It expanded to large parts of the city periphery in certain developmental periods and certain social and historical circumstances due to current needs of the population to exercise their primary right to a home (immigration to the place of work/schooling, natural disasters - floods and earthquakes, the Homeland War).. In attempts to solve the housing crisis, this informal housing was acceptable, even tacitly tolerated by the authorities in certain moments of economic crises and political instability.

After the first processes of industrialization in the 19th century, housing development between the two world wars, after the Second World War and after the beginning of the development of Novi Zagreb as the largest polygon of housing development at the level of Zagreb, but also of the country, in the mid-1970s the housing development program in Croatia was adopted. Socially-oriented housing development, "DUSI", which, as a guiding urban-architectural program, in addition to the technical requirements for residential units, also referred to the urban standard and spatial-planning features of the neighborhood. According to DUSI, the residential areas of Dugave, Sloboština, Travno and Sopot were realized in **Novi Zagreb**.

After the Homeland War (1991-1995), Zagreb enters a transitional period that brings significant changes in housing planning. The privatization of state-owned companies and housing market liberalization, along with the strengthening of the institution of private property, led to a reduction of the state influence on urban planning. The national level State-Subsidized Housing Construction Program (POS) was created in 2001 based on the standards of socially oriented housing development, with the aim of ensuring affordable dwellings at a lower than market price per square meter. The programs are implemented in areas of resolved ownership structure, including different sizes of housing, and integrating essential public facilities for the neighborhood. In Zagreb, these are the neighborhoods of Španska-Oranice (former military barracks) and Sopnica-Jelkovec (former pig farm), and Podbrežje and Zapruđe – East in **Novi Zagreb**. Apart from the Zapruđe-East neighborhood and including the neighborhood of Vrbani III (not part of POS program), these neighborhoods can be compared, by the area, the number of dwellings and the housing standard, with the

planned Zagreb housing estates from the socialist period. These projects showed how a planned approach and targeted support can provide affordable housing, but they also pointed out the importance of integrating these neighborhoods into the wider infrastructure and of careful determination of target demographic groups. Today, the possibilities and limitations of Zagreb's residential spatial development range from raising the level of communal infrastructure and facilities of built residential areas, (where possible due to spatial and other constraints) and the lack of larger planned areas for systematic and modern housing construction that is financially accessible to the average Zagreb resident. Despite the challenges, such programs of planned and organized housing construction remain crucial for sustainable fulfillment of housing needs in Zagreb, as well as for prevention of informal and illegal forms of self-construction. These are often built on non-building areas (green and recreational zones), or on communally unequipped land, endangering the city's spatial resources and permanently changing the appearance of the city's (neglected) peripheral areas, creating specific neighborhoods spatially and socially isolated from the rest of the city with long-term consequences of spatial disorder and socioeconomic segregation, and, as a result, large costs of urban improvement (e.g. in **Novi Zagreb**, the extension of the old villages of Glogovec, **Sveta Klara**, Jakuševec, Hrelić, etc.).

2.4.5. Accessibility of social infrastructure

The City of Zagreb is home to the largest public university, important health and numerous cultural institutions. Most of the institutions are concentrated in the wider city center. As a unit of regional self-government, the City provides an extensive infrastructure for preschool, elementary, high school education, primary health care, culture and sports. The City of Zagreb has been planned by the General Urban Plan (GUP), from 1971 until today, with a network of sub-centers with locally available basic social infrastructure, according to the modern concept of the '15-minute city'. The transition to a new social and economic model at the end of the 20th century continued the urban tradition of planning a branched network of social infrastructure, but the dynamics of realization did not follow the development of free-market residential construction. The lack of realized (albeit planned) social infrastructure is visible in the newly built areas of **Novi Zagreb** (part of the city south of the Sava River), such as the **Sveta Klara** neighborhood.

2.5. Strategic framework of spatial development of the City of Zagreb

2.5.1. General Urban Plan of the City of Zagreb

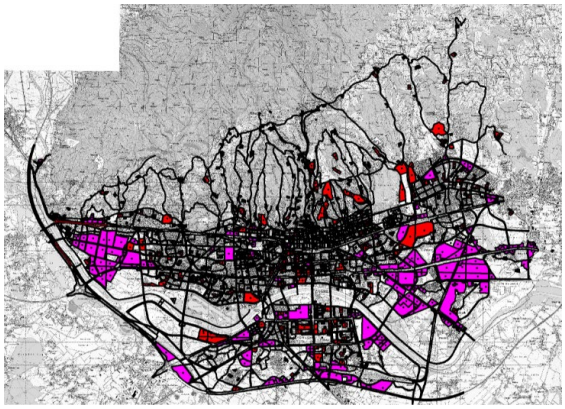
The reference spatial planning document for the City of Zagreb is the General Urban Plan of the City of Zagreb (GUP), adopted in 2007, with several amendments. The Plan is both a strategic and implementation spatial plan, coordinated with national documents and guidelines for spatial development. The process of new amendments to the Plan that started in 2023 is underway.

Green urban renewal and consolidation of the urban area are complemented with new targets from amendments to the Plan, particularly emphasizing: *(I)* Integration of public needs and public interest (with a focus on **affordable housing** - wide spectrum of housing provision modalities for implementing targets set in Urban agenda for European Union, including social housing, affordable rental housing and affordable home ownership); *(II)* Zagreb greener city – harmonizing with EU green policies (increasing resilience to climate changes, green infrastructure, application of nature-based solutions, circular management of land and buildings, use of alternative fuels and renewable energy sources; *(III)* Revalorization and improvement of spatial qualities - preservation of values and identity of space.

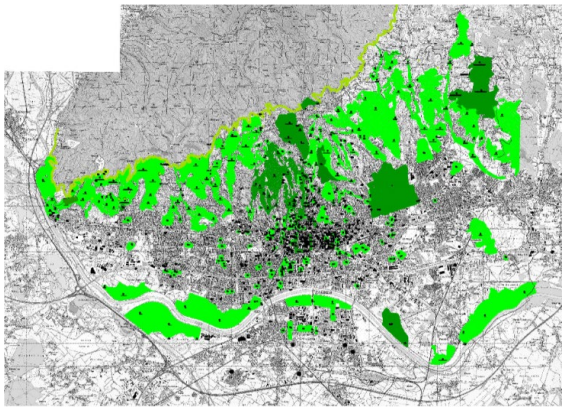
Within the housing policies, **affordable housing** is defined in the context of housing costs for families below the average income level, but above the risk-of-poverty threshold. The common upper threshold of affordability is total housing cost being less than 30% of the net household monthly income of the household. The lower limit represents the risk-

of-poverty threshold where the welfare state mechanisms are activated.

The aim of accessible affordable housing development is to promote the concept of polycentric and sustainable spatial development that can mitigate the demographic decline in the most vulnerable areas, creating conditions for attracting younger population, according to the concept of social inclusion, equal access to public and other services, the right to work and personal advancement, by using potentials of new technologies and green entrepreneurship. In this context, the transport infrastructure system should support the development of an optimal system of neighborhoods, balanced regional development, mutual complementing of rural and urban areas with connection to European transport systems and urban networks.



Economic and social activities network, GUP



Protected and registered landscapes, GUP

2.5.2. The Development Plan of the City of Zagreb for a period until the end of 2027.

The *Development Plan of the City of Zagreb* for the period until the end of 2027, as a medium-term strategic planning act of local and regional self-government units, recognized the importance of the topic of housing. As housing developmental needs, the following are highlighted: the development of a system of social housing and the provision of capacities for development of organized housing and residential communities.

The aim of specific goal 11. *Improvement of the asset management system and entire city area management* is to improve the planning and use of the entire city area, with an emphasis on spatial plans and the need to use new and contemporary planning approaches, especially in context of climate change adaptation, planning of green infrastructure, and managing municipal property. Measure 11.3. *Effective management of municipal property and further development of the public housing program* includes implementation measures for active land-use policies and further development of public housing programs.

See link.

2.5.3. Strategy of Green Urban Renewal of the City of Zagreb

The Strategy of Green Urban Renewal of the City of Zagreb is a strategic basis for the period from 2023 to 2024 and defines the following goals: systematic and sustainable management of green and water surfaces, development of the green infrastructure network of the City of Zagreb (further referred to as GI) and establishing circular management of buildings and spaces and inclusive management of green infrastructure.

In addition to the aforementioned principles of GI planning, the GI development strategy introduces the 3-30-300 rule, ensuring constant contact with urban nature for residents (every window or balcony has at least three trees in sight, residential area consists of at least 30% green areas, every household in a residential area has a public

park not further than 300 m away).

Another important approach in the GI development strategy is the concept of a fifteen-minute city, implying walking or moving by means of sustainable mobility for performing daily tasks. Besides availability of necessary facilities, it is very important to provide pleasant areas for daily mobility and to use nature-based solutions (green streets, squares and other areas of public traffic – shading and mitigation of air temperature in the summer, noise, dust and exhaust gas filtration and enhancing the visually-aesthetic qualities of the space).

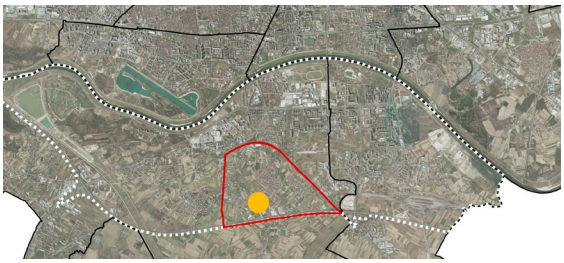
See link.

3| TERRITORY – NOVI ZAGREB

3.1. Scope

Novi Zagreb is the referential urban context of the reflection site **Sveta Klara** and includes the area from the southern bank of the Sava river in the north to the Zagreb bypass in the south, uniting the city districts of Novi Zagreb - West and Novi Zagreb - East in the parts that are defined by the General Urban Plan of the City of Zagreb (GUP) as a local level spatial plan (large parts of both districts are also included in the regional level spatial plan, the Spatial Plan of the City of Zagreb).

With an area of approximately 36 km² and a relatively low population density (approx. 1,020 residents/km²), the area is characterized by the largest increase in population in the inter-census period (2011-2021), and a 10% increase for Novi Zagreb - west (where the **Klara Nova** site is located). These are areas of recent large-scale construction activity, and therefore also areas of intensive landscape and social transformations.

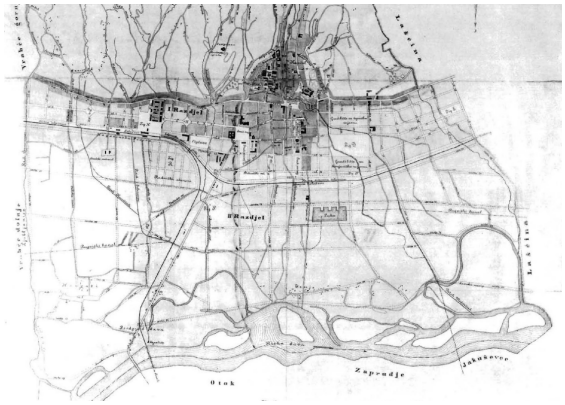


Division into city districts

3.2. Novi Zagreb in historical spatial plans

Zagreb is characterized by an established physical planning system and a spatial planning tradition, since modern planning began with the First Regulatory Basis in 1865 and a comprehensive analysis of its urban (Gradec and Kaptol) and suburban parts. The development of the city was clearly directed over the next 160 years by creating different types and categories of urban and spatial plans, whose structure continuously followed the contemporary trends, respecting the spatial specificities of the Zagreb area, but also the

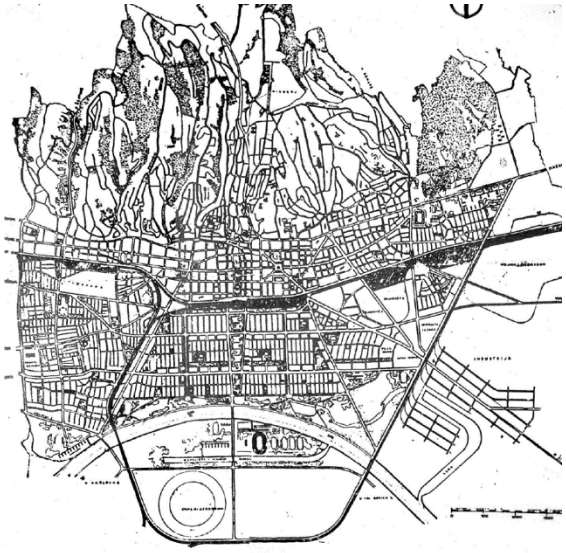
frequent changes of the socio-economic system that opened up new planning topics, some of which have remained relevant to this day (fulfillment of housing needs, informal construction, a city on a river or a river in a city, etc.).



Detail of the Second Regulatory Basis, 1887/1889

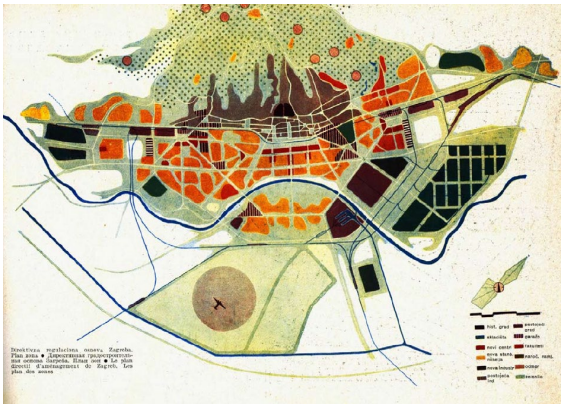
The area of the left (northern) and right (southern) banks of the Sava River has for decades been recognized in spatial plans as a predominantly undeveloped and only partially planned periphery, a green background without identity, dotted with winding roads or groups of houses, backwater of Sava river and floodplains. The space gained importance due to the need to relieve the city center from rail freight traffic. Based on the 1932 regulation proposal, the final redirection of freight traffic was defined during the 1960s by selecting the final location of the marshalling yard. By planning the basic traffic network in the area south of the central corridor of the main railway station and by mirroring the central city axis in the north-south direction, laid through the top of the arch of the regulated Sava River (after centuries of floods), a clear conceptual matrix was set for further spatial development. Since then, the southern expansion of the city has been determined by successive multiplication of the orthogonal matrix of the left bank, and later (after an international competition and a Regulatory plan from 1937) the same urban planning gesture was transferred to the right bank by extending the central axis and the bypass over the Sava River in the west-east direction.

According to the Directive Regulatory Basis (1949), the right bank was intended for sports and recreation, planned as an extensive green



Regulation of the City of Zagreb, 1937

zone with sports fields and playgrounds, swimming pools, central city stadium and a zoo - a spatial-planning concept of green infrastructure, preserved to this day. Basically, this space remains an insufficiently defined green border of the city - the landscape correlating to the Medvednica mountains in the north.

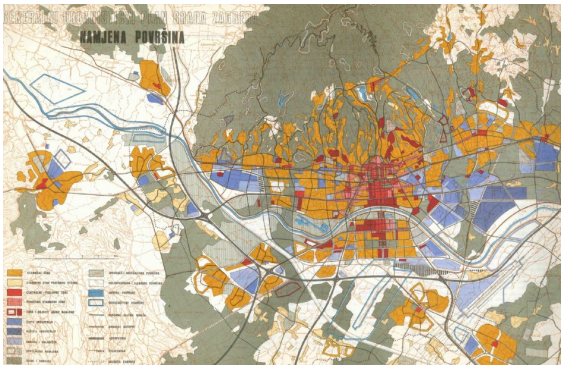


Schematic plan of zones in Directive Regulatory Basis

Infrastructural interventions on the right bank of Sava, which began with the construction of the Naval Institute military research complex, the relocation of the Zagreb Fair and the construction of the central bridge in the 1950s, stimulated a new wave of urbanization. Abandoning the landscape paradigm of development on the right bank, introducing the legal innovation of construction land nationalization (neglecting the cadastre of the ownership structure) and the principles of

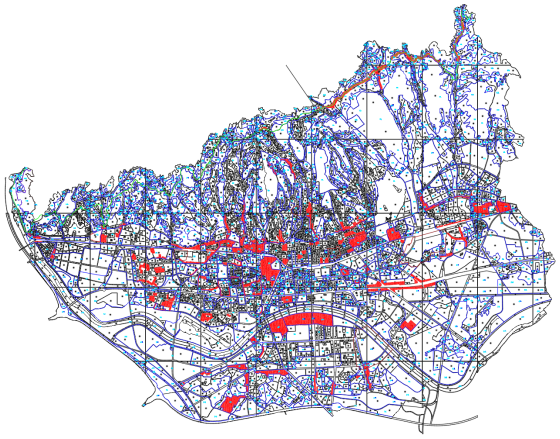
functional planning are the foundations of development of **Novi Zagreb** as a territory for implementation of industrialized and mass housing construction. Through the existing infrastructural coordinates, a strong traffic matrix was interpolated, which determined the polygons of future comprehensively planned residential neighborhoods and communities gathered in larger districts, designed as administrative, cultural and public centers with all facilities accessible (by foot) to respective neighbourhood residents, and with extensive use of free-standing building within the landscaped neighborhood.

The 1971 GUP elaborates in detail the idea of a city with a planned population of one million inhabitants by the year 2000, with a boundary of 464 km², including a wider functional area. In addition to prioritizing development of trade and tertiary activities in relation to industrial production, special attention is paid to residential construction and completely equipping neighborhoods with necessary facilities and work zones to avoid monofunctional spaces. A decrease in population in existing residential areas is foreseen as well as an increase in new ones, in residential zones in peripheral areas (due to a higher standard of housing and a higher degree of motorization). Newly planned residential areas of optimal residential densities are concentrated on the main directions of the expansion of the city, while existing individual smaller neighborhoods in the southern area are to be maintained without further expansion. Green and recreational areas are planned to create ecological balance and spatial divisions of city areas whereby public green areas differ in function. In planning of undeveloped areas, a special role has been determined for the banks of the Sava River, especially in the western and central part of the city, where a large recreational zone is planned as a "green expansion" in the compact city structure. An attempt was made to connect the greenery of Medvednica with free green spaces along the Sava river by green penetrations through the city fabric in the north-south direction. The paradigm of green, sports and recreational and public park areas was incorporated into each of the following general plans.



Land-use, GUP of the city of Zagreb, 1971

The general thematic area of the 2003 GUP - and also the basis of all subsequent general plans - is urban consolidation and urban renewal of the city. This urban renewal refers to the entire city: underdeveloped neighborhoods, skipped and underused places and historical urban entities – spaces of Gradec, Kaptol and Lower Town, including modern architecture and 20th century planning. In addition to the land-use plan, an additional planning level - urban rules - is introduced as a result of the structuring of space into highly differentiated urban units of unique physiognomy features, originally presented character and identity, and detected spatial problems. The urban rules define operational norms for the dimensioning of spatial interventions as well as for the new regulation of space. In addition to the specified implementation scheme, GUP also contains comprehensive urban strategy measures for management and governance of space as a fundamental urban asset. In contrast to the 1986 GUP, in which urban consolidation and urban renewal of the city meant spatial planning exclusively for the developmentally skipped central part of the city between the railway line and the Sava River, the 2003 GUP implies a renewal of urban culture and culture of urban planning of the city, and consolidation of structures in the entire city area.



GUP 2003, map of urban rules

The majority of residential areas that were created in **Novi Zagreb** from the 1950s to the present day, and the adopted general plans of the city of Zagreb (in 1971, 1986, 2003, and 2007, with subsequent amendments) express the limited affinity of urban planners (with some exceptions, eg the Dugave neighborhood, built at the end of the 70s) to recognize the alluvial and historical specificities of the area south of the Sava, negating existing natural values of the landscape (key resources for the maintenance of biodiversity) and the distribution of symbols of the traditional culture of rural settlements. Although determined by spatial planning documents, even today it is evident that there is insufficient interest in strategic management, i.e. directing spatial development following the systematically designed connection of all the specific layers of natural, rural and urban (non-planned) elements which interweave the territory of the edge of the city, in initiated but never completed contact with the so-called microdistrict agglomerations of the planned city. The selection of the **Sveta Klara** neighborhood with a clearly defined urban rules, and the project site of **Klara Nova** for development through a competition, represents an attempt to find an answer to a prominent problem.

3.3. Urban concept of Novi Zagreb spatial development

At the urban context level, three functional and morphological landscape entities with specific features are distinguished with regard to the

The overlap of historical parceling and the matrix of the modern city

stability of urban matrix and appropriately defined planning methods.

3.3.1. Central high-consolidated areas

These are areas with a high level of urbanity, of so-called socialist planned housing estates, large-scale residential construction built from the 50s to the early 80s, and still highly valued on the list of desirable places to live in Zagreb. Secondary facilities accompanying the housing are: on a larger scale, the area of the Zagreb Fair (a site of strategic importance owned by the city, planned for partial transformation, a development instrument for increasing the value and quality of the wider area, so-called City project), the Naval Architecture Institute, a number of higher education and cultural institutions (Museum of Contemporary Art), and commercial and service facilities.

The state of the area is characterized by gradual degradation of the original concept of the neighborhood by building on fromerly construction-free zones and/or park green areas; some parts (most often along avenues) still have an undefined character; the building fund is being renewed unsystematically and using low-quality reinterpretation of original architectural design; The Zagreb Fair as an area of a new city center development potential is underutilized, and so is the Naval Architecture Institute, an abandoned research center of extremely expensive equipment.

Planning method: applying the principle of the so-called tactical urbanism - by redefining the original planning concept at all levels, identifying and enhancing protection of green gaps, completion of the "edges" and new definition of the content and procedure of the city project - to achieve the goal: considerate completion, preservation of morphological, typological, architectural, landscape and identity character.

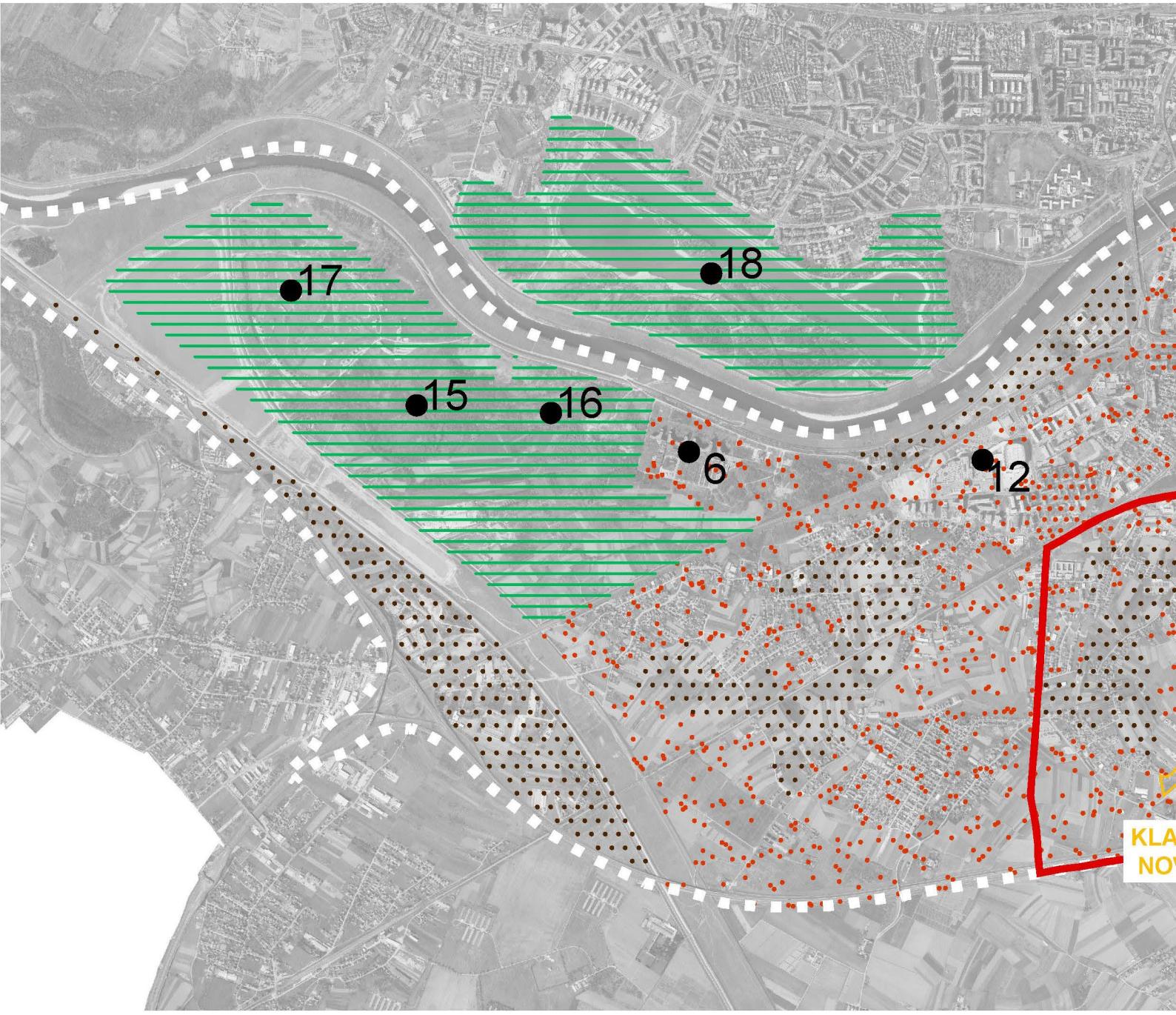
3.3.2. Peripheral consolidated and low-consolidated areas

These spaces are highly fragmented in regard to physical structure and urban facilities, including significant fragments of protective green areas, with two thematic sub-units that stand out.

The first are built spaces of a low level of urbanity with the following characteristics: individual family houses, low-rise and high-rise buildings - remains of old villages with additional construction, areas of older and more recent individual unplanned (without permit) construction, areas of the so-called new housing (not particularly successful examples of the State-Subsidized Housing Construction Program (in short, POS): POS Klara and POS Zapruđe, Zagreb Housing model Podbrežje), new spaces of work, trade and entertainment (Zagreb Arena sports hall and shopping mall) - built from the 1990s until today.

Planning method for built-up areas with a low level of urbanity: by applying the green urban transformation approach - maintaining an appropriate matrix, reducing density, increasing urban standards - to achieve the goal: through tactical urbanism/urban acupuncture, we can recognize which urban facilities are missing in the centrality of old villages and the wider area, and through a reduction of density as a priority, they should be introduced as nature based solutions, particularly on new public green areas (connecting the network of Zagreb's green and blue infrastructure).

The second sub-unit constitutes of partially built spaces with an undefined level of urbanity and the following characteristics: building area of the outskirt zones of individual and low-rise building areas that has mostly not been consumed, or has been consumed contrary to the urban rules (in some places the actual densities are lower than the planned ones!), newer mostly high-rise buildings are monofunctional spaces of unregulated urbanity (caused by insufficient planning tools and the impossibility of implementing complete urban planning measures within the framework of the prevailing market housing model), inadequate or complete or partial lack of social and communal infrastructure (incomplete streets, insufficient public and green spaces, lack of neighborhood facilities), anonymous spaces, and the so-called zones for future development (business zone Hrelić, public use in Sloboština, Marshalling Yard, hospital in Blato, ‘Croatia’ military barracks).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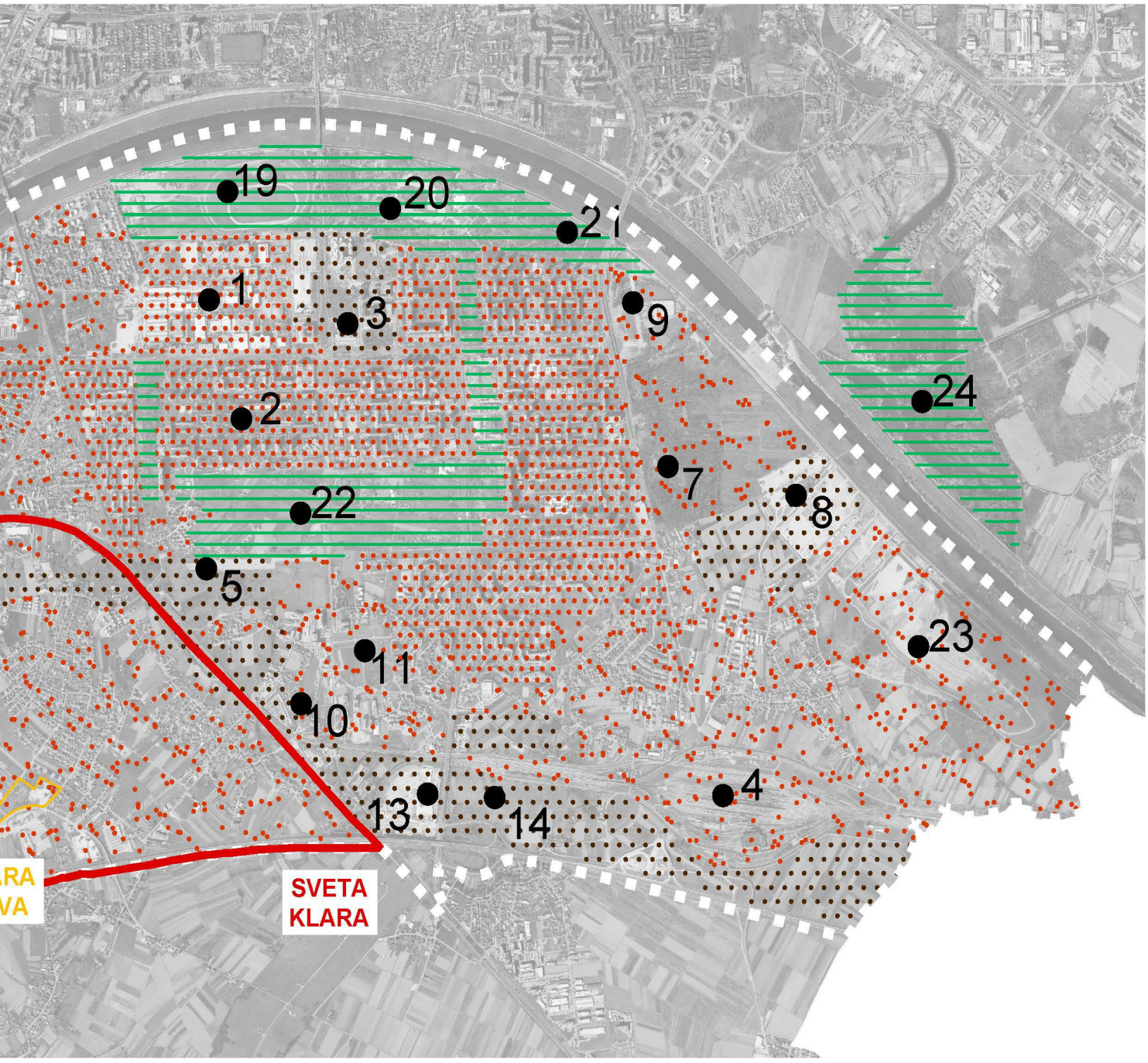


Functional and morphological landscape units of Novi Zagreb

central high-consolidated areas

peripheral consolidated and low-consolidated areas of the new regulations (detailed plans to be implemented – UPU)

peripheral consolidated and low-consolidated areas of green urban transformation

green identity linear area and zones - components of green and blue infrastructure

1 Zagreb Fair

2 Naval Architecture Institute

3 Museum of Contemporary Art

4 Marshalling Yard

5 Podbrežje housing estate

6 Hospital in Blato

7 'Croatia' Military Barracks

8 Hrelić Used Car Fair

9 POS Zaprude

10 POS Klara

11 Sloboština – zone of public and social use

12 Arena Zagreb – sports hall and shopping center

13 Supernova Shopping Center

14 City Island Business Center

15 Theme Parks Mladoles I, II

16 Blato Thermal Baths

17 Blato Golf Course

18 Jarun Lake

19 Hippodrome

20 Bundek Lake

21 Racinjak park

22 Novi Zagreb Park

23 Prudinec Theme Park

24 Savica Park

Planning method for partially built areas of undefined level of urbanity (including the reflection zone **Sveta Klara**): applying the principles of new regulations - the aim of increasing the urban standard of the area is in integration of existing fragmented peri-urban (rural) and unplanned (informal) construction into a planned new and completed residential communities of individual/low density construction - the concept of the **Klara Nova** project site.

The same planning method is applied to undeveloped areas of undefined levels of urbanity along the river - by creating planning prerequisites for the appropriate activation of unconsumed spatial resources - planned zones of mixed use/mixed typology of construction - to achieve the goal of defining the southwestern entrance to the city as well as bringing the city closer to the Sava River.

3.3.3. Green identity linear areas and zones

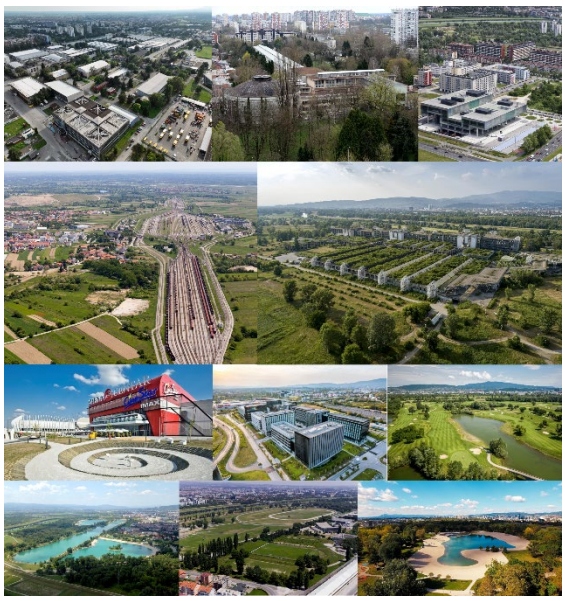
These areas are vast resources of green infrastructure whose level of importance goes beyond the residential neighborhoods of **Novi Zagreb**. Preserved to this day, they were planned in historical regulation plans, urban planning programs and earlier spatial plans.

This space consists of: the central area along the right bank of the Sava – parks and sports and recreation areas of Hippodrome, Bundek lake and Racinjak park; southern part of the western park-recreation axis – Blato Thermal Baths, Mladoles I and II Theme Parks, Blato Golf course (on the northern part of the axis, and along the left bank of the Sava with Jarun Sports and Recreation Center, outside the scope of the territory); the southern part of the eastern park and recreation axis – Prudinec (landfill in the process of remediation) with the possibility to become a sports theme park; on the northern part of the axis, i.e. along the left bank (outside the territory) is the Savica ornithological park (further north, the Borongaj student campus and Maksimir heritage park);

the central construction-free part of **Novi Zagreb** - Novi Zagreb Park.

Only a small part of the space is formally used (the central area near Sava River).

Planning method: By applying the principle of building using a void – by taking thematic units into account and building in phases, affirming existing and introducing new natural and semi-natural thematic spatial attractors in order to contextualize Zagreb's green and blue infrastructure.



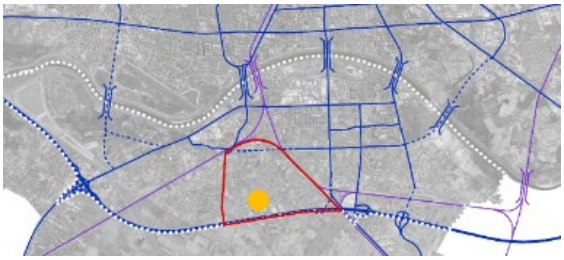
From the left and from the top – Zagreb Fair, Naval Architecture Institute, Museum of Contemporary Art, Marshalling Yard, Hospital in Blato, Arena Sports hall and Shopping Mall, “City Island” Business Center, Blato golf course, Jarun Lake, Hippodrome, Bundek Lake

4| REFLECTION ZONE – SVETA KLARA

4.1. Current state and planning guidelines

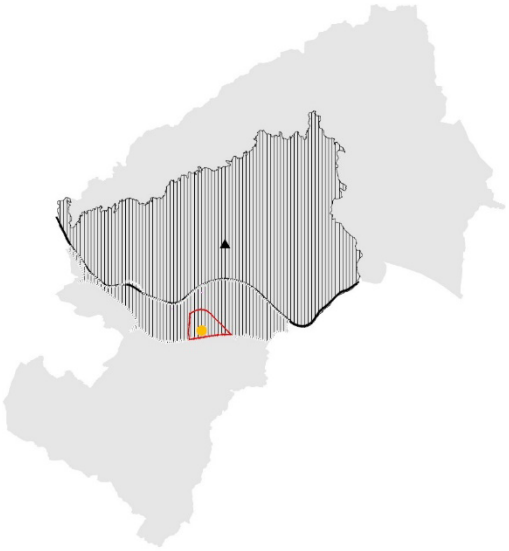
4.1.1. Scope

The reflection site is located on the southern edge of **Novi Zagreb**, within the administrative district of Novi Zagreb - West, primarily within the jurisdiction of Sveta Klara local committee and partially within the jurisdiction of Botinec local committee. It is situated approximately 6.6 km from the city center. The boundaries of the area are defined by the Karlovac–Sisak railway line to the north and east, the Zagreb bypass to the south, and the route of Dr. Lujo Naletilić Street, partly existing and partly planned, to the west.



The primary network of existing and planned roads, bridges and railway lines

The area covers approximately 410 hectares. In terms of construction typology and level of consolidation, it represents a suburban fringe of Zagreb, developed on a matrix of rural agricultural parceling. It is distinctly separated from the broader context by infrastructural corridors, where the edges of highly consolidated planned residential areas of Novi Zagreb are apparent.



Position of the site within planning documents scopes

area of the Zagreb Spatial Plan

area of the Zagreb General Urban Plan (GUP)

historical city center

Sava River

4.1.2. Urban Standard

With simultaneous coexistence of planned and unplanned urban fabric of non-specific identity (apart from the former village center of Sveta Klara with the church and several recent buildings), and the ratio of land uses - mixed, predominantly residential and business zones - along the existing and/or planned high-traffic roads, the urban standard of the area is mostly inadequate. This is evident in the lack of public and social facilities (either unplanned or planned but not realized), a substandard transportation and infrastructure network, fragments of residential construction with inappropriate densities on pre-existing agricultural plots - both inside and outside of building areas (examples of illegal construction), and the lack of a green infrastructure network.

The built environment is predominantly comprised of family houses and small multi-family buildings up to two stories high, where the second story is usually an attic or recessed floor. The predominant typology is detached or semi-detached housing with relatively high density. Key facilities include the church with the adjoining square and cemetery, a primary school, a playground, and a fire station in the center of Sveta Klara near Mrkšina Street. Additional facilities, small crafts, and quiet businesses are mostly located on the ground floors of residential buildings and family houses.

Despite being planned by spatial planning documents, often the zones for public and social purposes remain unrealized, although they could be directly implemented through the General Urban Plan (GUP) without requiring more detailed plans. At the same time, the number of newly built housing units is rapidly increasing, primarily due to the cheaper cost of housing compared to other parts of the city. The historical development of the area and the inability to fully regulate its growth have been significantly influenced by the lack of land consolidation instruments and other instruments for building land regulation. This has resulted in a deficiency of adequate open formal or informal public spaces. Nonetheless, there is potential for their development: within the scope of the reflection zone, there is an evident planning concept for creating several community sub-centers of varying degrees of realization. Urban development plans also propose additional sub-centers.

1a	public and social land use – proposal (kindergarten and school)
1b	public and social land use – proposal
1c	public and social land use – proposal
1d	public and social land use – proposal
2a	public and social land use – kindergarten – proposal
2b	public and social land use – kindergarten – under construction
3	public and social land use – elementary school – existing
4	public and social land use – religious – existing
5	public and social land use – existing prison

public and social sub-center

urban development plan – adopted plan

urban development plan – proposal for creation

Larger commercial zones along the planned extension of Vatikanska Street and south of Sisačka Road encompass office facilities (e.g., Infobip HR), retail-warehouse facilities (DHL, Medikal, Oktal Pharma, etc.), and production facilities (concrete plant).

Urban greenery consists of larger areas of protective greenery (mostly undeveloped privately owned land, some used as plant nurseries) serving as a buffer against incompatible uses (high-voltage power lines) and supporting a sustainable balance with buildable areas; smaller unrealized public parks lacking a concept of interconnection and

Public and social Sub-Centers of Sveta Klara

differentiation in importance within the green infrastructure system; the Klara Community Garden (temporary use); and undeveloped planned zones for sports and recreation without construction.

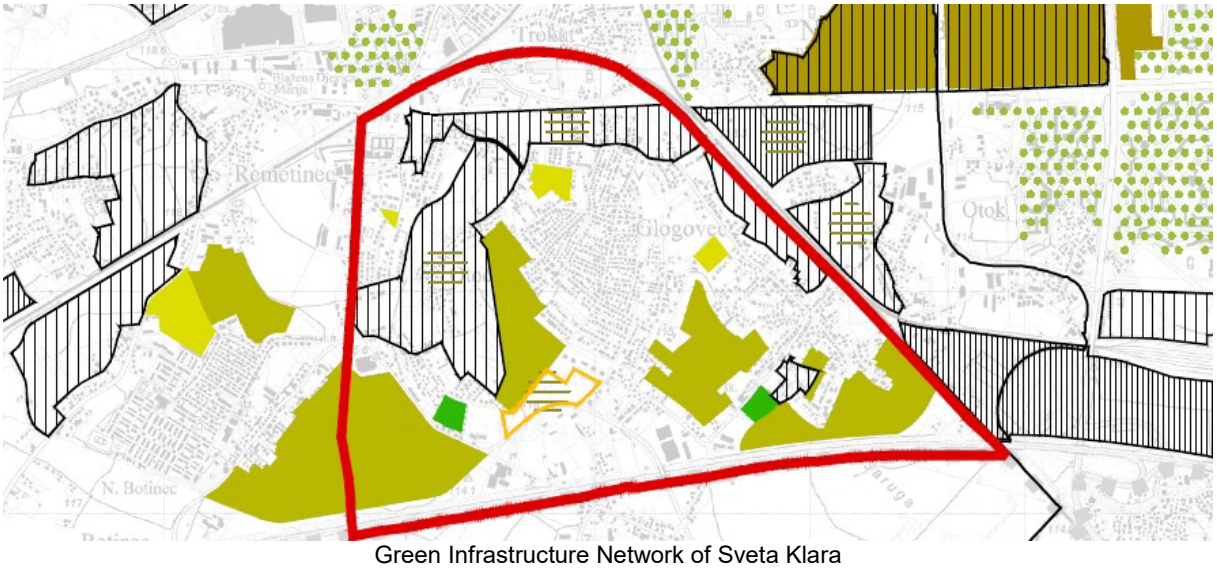
For the larger undeveloped mixed-use areas, the creation of Urban Development Plans (UDP) is planned. These areas are planned for mixed-use developments, including high-quality housing and accompanying facilities for the neighborhood and its wider surroundings, following contemporary urban planning standards (sustainable mobility, green infrastructure network, application of NBS, etc.).

Evaluating the Sveta Klara reflection zone as a whole reveals a space with significant development potential. By applying appropriate urban policy mechanisms, urban renewal can accommodate the transformation and revitalization of the existing, as well as the affirmation of new developments, within the framework of existing spatial strategies and concepts.

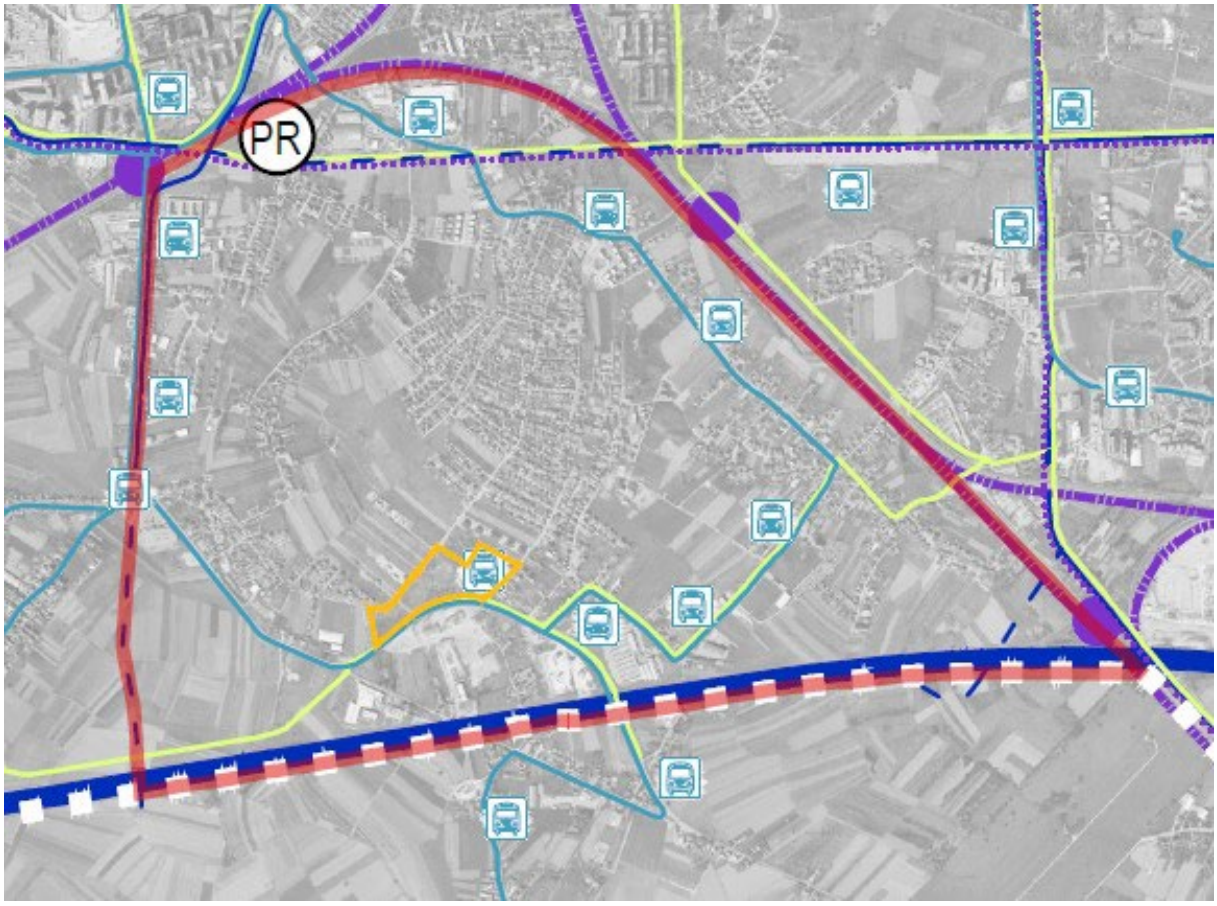
4.1.3. Population and housing

The local committee of Sveta Klara, part of the Novi Zagreb - West district, which is slightly larger than the broader scope area, had a population of 11,097 according to the 2021 census. This represents a 16% increase compared to the 2011 census, with an increase of 1,537 residents. The local committee covers an area of 4.68 km², resulting in a population density of 2,371 inhabitants per km².

The traditionally predominant lifestyle of multigenerational living is gradually being replaced by housing for newly settled young families (driven by the lower market price of building plots and the recently intensified construction of dwellings), with elderly households of indigenous residents, living a traditional rural way of life, still present.



Green Infrastructure Network of Sveta Klara



Traffic network of Sveta Klara

4.1.4. Transport and Mobility

basic street network – existing / proposed

bicycle lanes

railway

railway stops

bus line

bus stop

park and ride stop - proposal

Sveta Klara enjoys a favorable transport position due to its proximity to key urban and intercity roads. Većeslav Holjevac Avenue and Remetinec Road (outside the reflection zone) connect the neighborhood to the city center and other parts of Zagreb, while the nearby Zagreb bypass and the Buzin interchange provide easy access to national and international routes such as the A1 and A3 highways.

Sisačka Road is one of the main roads passing through Sveta Klara, connecting the southern parts of Zagreb with neighboring areas south of the Zagreb bypass (Odra and Velika Gorica). As part of the broader transportation network, it holds strategic importance for local traffic as well as regional transport flows.

Sveta Klara currently faces challenges in traffic flow, safety and road network, particularly given the growth in residential and economic activities within the neighborhood. The existing road network requires improvements (new traffic corridors, significant expansion of existing ones, inclusion of bicycle lanes, green spaces with tree-lined avenues, etc.) to address issues of safety, capacity, and connectivity. According to GUP of the City of Zagreb, traffic corridors are planned for the extension of Vatikanska Street and Luje

Naletilića Street, which will improve the connection of Sveta Klara to other parts of the city and alleviate pressure on the existing roads.

The nearest railway stops, "Remetinec" and "Zagreb Klara," play an important role in connecting the neighborhood to the city center and surrounding areas, as they are located on two suburban railway branches (toward Sisak and Karlovac). However, they do not provide sufficient regular or fast connections for passengers, leaving the neighborhood insufficiently integrated into the railway network. The lack of adequate pedestrian sidewalks and bicycle paths to the railway stops makes access challenging and compromises user safety, while parking capacities near these stops are limited, discouraging residents from using the railway as part of a Park and Ride system.

Public transport primarily relies on bus lines connecting the neighborhood to the Savski Most tram terminal. However, the bus network is limited, and the frequency of buses does not fully meet the needs of the growing population. The connection between bus lines and railway stations is not optimal and does not provide accessibility to buses and trains for all users.

4.1.5. Infrastructure Network

The area of Sveta Klara is equipped with a developed basic communal, electrical, and telecommunication infrastructure that meets the fundamental needs of its residents. A sewage system for wastewater drainage is in place, and the power grid ensures a reliable supply of electricity. Electronic communications infrastructure provides access to modern communication services.

The Botinec transformer station (110 kV) is situated in the central part of the neighborhood, and several overhead power lines (110 kV) pass through the area. Public lighting is installed along the main roads and residential streets, contributing to the safety and functionality of public spaces.

The gas network has been installed in almost all streets.

Although the district heating network is relatively close, located northeast of Sveta Klara in the Trnsko neighborhood, Sveta Klara is currently not equipped with district heating infrastructure. The absence of a centralized heating supply system may pose a challenge, particularly in terms of energy efficiency and sustainability.

Introducing a district heating network to this area would significantly improve residents' quality of life, enable more energy-efficient heating systems, and reduce greenhouse gas emissions associated with individual heating methods. If the implementation of district heating is not feasible, alternative energy sources should be considered to meet the population's needs in a sustainable manner.

4.1.6. Potential Risks and Hazards

According to Croatia's seismic hazard map, the Zagreb area is among the most vulnerable, as confirmed by the destructive earthquake on March 22, 2020, with a magnitude of 5.5 on the Richter scale. The most tectonically active parts of the structures and fault zones are in the hilly and northern areas of Zagreb, while Novi Zagreb lies in the Sava Basin, where tectonic activity is less pronounced.

In Sveta Klara, areas with elevated temperatures, so-called heat islands, are present in densely built-up residential zones without planned green spaces. To prevent the spread and merging of heat islands, future construction should be planned in accordance with the guidelines for sustainable spatial planning and green building.

Another potential risk for Sveta Klara is the continuation of illegal urban sprawl, which irreversibly depletes spatial resources and damages the landscape.

4.2. Expected proposals at the reflection zone level

- Explore the context of facilities in the project site of Klara Nova, situated within the surroundings of a production-business zone and unarticulated residential construction (north, northeast);
- In line with the topic of **Re-sourcing**, propose scenarios to revitalize the broader community, where the new

neighborhood will act as an integrative factor for all areas of undefined urbanity, primarily through urban regeneration aimed at raising urban standards (the old village of Sveta Klara and its surroundings, the unplanned urban sprawl of Glogovec, and areas planned for new regulations - three zones for future residential neighborhoods);

- Explore the identity profiling of the Sveta Klara area and propose new spatial models that will coexist with the existing ones (programmatic connection and layering, including components of green infrastructure) to strengthen Sveta Klara as a place of participation and engagement for its residents and users, while adhering to spatial planning obligations;
- Propose modifications to the traffic scheme to ensure effective and sustainable connection with public transport, including bus and rail systems, to enhance mobility, encourage the use of sustainable modes of transportation, and reduce dependence on private cars.

4.3. Photo documentation

Church in Sveta Klara center

Fire station

Community garden on Mrkšina Street

Infobip HR office building, Glogovec neighborhood

Traffic network

The ambiance of a characteristic residential street in Sveta Klara

School and church in Sveta Klara center

5| PROJECT SITE – KLARA NOVA

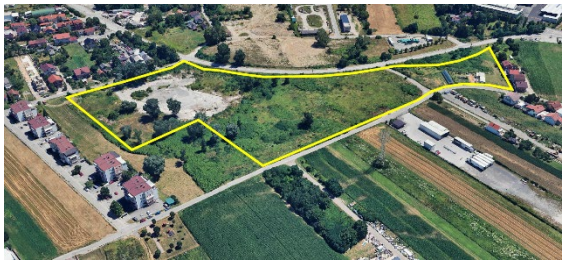
5.1. Current state

5.1.1. Scope and current state

The project site, the area designated for the construction and development of new housing with accompanying facilities, approx. 4.62 ha of surface, is bounded by: construction plot of the kindergarten to the north, Burićev odvojak street in the northwest, construction plot of family houses in the west, and by Sisačka cesta in the south and Sisačka cesta II. odvojak roads in the east.

City of Zagreb is in possession of all plots, and according to the land registry data, approx. 10% of the plot number 2885 of Klara cadastral municipality (less than 1% of the total area) is owned by several natural persons.

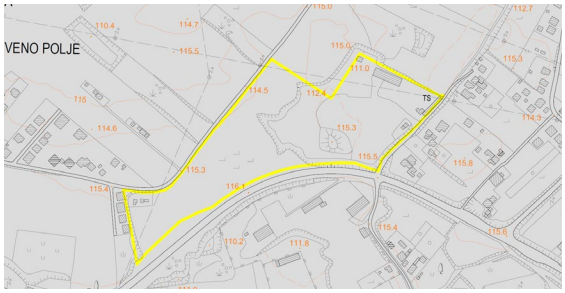
The shape of the area is irregular, the land is undeveloped, without existing construction (except prefab nurseries on the part of plot No. 2886/13), overgrown with wild vegetation, without natural, ambient, functional and design features that should be preserved.



North to south view of the site

The elevations of the peripheral roads are from +114.5 to +116.1 m above sea level. The land within the area is a little lower towards Sisačka cesta (south), and a little higher towards the Burićev odvojak street. The eastern part along Sisačka cesta II. odvojak, a former cement plant, is in a slight depression, with the lowest altitude +111.0 m.a.s.l.

Project site on the orthophoto map and cadastral plan overlay



The site position on the map, 1998

The existing roads that border the area are of substandard width: Sisačka cesta - approx. 9 m (2 lanes and a one-sided sidewalk on the north side of the road); Sisačka cesta II. odvojak - approx. 6 m (2 lanes); Burićev odvojak - approx. 5 m (2 lanes).

The space is equipped with utility, energy and communication infrastructure (Source: Cadastre of Infrastructure System of the State Geodetic Administration):

Utility infrastructure. Sewer system in the part of Sisačka cesta and Sisačka cesta II. odvojak and in Burićev odvojak; water supply distribution in the part of Sisačka cesta, in Sisačka cesta II. odvojak and in part of the Burićev odvojak; public lighting – within the area.

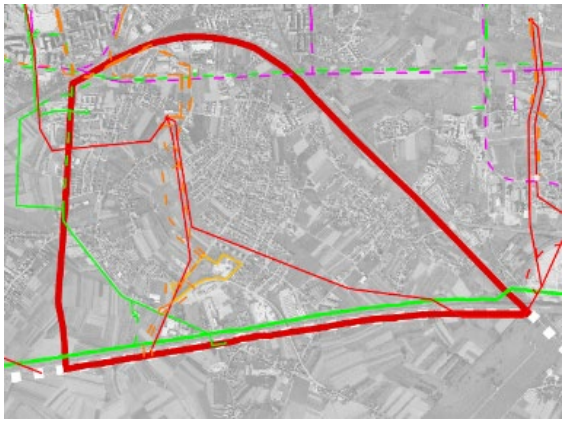
Energy infrastructure. Electrical MV and LV distribution, in the reflection site and project site includes: the nearest substation is located at parcel cadastral number 2886/1 of Klara cadastral municipality (TS 5114); gas distribution consists of a gas pipeline in the part of Sisačka cesta, in Sisačka cesta II. odvojak and in Burićev odvojak.

Electronic communication infrastructure. It is in Sisačka cesta, Sisačka cesta II. odvojak and in part of the Burićev odvojak.

5.1.2. Obligations from Spatial Planning Documentation

For the area, the applicable spatial planning documentation is the GUP of the City of Zagreb, available on the Physical planning information system and ZG Geoportal.

According to the land-use plan, the project zone is planned for mixed-predominantly residential use.



gas infrastructure; overhead power line; electrical energy - cable; heat pipe and steam pipe

On areas of mixed-predominantly residential use, predominantly single-purpose residential buildings are planned, while business facilities that do not interfere with housing are also allowed. Parks and children's playgrounds can be planned on a separate building plot.

Regarding the traffic network, Sisačka cesta is part of the basic network, categorized as city street, while the other roads bordering the future housing project - Sisačka cesta II. odvojak on the eastern side and Burićev odvojak on the northern side - are not part of the basic traffic network of the neighborhood at the GUP level.

Regarding the utility infrastructure network, no existing or planned energy infrastructure buildings are registered by spatial plan within the site. The route of the existing main power line DS 2x110 kV in the north-south direction across the western part of the site is registered in the GUP, and the planned route of the power cable K 110 kV in the Burićev odvojak and in the western part of the site. Also, there are no existing or planned buildings or routes of water management infrastructure within the site. In the corridor of the Burićev odvojak, the existing supply channels of the wastewater drainage network are laid. The project area as a whole is situated in the III. zone of the water protection area. It is necessary to reduce the risk of groundwater pollution from recalcitrant chemicals and radioactive substances. Therefore, the discharge of untreated wastewaters, storage and disposal of waste, construction of waste disposal sites and the construction of roads, parking lots and other traffic and manipulative surfaces without

controlled drainage and adequate purification of storm polluted waters before discharge into a natural receiver is not allowed.

Regarding the conditions for the use, development and protection of space, the project site is regulated by the urban rule “Development and urban renewal of peripheral areas of individual construction (2.6.)”. The provisions for the implementation of the GUP define general and detailed spatial development propositions and detailed rules for construction, which are basis for urban-technical requirements definition of the future residential project, and for planned facilities and structural program that follows.

Although the urban development plan (a more detailed plan than the GUP level) is not required for the area, and neither is an architectural competition, these procedures are enabled by GUP.

There are no protected parts of nature or built heritage within the site.

5.2. Program guidelines

Affordable housing and accompanying facilities should provide a missing urban layer for the development of this fringe area of the city in an integrated way with regard to the wider context, creating new spatial and social relations, new narratives and innovative solutions that build up the community.

Housing affordability required by the competition task can be achieved through urban architectural parameters of certain housing typologies and construction methods (proposal of new plot layout and formation of physical structures); and through specific social strategies - eg. housing models or accompanying facilities that contribute to the family economy (urban gardens), strengthen the community (e.g. workspaces for social entrepreneurship) and reduce dependence on the use of personal cars (emphasis on public transport and non-motorized modes of travel).

Affordable rental housing is planned on the site.

5.2.1. Content program

Detailed land-use ideogram

The competition task is to solve three thematic zones in terms of urban planning, architecture and comprehensive landscape planning:

Residential zone (zone **M1**), where a new residential construction of affordable housing units is planned on the **new plot layout** which will be based on the selected conceptual design.

According to the planning documents, it is an area of individual residential construction, with buildings up to a maximum of 4 dwellings.

The program for the zone requires:

- to plan homes of different sizes, from larger ones for multi-member households (e.g. families with several children), smaller ones (for young families), and homes for single people (e.g. starter flats for young people or homes for the elderly or people with special needs).

- consider the heterogeneous composition of the local population, in which different social groups will be represented according to age, gender, education, household income etc.

- possibility of planning a small number of dwellings for residential communities for supported housing (maximum 5%, for residential communities for rehabilitation or for children leaving the social welfare system).

In a mixed predominantly residential use, it is necessary to introduce public and social facilities - multipurpose common space - as a complement to housing (gathering space, reading room, exhibition space, etc.), and to ensure dispersed open smaller public and/or green areas equipped with urban equipment (eg. children's playgrounds).

Recreation zone and square (zone **R2**), where it is necessary to provide: recreational facilities for the wider community (e.g. multipurpose sports field with tribune and changing rooms, etc., excluding sports halls); the square - open public space of the Klara Nova residential community, in the function of the center, for activities of postmodern community, shaping cultural identity and cultural differences (permanence, continuity, but also changes) - ceremonies, fairs, etc., equipped with appropriate urban furniture.

The kindergarten (**DV**) under construction near the northern border of the site - site and landscaping plan with auxiliary (Sisačka cesta II odvojak) and pedestrian access (Burićev odvojak) to the building

Public Park zone (zone **Z1**), which will be used by the wider community.

The route of the existing main power line DS 2x110 kV in the north-south direction across the western part of the site represents a limitation in the planning of the public park (Z1), therefore the competiton design can foresee its displacement to the surrounding roads.

Note: Kindergarten (DV) is located outside the scope of the project site and is currently under construction. It is recommended to design the recreational zone as complementary to the kindergarten.

The approximate share of particular land-use in the site:

residential zone (M1)	60%
recreation zone and square (R2)	25%
public park zone (Z1)	15%
total	**100%**

5.2.2. Structure program

Residential zone (M1)

- It is possible to plan free-standing (detached) buildings and/or semi-detached buildings;
- Residential units are planned in most or all of the buildings;
- Within the residential zone, it is necessary to plan 5 units for commercial use (e.g. a small shop, a quiet trade, a dental office, a children's playroom, a veterinary clinic, etc.) and a socio - cultural center of the community, which can be planned on a separate plot (in a separate building) or within a predominantly residential building; the area of these facilities cannot be more than 30% of the total gross construction area of a building on the plot;
- A single building can have a maximum of 4 independent functional units - e.g. dwellings or commercial units or socio-cultural units;
- The minimum size of planned plots for residential buildings is planned are 300m² for a semi-detached building, and 500m² for a free-standing (detached) building;
- The maximum construction coverage of the building plot area for semi-detached and free-standing (detached) buildings is 40%;
- The highest usability coefficient of the above ground area is 1.0;
- Maximum gross construction area of a building is 500m²;
- Maximum height for residential buildings 3 floors above ground and one underground floor (basement + ground floor + 1st floor + attic/recessed floor); the maximum allowed height for the floors is 3.5m for residential spaces, and 4m for commercial and public spaces;
- The distance of the building from the regulatory line and from the border of neighboring building plots is at least 3m;
- The share of natural terrain on the building plot should be at least 30%;
- For residential use, it is mandatory to

provide parking for personal vehicles on the plot, according to the criterion of 1 parking/garage space per housing unit. Parking for other land uses is according to the norms defined in the chapter TRAFFIC AND INFRASTRUCTURE;
- Direct access from public traffic areas to parking/garage spaces on the plot is not allowed;
- Only one vehicle access lane to the plot is allowed, with maximum width of 5.5 m.

Public Park Zone (Z1)

- Public landscaped area, with a place for relaxation, intended for citizens for walking and leisure;
- Unbuilt and horticulturally designed areas, which, along with green areas in road corridors and green areas on plots in the residential and the recreation zones, form the green infrastructure of the new neighborhood;
- Landscape design primarly through planning the planting of trees;
- Minimum canopy coverage of 30%.

Recreation zone (R2) and square

- Open sports grounds and smaller accompanying spaces can be planned on these surfaces;
- Open sports grounds can be covered when needed;
- It is possible to plan the tribunes by the open sports grounds as a part of the terrain/landscape design, without covering;
- Only the construction of the buildings compatible with the main use is allowed (cloakrooms, sanitary facilities, smaller catering facilities);
- The largest total gross construction area of buildings amounts to 1000m²/1ha of the complete landscaped area of the building plot;
- The share of natural terrain on the building plot should be at least 30%.

Traffic and infrastructure

- The traffic network needs to be planned with the aim of affirming public space and non-motorized traffic to the maximum possible extent;
- Each plot must be accessible from a public traffic area, existing or newly planned;
- The required number of parking/garage spaces for buildings must be planned on the building plots of said buildings. It is possible to plan visitors' parking spaceswithin the road corridor;
- The number of parking/garage spaces (PGS) is determined depending on the building use:

Housing	1 parking space / 1 dwelling
Retail activities	30 parking space / 1000m²
Service activities	40 parking space / 1000m²
Other commercial activities	15 parking space / 1000m²
Medical facilities	25 parking space / 1000m² or 1 parking space / 2 employees*
Sports fields with an auditorium	1 parking space / 18 seats

* Apply stricter criteria

- In addition to parking/garage spaces for cars, it is necessary to provide at least an equal number of parking or garage spaces for bicycles on each plot;
- Plan a station for public bicycles in the area;
- In the road corridors, it is mandatory to plant green belts with trees which are, along with the public park and greenery on building plots, important for creating favorable microclimatic conditions in the area;
- The minimum width of the residential street corridor within the new neighborhood should be 15m (roadway 5.5m with sidewalks on both sides separated from the roadway by a tree line);
- The planned blind alleys may be up to 180 m in length, with a mandatory

turning point at the end for municipal and other vehicles;
- The planned access road to the building plot is at least 5.5 m wide if it is used for vehicular and pedestrian traffic, with a maximum length of 75 m and a maximum of five individual residential buildings connected to it;
- The minimum width of Burićev odvojak and Sisačka cesta II. odvojak (they are not part of basic traffic network in GUP) should be 17m (roadway 6m with sidewalks on both sides separated from the roadway by a tree line);
- The minimum width of the Sisačka cesta (city street, part of the basic network in the GUP) should be 21m (roadway width 6.5m, one-way bicycle paths on both sides separated from the road by low greenery and both sides of the sidewalks separated from bicycle paths by tree lines);
- In the mentioned corridors, the minimum width of sidewalks, one-way bicycle paths and belts of low greenery (bushes) is 1.5m, and 2.5m for tree line;
- In all streets, except for Sisačka cesta, it is possible to plan parking within the tree line;
- It is possible to plan vehicle/pedestrian zones for tenants only, while most of the time they are used as public spaces for meetings, socializing, playing, etc.
- It is necessary to ensure fire lanes to all buildings except single-story buildings. The area for operational work of the fire engine is 11.0/5.5m situated not further than 12m from the building;
- All other missing and necessary communal infrastructure must be planned within the corridors of existing and new roads.

Note: explanation of terms in Annex, chapter 4.

5.2.3. Housing program

- a new neighborhood is planned for approximately 300 inhabitants;
- housing density (number of inhabitants in the new settlement / area of the residential zone M1) - approx. 110 inhabitants per hectare;
- structure of independent functional units (residential units + business units):

Commercial units	maximum 5 units
Studios	0-5% of the total number of housing units
One-room dwellings	15-30% of the total number of housing units
Two-room dwellings	35-50% of the total number of housing units
Three-room dwellings	25-40% of the total number housing units
Four-room dwellings and/or dwellings for residential communities	0-10% of the total number of housing units

5.2.4. Design standard for residential units

A residential unit (dwelling) constitutes a functional unit having a minimum of entrance hall, kitchen (food preparation area), bathroom with toilet (personal hygiene area with toilet), room and open space (loggia/balcony/terrace).

The following table lists the rooms that make up each of the dwelling by type and their minimum net usable area (m²):

Room type	Type of the dwelling				
	S*	1r	2r	3r	4r
entrance	3	3	5	5	5
hall				5	6
kitchen	(4)*	5	6	6	8
dining room		5	6	7	9
bathroom with toilet	4	6	6	6	7
separate toilet				2	2
living room	24	20	21	22	25
1 bedroom			10	10	13
2 bedrooms				10	10
3 bedrooms					10

wardrobe/storage room					4
open space	3	3	4	4	4
total (closed space)	38	42	60	75	101
S – studio, 1r – one-room, 2r – two-rooms, 3r – three-rooms, 4r – four-rooms					
* In the studio, the area of the kitchen is an integral part of the area of the living room, which is also intended for sleeping					

Note: in accordance with national regulations, "room" does not refer exclusively to bedrooms, but "room" also includes the living area/living room.

The width of the room cannot be less than half of its length, nor less than 190 cm. The depth of the room (from the inner edge of the outer facade wall to the inner edge of the opposite wall) must not be deeper than 2.5 times the net height of the room.

The net width of the passage, intended for communication between rooms, must be at least 1m, after the equipment is installed (furnished dwelling).

A room for an additional toilet should have minimum dimensions of 0.90x1.40m.

Space for installing a washing machine must be provided in the dwelling.

A storage area of at least 2m² must be provided in the building for each dwelling.

The main entrance to the staircase must have a windshield.

The entrance area to the building must provide smooth entry, easy communication between tenants, unhindered movement of persons with disabilities and other persons with reduced mobility, as well as the mail delivery.

The entrance area must be at least 1.90 m wide.

Free space must be provided for unhindered carrying of stretchers, or objects of size 2.0×0.50×0.60 m from the entrance to one of the rooms of any dwelling.

The net width of the staircase, landing of the stairs, common corridor and passages to the apartment must be 1.10 m wide or more.

It is possible to design buildings with a direct entrance to the apartments from the outside.

The provision of a closed space for bicycles on the ground floor of the building is necessary.

The space provided for waste separation containers can be organized on the building plot or as a suitable separate space on the ground floor of the building, to which unimpeded access must be possible.

Note: the numerical norms of minimum dwelling sizes (total net) can be increased by a maximum of 10% of the stated values (maximum dwelling size net). The surfaces of individual rooms of the dwelling can be freely planned, but not smaller than those set by the norm. Open spaces of dwellings can be larger than the default, especially for dwellings on the ground floor (gardens and terraces) and those on the recessed floor level where larger outdoor spaces can be formed (25% of the lower floors floor plan area or more).

5.2.5. Other design standards

In the development of all land-uses, it is necessary to enable modern energy solutions, the use of renewable and alternative energy sources in accordance with the principles of green construction, as well as the fulfilment of the principles of green urbanism.

The size of the socio-cultural facilities is not determined by this competition program, and it is left to the competitors to give their own design proposal.

The social and cultural center designed on a separate building plot is to be planned following the rules for freestanding (detached) residential buildings, chapter 5.2.2.; it is recommended to plan that 100% of the annual delivered energy for the work of technical systems is met from renewable sources.

5.3. Expected proposals at the project zone level

- In accordance with the topic of **Re-sourcing**, the competitors should propose new scenarios of life in a peri-urban residential community, a contemporary interpretation of

returning to the origins, based on the reinterpretation of the characteristic tradition of coexistence/cooperation between humans and their environment in Sveta Klara (a house with a garden and crafts) with aspects of the contemporary way of life (working from home), applying bioclimatic and permacultural strategies, while supporting community lifestyle (fairs, festivities, etc.);

- Consider organizing the facilities of the new community by forming a spectrum of different dispersed private, public - common, and semi-public - semi-common spaces at the level of the Klara Nova neighborhood, as well as at the level of individual buildings. It is important to ensure the goal of achieving the highest possible housing density with a high standard of living, and to offer the image of an inclusive neighborhood with different levels of openness, and the connection of residential, residential-commercial and social units and facilities;
- The competitors should propose an urban plan for a residential neighborhood of affordable housing with a plotting plan and a comprehensive landscape design at a scale of 1:1000, and to propose a conceptual design of buildings in scale 1:250 of modular systems with spatial layout providing different levels of privacy and community, in a way that allows flexible solutions adaptable to changes in lifestyles and the needs of various users;
- Propose a model of a green and climate-responsible planned residential neighborhood with guidelines for a circular economy, and landscaping in accordance with the principles of ecological sustainability, fulfilling both functional and aesthetic criteria: in a comprehensive landscape design particular attention should be given to increasing biodiversity, including rainwater management and other nature-based solutions; also, the competition proposal should be integrated into the green infrastructure of the wider Sveta Klara zone.

In conclusion, it should be emphasized that the main resource of the neighborhood of Sveta Klara is the way of life of the traditional community in coexistence with the natural environment still recognizable in fragments. New scenarios of (co)existence, the consolidation of incoherent facilities and built structures, and the enrichment with new facilities in accordance with contemporary needs and development perspectives, should seek their foundations in the surroundings and affirm them in the most creative way. **The Re-sourcing of anthropogenic heritage and landscape in a contemporary interpretation of affordable housing is a goal that the client, the City of Zagreb, will honor by implementing the best competition proposal.**

5.4. Photo documentation

View to the east, in the foreground the zone of the future public park

Aerial view to the north, Sisačka ulica in the foreground, project zone in the second plan, Glogovec in the third plan

Aerial view from the northeast

Orthogonal aerial view

New kindergarten

Panorama from the connecting road to the NE

Panorama from the access road to the kindergarten

Panorama from the northwest

Panorama from II. odvojak of the Sisačka cesta to the NE

6| SOURCES

- Two "halves" of Novi Zagreb, Mapping Urban Changes, Čavlović, M., Lovrenčić, L., Sevšek, A., Institute of Art History, Zagreb, Croatia, 2017
- General Urban Plan of the City of Zagreb, available at: ISPU and ZG Geoportal
- Report on the State of Spatial Planning in the City of Zagreb for the Period from 2017 to 2020, Institute for Spatial Planning of the City of Zagreb, 2022.
- Map of tectonic activities (period 2009-2015), available at: ZG Geoportal
- Development Plan of the City of Zagreb for the period until the end of 2027
- Seismic risk of the City of Zagreb with the emphasis on the critical infrastructure buildings 2019, Atalić, J., Uroš, M., Šavor Novak, M.
- Announcement: Gross domestic product for the City of Zagreb and the Republic of Croatia in 2021 (2024), City of Zagreb, City Office for Economy, Environmental Sustainability and Strategic Planning
- Announcement: Average monthly net and gross salaries - September 2024, City of Zagreb, City Office for Economy, Environmental Sustainability and Strategic Planning
- Project Zagreb - Transition as Condition, Strategy, Practice, 2007, Blau, E., Rupnik, I. Actar, Barcelona and New York
- Spatial Planning Documentation of Zagreb and Zagreb Area in the 20th Century and the Beginning of the 21st Century, 2019, Krajnik, D., Šmit, K. University of Zagreb Faculty of Architecture
- ReThinking Zagreb - Influence of Urban Policies on the Quality of Zagreb's Neighbourhoods, 2012, Jerković, J., MAS Housing ETH Zürich
- Zagreb - Housing in the city and residential areas, 2011, Jukić, t., Mlinar, I., Smokvina, M., Acta Architectonica, University of Zagreb Faculty of Architecture
- Strategy for Green Urban Renewal of the City of Zagreb, 2023
- Study of Landscape Character Protection of the City of Zagreb, 2015

7| COMPREHENSIVE MAP OF THE COMPETITION LOCATION

TERRITORY

HR-Zagreb-C-AP1.jpg, Aerial orthophoto of the city

HR-Zagreb-C-AP2.jpg, Aerial orthophoto of the conurbation

HR-Zagreb-C-M1.dwg, City Map – Croatian Base Map 1:25.000 (dwg)

HR-Zagreb-C-M1.dxf, City Map – Croatian Base Map 1:25.000 (dxf)

HR-Zagreb-C-M1.pdf, City Map – Croatian Base Map 1:25.000 (pdf)

HR-Zagreb-C-M2.tfw, Georeferenced topographic map – west part of the City

HR-Zagreb-C-M2.tif, Georeferenced topographic map – west part of the City

HR-Zagreb-C-M3.tfw, Georeferenced topographic map – east part of the City

HR-Zagreb-C-M3.tif, Georeferenced topographic map – east part of the City

REFLECTION SITE

HR-Zagreb-SS-AP1.jpg, Orthophoto of the reflection site

HR-Zagreb-SS-AP2.jpg, Aerial photo of the reflection site

HR-Zagreb-SS-AP3.jpg Aerial photo of the reflection site

HR-Zagreb-SS-AP4.jpg Aerial photo of the reflection site

HR-Zagreb-SS-M1.dwg, Map of the reflection site - cadastral plan 1:5000 (dwg)

HR-Zagreb-SS-M1.dxf, Map of the reflection site - cadastral plan 1:5000 (dxf)

HR-Zagreb-SS-M1.pdf, Map of the reflection site - cadastral plan 1:5000 (pdf)

HR-Zagreb-SS-M2.dwg, Orthophoto of the reflection site 1:5000 (dwg)

HR-Zagreb-SS-M2.dxf, Orthophoto of the reflection site 1:5000 (dxf)

HR-Zagreb-SS-M3.pdf, Orthophoto of the reflection site 1:5000 (pdf)

HR-Zagreb-SS-P1.jpg - HR-Zagreb-SS-P25.jpg, Photos of the reflection site

PROJECT SITE

HR-Zagreb-PS-AP1.jpg - HR-Zagreb-PS-AP9.jpg, Aerial photo of the project site

HR-Zagreb-PS-M1.dwg, Map of the project site 1:1000 (dwg)

HR-Zagreb-PS-M1.dxf, Map of the project site 1:1000 (dxf)

HR-Zagreb-PS-M1.pdf, Map of the project site 1:1000 (pdf)

HR-Zagreb-PS-P1.jpg - HR-Zagreb-PS-P10.jpg, Photos of the project site

HR-Zagreb-PS-M2.pdf, Kindergarten – ground floor plan

SITE BRIEFS

SITE BRIEFS ANNEX