



**REDUCING
HOUSING
INEQUALITIES**



Case Study Working Paper: BUDAPEST (HUNGARY)

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The ReHousIn project aims to spark innovative policy solutions towards inclusionary and quality housing. To achieve this, it investigates the complex relationship between green transition initiatives and housing inequalities in European urban and rural contexts, and develops innovative policy recommendations for better and context-sensitive integration between environmentally sustainable interventions and socially inclusive housing.

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1 Introduction

1.1 City profile, challenges around just (housing and ecological) transition

Budapest, as Hungary's capital and largest city (1.7 million inhabitants), concentrates both the country's greatest housing opportunities and its most pressing housing challenges (MNB, 2023). The housing market reflects broader national trends, e.g. an overwhelmingly owner-occupied system shaped by large-scale privatization after 1990, limited municipal capacity in rental housing, and growing affordability pressures due to rapidly rising prices. Yet Budapest also faces unique dynamics: strong population demand for housing, a highly polarized housing stock with regard to their physical state, and sharp inequalities between social groups and neighborhoods. The municipality of Budapest and the district municipalities are formally tasked with housing responsibilities, like providing public housing, housing allowances and homeless services but have limited resources, legal authority, and financial instruments to shape outcomes.

Budapest's housing stock is diverse in terms of age, type, and condition. The city has a large share of pre-1945 buildings, particularly in the inner districts, many of which suffer from aging infrastructure, low energy efficiency, and inadequate maintenance. Post-war socialist-era panel housing estates also form a substantial part of the stock; while these provide relatively standardized housing, they are now several decades old and require costly modernization. At the same time, new construction is limited, although highly visible with new residential areas emerging in former brownfields and small densification investments in transitory districts and rehabilitation areas. Still, the number of annually completed dwellings is far below current demand (altogether app. 6 400 new dwellings were completed in 2023, and 4 600 in 2024¹, in a housing market of app. 974 000 units²).

Due to the two-tier municipal system of Budapest, the public housing policy direction is governed by basically 24 independent bodies' policy directions (23 districts and the capital city municipality). The privatization of the municipal housing stock after the regime change left Budapest with a drastically reduced public sector. **While the municipality** (both the main municipality and the districts) **once held a significant portfolio of dwellings, today only around 2–3% of the stock is municipally owned** (15-20% of the overall stock is estimated to be private rental³, while about 80% is owner-occupied.) The remaining municipal units are often of low quality, located in less desirable areas, and require substantial renovation. This weakens the city's capacity to provide social housing. Long waiting lists are common, and many of the dwellings that do become available are not immediately inhabitable without investment. The district municipalities also possess a few thousands of dwellings, but access to social (very cheap and affordable) housing remains limited to a small fraction of those in

¹ <https://www.ksh.hu/gyorstajekoztatok/lak/lak2412.html>

² https://www.ksh.hu/stadat_files/lak/hu/lak0017.html

³ There are no exact and punctual data on the size of the private rental sector, as many of the rental contracts are not registered and not surveyed either.

need, and accessing social rented housing is often requires local habitation and minimum income thresholds of the households.

In terms of quality, Budapest households face mixed conditions. Overcrowding has eased somewhat in recent years, but problems such as poor insulation, leaking roofs, insufficient light, and noise pollution remain significant. The energy efficiency of the stock is generally low, contributing to higher utility costs and vulnerability to energy price fluctuations. **While Hungary’s national ‘utility price cap’ introduced in 2013 resulted in the lowest gas and electricity unit costs in the EU and reduced household energy burdens, this policy did little to improve the physical efficiency of dwellings**, meaning structural vulnerabilities persist (ODYSEE-MURE, 2025).

Budapest has experienced sharp increases in both house prices and rents, particularly since the mid-2010s. Prices have risen faster than incomes, creating a widening affordability gap. The house price-to-income ratio can be consistently considered seriously unaffordable, and rental affordability is even more strained. Rent-to-income ratios for private tenants regularly exceed 30%, making rental housing inaccessible for many low- and middle-income households. The affordability crisis is particularly severe for young people, newcomers to the city, and households without family support. As access to ownership requires significant initial capital, many must rely on the rental market, which is poorly regulated and offers little security. Inner districts’ rental housing comprises high shares of Airbnb/short term rentals (Csizmady&Kőszeghy, 2022).

Housing costs as a share of household income show some decline nationally due to regulated energy prices, but this masks the reality in Budapest: while energy costs are capped, housing acquisition and rental costs have soared. For single-person households, single parents, and lower-educated or unemployed residents, the burden remains disproportionately high. Pensioners are divided: some benefit from owning homes acquired under socialism, while others—particularly those with lower pensions and poor-quality dwellings—struggle with costs.

Budapest’s housing challenges are deeply intertwined with social inequalities. Wealthier households are concentrated in central and Buda districts with higher-quality housing and access to services, while disadvantaged groups, including many Roma families, are overrepresented in poor-quality stock, peripheral districts, and segregated neighborhoods. One of the inner districts – District 8 - also faces such a challenge (Czifusz et al, 2015).

Segregation is reinforced by both market forces and the limited public housing sector. Especially in District 8, a district which kept a higher share of public rental housing, municipal dwellings cluster in less attractive areas, compounding stigma and limiting financial means for moving out (Teller 2019). Gentrification in central districts has encouraged low-income residents to move to outer districts, further polarizing the city. Meanwhile, vacant housing units exist; some 25% of Hungary’s non-occupied dwellings are in Budapest; but many are held for speculative purposes, short-term rentals, or in poor condition, making them unavailable for affordable rental.

Several additional policy factors limit the efficiency of the housing sector in Hungary (Hegedüs, 2023):

1. **Financial constraints:** housing policies at the national level prioritize homeowners and family subsidies, with very little funding allocated for social housing or rental support. Municipalities do not receive systematic central transfers for housing management, making them dependent on their own strained budgets. Budapest faces additional fiscal restrictions imposed by the central government, which curtails its financial autonomy.
2. **Policy and legal environment:** national housing policy emphasizes ownership and demographic incentives (such as subsidies for families with children), leaving little space for local rental initiatives, but fuelling investments into second homes for the wealthy, and thus creating more supply on the (expensive) private rental market.⁴ Some municipalities inside and outside Budapest have experimented with innovative programs, e.g. cost-based rental schemes, non-profit housing, or partnerships with NGOs, very small-scale housing agencies, but these remain marginal without significant public funding. Local housing policies are arbitrary and often lack transparency.
3. **Market dynamics beyond local control:** rising property values, foreign investment, and speculative demand have pushed housing costs beyond the reach of local policy instruments. Short-term rentals (such as Airbnb) have intensified pressures in central districts of Budapest, reducing the long-term rental supply. The municipality has limited regulatory tools to intervene in these markets without national legislation.
4. **Social responsibilities without means:** municipalities are tasked with addressing homelessness and providing emergency housing, but without adequate resources, they struggle to meet demand. Budapest operates shelters and temporary accommodations, and districts run a few services (which are compulsory to be run because of their population size), but the scale of need far exceeds available capacity.

The two neighbourhoods under investigation (Magdolna and Kelenföld) have been hit by these issues too - at the same time they represent two extremes of housing market and population dynamics (stagnation and growth), and the policy responses by their respective district municipalities also differ. Therefore, they are useful to explore quite different challenges in the capital city landscape.

District 11 is located in the Buda side, in the south-western gate of the city. The district is characterized by traditional inner city neighbourhoods shaped in the beginning of the XX. century, large housing estates (as Kelenföld), highly ranked family house areas and rapidly transforming former industrial sites along the Duna river. **The district has a high prestige in the housing market of the city** and the district municipality has a relatively bigger room of financial manoeuvre compared to many other districts of Budapest due to its income from business tax. **On the contrary, district 8, where Magdolna quarter is located, has been stigmatized for centuries housing the poorest layer of inhabitants** (many of them of Roma origin). In the last two decades, however this image has significantly changed due to large-scale urban interventions and the general restructuring of the housing market in Budapest, that revalued the inner parts of the city.

⁴ https://eltinga.hu/wp-content/uploads/2024/07/BLR_ujlakas_2024q2.pdf



Figure 1. The location of the two case study areas embedded into a gentrification and green context⁵

1.2 Green Transition Interventions in Budapest: Magdolna quarter and Kelenföld housing estate

Magdolna quarter

The Magdolna Quarter is part of Budapest's 8th district, located in the city's outer inner-city area. From a strategic planning perspective, the district is divided into 11 sub-areas, of which the Magdolna Quarter represents the least favourable social and physical conditions. The quarter is characterized by a closed-block urban fabric with enclosed courtyards and locates numerous vacant plots and low-rise buildings; consequently, its building density is lower than that of the inner-city districts. At the district level, unemployment rates were highest in the Magdolna Quarter, reaching 16.5% in 2011, during the period of the global financial crisis.

Between 2005 and 2015, three waves of social urban rehabilitation programmes were implemented in the quarter. These programmes included interventions in both municipal

⁵ The indexes are based on the difference of 2011 and 2022 Census data regarding certain social indicators compiled into gentrification indexes. The change in green surfaces is generated from NDVA data.

and privately owned residential buildings—affecting several dozen properties—as well as improvements to public buildings and public spaces. In addition, ‘soft’ interventions were introduced with the aim of enhancing the social capacities of local residents. A fourth wave of rehabilitation was carried out between 2018 and 2023 and covered three urban blocks inside the Magdolna Quarter and the neighbouring Orczy Quarter. This programme focused on the comprehensive reconstruction of two municipal buildings, small-scale technical improvements in approximately 300 municipal flats, the creation of green courtyards in ten municipal buildings, and the strengthening of communication between municipal tenants and municipal departments.

The regeneration programme in the Magdolna Quarter including all green elements (retrofitting, nature-based interventions and new buildings in empty plots) provides an instructive case for examining the effects of green policies on housing inequalities. The area combines a historically low socio-economic status with a latent potential for gentrification, while the interventions implemented over the past 25 years offer a sufficiently long timeframe to assess measurable outcomes in both environmental and housing-related dimensions.

Kelenföld

Budapest’ 11th district, and within it the Kelenföld housing estate, has profited from inwards migration of younger households, and large private investments, given that it is the western gate of the capital city, with large so-far underutilised areas (including brownfields). The dynamics of the processes fuelled house price increase, the district being one the most growingly priced areas of the capital city over the last 20 years. **Besides the general trends in the housing market of Budapest, Kelenföld profited from specific additional investments**; majority of the large building blocks were substantially renovated, the tramline number 1 was extended to reach the area directly from the Pest side, so was the Metro line number 4 constructed to provide fast access to the city centre. In addition, a new shopping mall was built in the western border of the housing estate. These investments, together with the green interventions in public spaces made this originally favourable location even more preferred.

From the point of view of the research in ReHousIn this housing estate was chosen to collect evidence on the impacts of energy efficient retrofits of the privately-owned panel buildings, that started already in the 2000s based on a generous state subsidy programme. The area provides us the possibility to record the perceptions of local stakeholders on how relevant these renovation interventions are in light of the general housing market trends in Budapest.

	Magdolna quarter	Kelenföld housing estate
Neighbourhood characteristics	<p>The area is the most segregated one in District 8 with the least favourable social parameters.</p> <p>The quarter has a high proportion of low-quality and one-room flats, which, after significant improvements, still exceeds 50%.</p> <p>In addition to the higher apartment buildings that almost dominate along the main roads, there are many smaller houses on side streets, up to 150 years old, as well as workshops and a large number of small vacant lots.</p>	<p>Kelenföld is a neighbourhood of app 7 km², in the south-central part of District 11, with a population of about 50 000 people.</p> <p>The area comprises a large share of prefabricated housing constructed between 1965 and 1983, and is very well connected with public transportation, and has a number of green parks, commercial sites, and is also well served with public services.</p>
Duration	2005-2015 (2024)	2001-2025 (with intense phase until 2009, then individual projects afterwards), the municipality launched its local program back in 1998
Funding	The first phase of the rehabilitation was supported by the Municipality of Budapest, for the upcoming phases the main funding came from EU structural funds. Both were coupled by district municipality funds. Private interventions in new builds were also accomplished.	The first phase was based on 1/3-1/3-1/3 financing shared between the state, the district municipality and the individual home-owners, where this latter 1/3 share could be covered from a preferential loan and a Housing Savings scheme. Currently the municipality provides small scale grants and national preferential loan to condominiums is still available.
Actor constellation	The main stakeholder is the district municipality and its satellite organisations. Civil activities are weak, however stronger than in any other parts of Budapest.	Initially, the condominiums (owners), the municipality and the state were equally important stakeholders in building renovation, more recently, condominiums remain the major actors. For green spaces Budapest municipality and district municipality are responsible.
Aims and objectives	The ultimate aim in the 2000s was to stop further social and physical deterioration by the implementation of social rehabilitation measures	The goal has been to improve energy efficiency of the prefab buildings through insulation, change of mechanical system and doors and windows. It was coupled by green investments in public spaces by the local municipality.
Specific physical measures	28 municipal buildings and 16 condominiums were mostly partially renovated. Reduced traffic was introduced with the greening of some small streets, creation of community gardens and the multiple reconstruction of the main green square of the area (Mátyás square)	App. three quarters of the buildings were renovated in the course of the past 25 years, the renewal of the main park (Bikás park) was accomplished and the public green spaces between housing blocks were renovated as well
Accompanying housing policy/regulatory measures	The physical interventions were accompanied by soft measures, like the establishment of a new community centre, employment and social programmes as well as drug and violence prevention programmes	The local regulations for green infrastructure have been fostering an increasing share of green.
Key social tensions or/and benefits between greening and housing	The environmental and somewhat the housing quality has improved without major deficits in accessibility and affordability. New inhabitants came by the new constructions but the former inhabitants did not leave the area. Gentrification did not start (yet).	Housing renovation and green developments contributed to the organic value increase of the area that was also fostered by infrastructure developments.

Table 1. Key data on the two case study areas in Budapest

2 Methods

The present case study report is based on a mixed-methods research design. Background information, including contextual data, was collected through desk research encompassing academic literature and local planning documents, while stakeholders' perceptions were explored through a series of semi-structured interviews.

In total, 14 interviews were conducted in Budapest between May and December 2025, involving 15 participants across two study areas: Kelenföld (8 participants) and the Magdolna Quarter (7 participants) (see Appendix 1). The interviewees were selected to reflect the diversity of local stakeholders as well as different phases of the interventions; for example, experts with professional experience dating back 20–25 years were also included. Given that the tradition of establishing and maintaining civic movements is relatively weak in Hungary, representatives of residential communities were primarily included among the interviewees.

In Hungary, residential building communities are predominantly organized as condominiums, with housing cooperatives operating in a similar manner. Consequently, housing managers—who possess in-depth knowledge of the technical, financial, and social processes within residential buildings—were interviewed. In Kelenföld, half of the interviews were conducted with housing managers, reflecting the research focus on energy-efficient retrofitting of the residential building stock. In contrast, interventions in the Magdolna Quarter were more complex; therefore, the distribution of interviewees was more balanced among municipal actors, civil society representatives, and housing managers. Interviewees were selected based on their expertise, and a snowball method was additionally applied to identify actors who could provide complementary perspectives.

Both projects examined in this study have long timeframes, having commenced in the early 2000s. As a result, it was not feasible to capture all narrative shifts or the perspectives of the numerous actors involved through only 14 interviews. Instead, the research focused on stakeholders with sustained and comprehensive involvement in the projects, enabling the representation of a broad range of perceptions as well as their evolution over time.

Most interviews were conducted in person and were complemented by site visits and in-field observations. Interviewees received explanations on how their personal data would be handled and approval was gained for quotations and audio-recordings. The approval was audio-recorded as well. The recordings were transcribed using Alrite software and subsequently reviewed and corrected by a native speaker. The coding process followed the guidelines developed by UAB and was based on interview transcripts imported into MAXQDA software.

3 Stakeholders' Perceptions of Green Initiatives in Case Study Areas: Magdolna quarter

3.1 Precedents and implementation

The rehabilitation programme in the Magdolna Quarter was initiated in the early 2000s. As municipal experts expressed, the quarter had a strategic position in the development of the district. The municipality had to take into account two key starting conditions: the limited financial capacity of the public sector and the strong stigma associated with Budapest's 8th district as a whole. As emphasized by local municipal experts, a strategic decision was made to follow two distinct redevelopment approaches within the district. The Corvin Quarter, which occupies a more favourable urban position within Budapest, was designated for comprehensive redevelopment through demolition and new construction, largely financed by private investment. In contrast, **the Magdolna Quarter—characterized by a less advantageous location—was primarily planned to be protected from large-scale reconstruction, while efforts focused on improving residents' quality of life.**

The redevelopment of the Corvin Quarter aimed to enhance the overall image of the district and achieved this objective, albeit at the cost of substantial gentrification. By contrast, the Magdolna Quarter was consciously protected from such transformative pressures. The original rehabilitation concept for Magdolna was implemented as planned and came to be widely acknowledged and shared by both municipal and civil society actors as a common framework.

As municipal experts expressed, the initial phases of rehabilitation concentrated on municipally owned properties, with the explicit aim of establishing direct personal contact with as many tenants as possible. At the outset of the programme, the municipality lacked both the financial resources and the political commitment to engage with privately owned condominiums, despite the fact that 88% of housing units in the district were privately owned (Census 2022). Condominiums were incorporated into the rehabilitation process only later, when the availability of European Union funding both enabled and required their inclusion.

Between 2005 and the present, several changes occurred in the district's political leadership—from liberal governance to right-wing leadership in late 2009, and subsequently to left-wing leadership in 2019—which resulted in changes among the implementing actors. Nevertheless, municipal experts consistently emphasized the persistence of a shared principle: interventions in municipal rental buildings—entirely occupied by municipal tenants—should remain relatively small in scale, but should affect as many buildings as possible in order to ensure broadly distributed improvements in housing quality. Accordingly, most interventions focused on essential structural upgrades, such as roof and pipe replacements, as well as the installation of individual bathrooms and toilets. Energy-efficiency measures were treated as secondary priorities and were limited mainly to window replacements and the insulation of selected building elements, such as firewalls.

Renovations carried out in condominiums within the framework of the Magdolna Programme were similarly partial in nature. As housing managers noted, **during the late 2000s and mid-2010s energy efficiency was not yet considered a major policy concern. Moreover, the age and condition of these buildings necessitated other urgent forms of intervention.** Early political priorities focused on the ‘beautification’ of the building stock through façade renovations, alongside the remediation of major structural deficiencies, including roofs, pipes, chimneys, and hanging corridors.

“Yes, at the beginning there was an SZDSZ (liberal) city administration, and several investments were made there that improved the quality of life for residents, and then with the Fidesz (right-wing) city administration, the city’s landscape, yes, the landscape, that’s the best word. So, along the line of bus 99, they renovated 30 facades with that money. And no interior renovations were carried out during that wave; the concept was to make it look better from the outside.” - representative of an NGO

In the final phase of the rehabilitation programme—which also included the neighbouring Orczy Quarter—the insulation of two residential buildings and the replacement of windows in 180 flats were completed. In this phase, the primary objective was to achieve measurable improvements in energy efficiency. As municipal interviewees indicated, this shift in renovation priorities was driven less by local strategic considerations than by the requirements linked to European Union funding calls in the late 2010s.

In addition, two municipal rental buildings were constructed in the 2000s following the energy requirements of that time, to accommodate tenants relocated from the Corvin area.

With regard to green investments, the main public space of the Magdolna Quarter, Mátyás Square, underwent renovation in two major phases. This was complemented by several smaller-scale interventions, including the establishment of two community gardens on Czinka Panna Street and Magdolna Street (initiated by the local government). Similar to the approach adopted in housing renewal, the emphasis was placed on small-scale improvements rather than large-scale transformations, aiming to create a network of small green spaces, including the temporary use of vacant plots.

As the Magdolna Programme was conceived as a social urban rehabilitation initiative, it incorporated extensive social interventions alongside physical improvements. Particular emphasis was placed on community development, employment support, and public safety programmes. The rehabilitation process began with the establishment of a community centre, which remains in operation today. Although its mode of operation has varied across different political periods, the centre has consistently been highly valued by local residents and their representatives.

3.2 Participation and governance (procedural)

The rehabilitation programme was implemented and managed by the municipal rehabilitation company RÉV8. While formal decision-making authority belonged to the district municipality, the preparation and technical elaboration of decisions were carried out by RÉV8. From the outset, the programme was based on the principle of deep involvement of municipal tenants; however, according to local implementers, this proved challenging in practice. Both municipal actors and non-governmental organisations emphasized that public participation processes tended to mobilize middle-class groups more effectively, whereas engagement with vulnerable populations requires specific skills and tailored methods, which were not applied in all cases. Discussions surrounding the creation of improved green spaces within residential buildings—most of which include internal courtyards—served as one means of activating residents and fostering a shared understanding of collective goals.

At the start of the programme, a new civil organisation, KÖZÖD, was established to represent the interests of municipal tenants. Such a formalized representation of vulnerable groups is relatively uncommon in Hungarian urban development processes. The organisation functioned primarily as a watchdog overseeing the activities of the rehabilitation programme, although during certain phases it also became part of the implementation coalition. Cooperation between the civil organisation and the municipality was generally assessed as beneficial by both parties, albeit not without tensions during implementation. As their representative expressed, and was also noted by a municipal expert, one notable outcome of KÖZÖD's activities was its support for municipal tenants in identifying the causes of a sharp increase in gas bills in a newly constructed municipal rental building; after several years of investigation, the extra costs were paid back to the tenants.

Interviewees' perceptions varied with regard to participation in the planning and creation of green spaces. While RÉV8, as the main implementer of green space interventions, placed strong emphasis on involving residents living near the targeted sites, other interviewees from the municipal and civil sectors highlighted the insufficient inclusion of highly vulnerable groups who also use public spaces, such as homeless people or individuals with drug addiction problems. As a result, tensions between long-term residents and the most vulnerable users of public spaces persisted over an extended period.

3.3 (In)equity (distributional)

As noted earlier, the founding concept of the Magdolna Quarter rehabilitation was to retain the area's original residents—including vulnerable groups—while simultaneously attracting new inhabitants through new construction activities. These efforts by the municipality were also acknowledged by civil society organisations. Social organisations were strongly involved from the outset of the programme, with the overarching aim of improving housing conditions and public spaces for all residents. Accordingly, rather than undertaking comprehensive renovations of a limited number of buildings, the programme prioritised smaller-scale interventions distributed across several dozen properties.

“I think the technical arguments would have been in favor of moving everyone out of the entire apartment building and then renovating it from the basement to the attic, but the principles of fairness are against this.” - municipal civil servant

Still, with the intention of just distribution of efforts, there were social groups and renovation issues that were not properly handled according to some interviewees:

- The focus of the programme shifted across different political periods. In both the initial and the final phases of the rehabilitation process, municipal efforts were primarily directed at municipal buildings and tenants. Despite the fact that private condominium owners in the area are nearly as socioeconomically vulnerable as tenants, and that the technical condition of these buildings is often comparable to fully municipally owned tenement buildings, **insufficient funding and attention were allocated to private properties**. This limitation was acknowledged by all stakeholders but was particularly criticised by housing managers. In the 2010s, however, the focus expanded to include private condominium buildings that were able to access European and municipal funding to a greater extent.
- The district is heavily ‘loaded’ with social institutions, including approximately ten homeless shelters. Homeless individuals are a visible and enduring part of everyday life in the area, and their presence poses challenges for local management. Drug use and addiction in public spaces is also a significant concern, which is inadequately addressed due to a shortage of police personnel; policing services are centralised by the national government, leaving local authorities with limited capacity to intervene. These issues were raised by all interviewees, regardless of their social profile.
- **Energy efficiency was not a primary focus of the rehabilitation interventions**. This was partly due to the more urgent structural deficiencies of the buildings and partly because energy poverty is relatively less severe, given the small flat sizes and thick walls characteristic of these older structures. Nevertheless, the most serious issues—such as damp walls caused by inadequate waterproofing and deteriorating pipes—could not be fully remedied in all cases and remain persistent problems.
- As part of the project, traffic management measures were introduced, including the pedestrianisation of certain streets and reductions of speed in others. These interventions led to decreased traffic in smaller streets but, conversely, increased traffic on major ones.

3.4 Political mobilization

The role of civil movements and organisations in Hungary is relatively limited, reflecting the country’s weak tradition of bottom-up advocacy for local interests. **Nevertheless, a civil organisation (KÖZÖD) was established to represent the interests of municipal tenants and, with the support of the Lutheran Church,** continues to participate in negotiations between vulnerable groups and the municipality.

In the 2000s, the District 8 municipality sought to engage intensively with local residents through its urban regeneration company, RÉV8. Since 2019, under left-wing district leadership, the municipality has established a public participation department responsible for implementing extensive participatory processes. In autumn 2025, the municipality also created a dedicated office, LAKÓTÉR, staffed with social workers tasked with daily engagement with municipal tenants. The intensity of these social participation initiatives is unusual in Hungary, and the civil interviewees acknowledged the district municipality's exceptional performance in this regard. However, civil organisations question whether the forms of mediation and communication institutionalised within the municipal structure are sufficiently independent to represent the interests of vulnerable groups against public and private actors.

“So, we have community organizer statuses, which we use to organize the tenant community, and this is a kind of interest group. And then they also created Lakótér, and then there were community organizers employed as well, so they discussed things among themselves.” – NGO representative

Thanks to ongoing communication and participatory planning processes, as well as the gradual pace of changes in the area, **there have been no major expressions of public disinterest over the past 20 years**, with one notable exception: the proposal to establish a drug addiction centre in the heart of the quarter, at Mátyás Square, as part of the rehabilitation programme. Local residents expressed concern that the centre could lead to an increase in the number of drug users and related crime. In the end, however, the centre did not generate significant conflict and was eventually accepted. One interviewee noted however, that only right-wing local politicians succeeded in maintaining support in the local elections in the area during this episode.

The local civil organisation representing municipal tenants had its most significant impact by investigating a sharp increase in gas bills in a newly constructed municipal tenement building. After resolving the issue with the utility company, tenants received reimbursement for the overcharged amounts as was noted both by the local civil representative and the municipal expert.

3.5 Socio-ecological impacts/benefits (positive)

The rehabilitation process in the Magdolna Quarter was implemented over a period of 20 years, yet its outcomes remain limited both regarding physical changes and social changes. This fact can be interpreted both positively and negatively. The slow pace and modest results prevented large-scale gentrification but also constrained the overall positive impact on the area. All interviewees agreed that the quality of public spaces has improved, with the creation of more green areas serving diverse functions, as well as improvements to several municipal residential buildings and the physical condition of some condominium properties.

Only a few municipal buildings were demolished and replaced with new constructions, and all tenants were guaranteed the right to a new rental home. There were no forced displacements

from the area, except for one group of tenants who occupied apartments without formal title. These individuals were either granted official rental contracts or received compensation to relocate.

The quality of municipal residential buildings that were part of the programme has generally improved, with the most severe physical deficiencies addressed—ensuring modest improvements for all rather than high-quality upgrades for a select few. Municipal actors emphasised that a primary goal was to reduce utility costs for municipal tenants. In all tenement buildings that underwent renovation, the greening of common courtyards was carried out in consultation with residents. These green spaces continue to be maintained by the inhabitants themselves as was emphasized by the municipal experts.

According to all interviewees, the original social structure of the quarter has largely been preserved: long-term residents remain in the area, and community networks have persisted. These community networks are conceived useful, as a local inhabitant expressed, while conceived also negative by others, with the potential to remain criminal activities.

“These are still the same Roma families sitting in Mátyás square”... “The old communities remained in their original forms” - representative of an NGO

“The people remained the same. There are families in each building that are hard to handle. The community is relieved if some of them go to jail.” - a housing manager

Newcomers are present, primarily in newly constructed blocks, but their arrival has not been opposed by the original inhabitants.

New, locally ‘fancy’ places were formulated around the main square of the area (Mátyás square). With the new pedestrian streets new cafes and bakeries opened that serve mostly the newcomers that have mostly higher social status. As was mentioned by one of the municipal experts, the benefit of Mátyás square is that it has a strong social life.

The new community centre in the heart of the area provides social and cultural services from the start of the project for vulnerable inhabitants but also for middle-class residents. NGOs believe that occasionally it manages to create direct links between inhabitants with different social status.

“... that there is a gallery there, that they bring in the Fidó [the municipal participation office], thus connecting the district a little bit, linking the very poor part of the neighbourhood with people of very high social status.” – a Roma representative

3.6 Socio-ecological impacts/harms (negative)

As was mentioned before, all interviewees emphasized that gentrification remained moderate in the area as there were no significant demolitions and the old communities remained. However, several small plots were sold for developers and new blocks appeared with new residents. **Most of the interviewees consider that the quarter is currently at the turning point: the newcomers came on top of the original residents without breaking the social structures, but it may change in the future** as the whole area is about to be revalued in the real estate map of Budapest - mostly due to the lack of affordable places in other parts of the city.

“Gentrification is an integral part of urban development, and even if it happens it should not prevent the public actors from providing increased services for the ones living there.” - urban development expert of the local rehabilitation company

Technical deficiencies were observed in the renovation processes. For example, in earlier interventions, windows were replaced along with their wooden frames. However, in the most recent programmes between 2018 and 2024—which also included the neighbouring Orczy Quarter—180 windows were replaced with plastic-framed units. In the absence of proper ventilation and with unresolved water retention issues, this change caused severe mould problems in the apartments. Technical experts emphasised that ‘blind’ energy efficiency interventions, undertaken without corresponding structural improvements, can cause more harm than benefit.

“So, if I may say so, I don't think we should emphasize such a green idea on its own, because then the consequence will be that they will actually come up with the idea of replacing windows, and replacing windows on its own doesn't help much..... Especially in these old houses and small houses, window replacement should only be done if you also modify the heating and ventilation system.” – municipal development expert

Regarding housing affordability, including rents and utility costs, conditions generally improved as a result of the renovations. **Utility costs mostly decreased while municipal rents remained stable**, as the municipality covered major structural works while tenants made internal improvements; thus, tenants did not incur higher rents for increased comfort. Some negative cases were noted, however. These included the building with increased gas bills due to administrative deficiencies and apartments converted to electric heating, primarily via air conditioners. While electricity prices in Hungary are relatively low below a certain consumption threshold, costs rise sharply above this level, making electricity-based heating expensive unless highly efficient systems are used. Affordability pressures became more visible in 2025, when, after 13 years, municipal rents increased by an average of 33%. The increase affected units differently, with those that had already undergone significant renovation experiencing the full 33% rise. **Nevertheless, rents remain highly affordable, averaging only 12–15% of market rates.**

The situation of private tenants is largely unknown. None of the interviewees had a clear understanding of the effects of renovation in the private rental sector. While private rentals constitute a significant and reportedly growing share of the housing stock, precise figures are unavailable due to the prevalence of informal rental arrangements. Typical tenants are either students, young professionals, or vulnerable families who cannot access housing elsewhere in the city (for example, due to Roma origin). Market rents range from approximately €7–10 per square metre, which is only affordable for vulnerable families if the apartments are small. There are no national or local regulations on the possible rent increase in case renovation is implemented in the private rental sector. In most cases, the costs of renovations—particularly when incorporated into common fees—are passed on to private tenants, according to housing managers. Managers also observe that some tenants, however, refuse to pay fees associated with increases in the property’s value, which remain with the owners. **In the absence of clear legal guidance, the allocation of renovation costs between landlords and tenants in the private market remains a matter of negotiation and power dynamics.**

Housing managers, who have an overview of both the renovation processes and the financial capacity of property owners, reported that the **works generally do not create payment difficulties**. This is partly because most renovation works involve limited technical interventions to avoid high upfront costs, and partly because housing communities structure financial obligations in a manner acceptable to the majority of owners. Legally, decisions require the approval of 50% of owners present at a General Assembly, providing a mechanism to ensure affordability and consensus.

“The ones who are in arrears for the building operational fees are the ones who may be in arrears with the renovation fees. The renovation cost itself does not generate extra arrears. The municipality provides allowance and some tricky people really get use of it, even we see them using new cars...” - a housing manager

The positive side of the narrative is that renovation works hardly generate renovation and affordability problems. The negative side of the narrative is that the technical interventions are limited except substantial subsidies can be achieved. As property managers expressed, most of the old buildings in the neighbourhood follow a cautious staged renovation process, concentrating on the most essential next steps. It covers the pipes, the roof, the hanging corridors and chimneys, but energy efficiency is hardly included.

“Insulation of the buildings will never pay off. We have thick walls and the savings are negligible. Insulating the roof would have an effect only on people living on the top floor, but this is not convincing enough for the whole community” - a housing manager

Some elements of energy efficiency based retrofits, however, are considered a much more urgent topic these days than they were 10 years ago. It is still not about insulation or installation of renewables, as it is considered unrealistic by the housing managers in current times, and less prioritized in these buildings, but electrification became a high priority. Partly due to the European obligations from 2015 (following the Directive 2009/125/EC on space heaters) that

in case a traditional gas heater has to be replaced, only condensational gas boilers can be installed, which is a costly intervention taking into account the needs for chimney lining. In order to avoid that, people install heating/cooling air conditioners that require additional electricity that the wiring neither inside the flats nor outside the buildings can handle. In case the demand for additional electricity occurs from several buildings, the grids on the streets may also be overloaded. Currently the collapse of the electricity system in the buildings is an everyday phenomena and housing managers (but also the local municipality that operates municipal buildings having the same problems) miss the forward-looking national concepts and financial sources to handle this problem.

3.7 Tensions and power dynamics between stakeholders/actors

A complex renovation process is often marked by ongoing conflicts among various stakeholders within the public sphere, between public and private actors, and between public actors and local residents. **Political interests of local politicians and the professional priorities of municipal experts and civil servants frequently diverge.** Even during periods of liberal and left-wing district leadership (prior to 2009 and after 2019), experts from the local rehabilitation company, RÉV8, reported applying tricks to convince politicians of the political advantages of the rehabilitation process.

The project was prepared for funding and implementation in the 2000s and EU funds were already awarded. Consequently, politicians during the subsequent right-wing administration (under the FIDESZ party) were constrained by path dependency and largely continued to implement the social rehabilitation concept. **Nevertheless, most interviewees regarded this period as a setback in terms of the project's social objectives.** While façades of dozens of municipal buildings along main roads were renovated, their engineering structures were not addressed. The programming of the community centre was restricted with regard to social activities. New 'civil' organisations were established that focused on urban beautification but opposed social development initiatives, such as playgrounds and community gardens. At the same time, the urban rehabilitation company was nearly closed. The strong social character of the rehabilitation process was softened so did the general management approach of the municipal building stock.

"We sold a lot of tenement buildings and FIDESZ (right-wing party) did so, but we sold them to finance the renovation of the others, while they sold it to clear the poor., - current municipal expert

On the other hand housing managers argue that condominium buildings were much more supported at the time of the right-wing local government as funds were mostly dedicated to them, instead of strong social measures. And the administrative procedures were much less complicated than these days, when the municipality provides much lower funds but with much more hustle.

"We have negative experiences with the municipality. We submitted an application for

subsidies in the Magdolna programme, but the process was not transparent. We were rejected but did not know why. We had to wait a year for nothing!” - a housing manager

There were - and are still - debates about the building renovation concept of the municipality. Some technical experts consider it useless to partially renovate the old (100-150 years old) buildings and conserve the unsustainable conditions - like small flats without proper sunshine. While other municipal actors think that everyone deserves a somewhat better quality flat and due to the lack of resources this is the maximum the municipality can provide.

The interviewees mentioned several conflicting points between the municipality and the inhabitants (or their organisation) even if both parties acknowledge the other. Still, the municipality complains (and the NGOs are also aware) that the communication with the inhabitants is a very complicated task, and the involvement is hard.

“There are much tougher communities nowadays than there were in the 2000s. We would not be able to make the renovation again this way. The green areas are not sustained by the inhabitants anymore. They rather come to the municipality to complain.” - a representative of the renovation company

On the other hand, the NGOs would require a higher level of transparency and lower level of administration. They could imagine a more direct involvement of the inhabitants into the renovation works, as many of them are working in the construction sector. Still, as the municipality lacks the human resources for quality control but has to take the responsibility for the results of the renovation works, the active involvement of residents is limited.

3.8 Innovative governance mechanisms

One of the keys to avoid harsh housing inequality consequences of retrofitting **turned out to be the significant subsidy provided either by the state (EU) or the local government.** Housing managers emphasize that as long as the subsidy content is substantial (at least 50%), the remaining co-funding can be provided by the owners, even the vulnerable ones. In the absence of subsidies, the renovation process terminates as the inhabitants are not able to finance even the maintenance works.

The key to avoid gentrification seems to be the step-by-step approach through which the changes happen at a slower pace and the inhabitants are able to adapt to it. According to some interviewees the pace is so slow that it is nearly invisible compared to the needs, but all interviews acknowledge that the area (mostly the public spaces and the crime situation) has been improved and cannot be compared to the 1990s.

“The green investments in Népszínház street were limited in order to avoid sharp price increase there. Even if you plant trees, it is a big step ahead, and you can not do less than that.” - a representative of the renovation company

The step-by-step approach was also reflected in the renovation works in the tenement buildings: the main systems were renovated and rebuilt like water, sewer and electricity and the inhabitants had the possibility to connect to it at their own pace with the help of the municipality.

Strong social assistance was considered a major tool to avoid unintended social consequences. The families were prepared for the changes and in case movement was necessary they were strongly assisted. This feature was valued by the local NGOs, labeling the local renovation concept much more socially sensitive than anywhere else in the city.

The renovation process was considered a constant learning curve in which values had to be adjusted to possibilities. As a current municipal expert expressed, by now the real estate management is based on a more holistic approach: it is precisely written down in the local real estate management plan which buildings will be renovated, demolished and plots to be sold (with the obligation of construction to avoid speculation).

3.9 Tourism and market pressures

The market pressure in Magdolna is perceived much less than in other quarters of District 8. There may be two major reasons behind: 1) the less favourable location of the area inside the district - a bit further away from the main transportation lines and the downtown of Budapest, and 2) smaller size of empty plots due to the original layout of the buildings, that provide less perspectives for developers.

“There were six empty plots. In case we propose to demolish the big building standing in the middle, then the whole area would have been sold.” - expert of the local rehabilitation company

There were occasional private developments in the area (besides the few new municipal residential buildings) but these can rather be considered as pilots. It is not yet proved by the market that it is worth investing into the area. E.g. as a municipal expert noted, in Dobozi street the municipality was not able to sell a plot due to the lack of demand. However, this may change in the future. New inhabitants coming to the area (not only to new buildings) mention that as real estate prices all over Budapest increased sharply, district 8 and primarily Magdolna quarter is the one that is somewhat affordable. Which generates growing demand for the area. In addition, new public developments are foreseen in the quarter neighbouring Magdolna (Orczy quarter). New university buildings are foreseen, that will most probably have an impact in the whole neighbourhood. Students already like the area and their presence is expected to increase in the future. (There is already a new dormitory under construction in the heart of Magdolna, at Mátyás square.)

All interviewees, who formulated an opinion on the real estate market expressed that the coming years may represent a turning point in the trends as Magdolna may become more popular. It means that the municipality may have to make extra efforts to keep at least part of the residents mostly through the municipal tenement buildings.

3.10 Gaps in perceptions between civic groups and public agencies

The rehabilitation of the Magdolna quarter seems to be the rare case where the gaps in perceptions are less between the public agencies (of the 2000s and the current) and the civic groups but between certain groups of inhabitants and the public and civic organisations. The major issue is what the desired social composition of the area should look like. While public authorities (in the liberal and left-wing times) and civil actors (like KÖZÖD resident organisation or Roma representatives) prefer working for the vulnerable inhabitants and try to preserve the social composition as much as possible, middle-class citizens are rather in favour of the social changes. The right-wing local government in the 2010s supported those social groups that were more affluent and had higher social capacities. The debates are still about the values of the middle-class and the needs of vulnerable people and the environment. A hot topic in this regard is the reduction of parking spaces by the current left-wing government, the increase in parking prices for the inhabitants and the reduction of traffic in certain smaller streets. These interventions (together with services for drug addicts or homeless people) are welcomed by left-wing politicians and NGOs but highly criticized by many local residents.

“Because right now it's impossible to get around, since nothing has really been cleared away. The fact is that it's even harder now, but you'd expect there to be more public space supervisors, trying to sort out the issues related to the homeless a little better. There should be more police officers in the district. We have problems with drug addicts in this regard.” - a housing manager

From these it becomes obvious that the desired way of rehabilitation is far not objective, but a matter of values and political approaches.

4 Stakeholders' Perceptions of Green Initiatives in Case Study Areas: Kelenföld housing estate

4.1 Precedents and implementation

As reported by the interviewees, Kelenföld's energy sufficiency interventions started around 2000, when the neighbourhood - dominated by prefabricated houses, accommodating over 50,000 people - witnessed the first upgrading programs. **The interventions intensified around 2005, and covered - until today - app. two thirds of the stock of the neighbourhood.** These programs often utilized a tripartite funding model involving the state, the municipality, and the residents, as seen with the Etele 73 building, the first large multi-entrance building to participate in 2006.

Pressure to launch any energy efficiency interventions came from a number of components according to the housing managers; it comprised environmental protection (through less energy consumption), more economic/affordable heating and a reduction in housing costs in general. Moreover, improved livability of the neighbourhood through the improved aesthetics of the buildings was also expected. Historically, the funds allocated by the municipality were primarily targeting interventions that tackled life-threatening situations (e.g. issues with chimneys and roofs, or gas and electricity networks), but when the national prefabrication refurbishment program was established in 2001 (the one that provided 1/3 of the costs by the state in case the local municipality provides another 1/3), the district consciously took a pioneer role in its implementation. Thus, while early initiatives of the municipality, like the 1998 residential renovation tender, focused on urgent priorities such as gas and chimney safety, the district eventually became a leader in the field - which was a conscious political decision by the local government as reported by a number of interviewees – both municipal actors and housing managers. Political interest in times of pre-elections are even today described as especially relevant in boosting support for owners/condominium associations to address energy efficiency and to challenge environmental issues, e.g. with small scale nature-based solutions.

„Actually, we push it a little bit before every election year, but in general, if I take it down to a five-year cycle, it's pretty much constant.“ – municipal civil servant

When the first investments were accomplished (in 2006), a sort of snow-ball effect facilitated increased participation of the condominiums in the programs on the go, and word of mouth among the residents contributed to a growing interest in participating in the schemes.

Condominium managers also perceived that generally increasing energy consumption levels were a great source of pressure for getting engaged in refurbishment interventions: investments into building engineering technology grew as the general demand for more climate resilient solutions (e.g. air conditioning to tackle very high temperatures in summer, and dilapidation of old wooden doors and windows that caused loss of heat especially in cold winter

days) grew, also by the expectation that refurbished housing and neighbourhood appearance would sell better on the market.

At the same time, the initial high levels of state co-funding vanished after 2009 due to the financial crisis, and the local municipality's added resources were very limited. Still, by that time, while the housing market itself seemed to reposition the neighbourhood, more and more condominiums engaged in (visible) refurbishment processes, which caused a kind of tipping: as reported by condominium managers and the (former) chief architect, the general expectations toward valorising the invested (and still broadly affordable) investments in the price of housing, created even more pressure to launch retrofits in large prefabs that were lagging behind. **As claimed by condominium managers, property value increases are a primary driver for retrofits** (for comparison, a modernised prefab in District 11 can reach prices of up to 2 million HUF - € 5,000 - per square meter, and Kelenföld housing prices have been following this trend) . Residents often value the aesthetic improvement and increased comfort more than the actual energy savings, which are sometimes seen as negligible due to the utility price cap (rezsicsökkentés) policies since 2013.

“So I don't think savings are the point. Because they calculate that, I don't know, in 20 years this will pay for itself in heating or whatever, so you shouldn't count on that. What you should count on is that I live in a beautiful house ... So I think that with these panels, savings are not the main issue, in my opinion.” – housing manager

Private construction and management companies became also more active in generating retrofit packages, and condominium managers acted as brokers to make these interventions work. In addition, the municipality itself launched investments into public spaces, which, due to the multi-tear governance system, is largely limited to investments around the prefab housing estates' green areas (as this is in district municipal ownership and hence under municipal control).

The greening interventions in public areas launched by the municipality are limited - e.g. simply to the fact that the municipality controls only a fraction of the surface in the district, e.g. one larger park in the center of Kelenföld, and otherwise the green areas in the large housing estates. **Still, the municipality sees its role as a 'pioneer', to show how small-scale transformations of the built environment can contribute to climate aware design:**

„They have come to the fore. Yes. It may not have been 8 years, but I would say that it is in the last 5-6 years that these nature-based solutions have really come to the fore, both in stormwater treatment and in the establishment of biologically active surfaces in general, or I don't know what the right word is for this, that the surface exists, but that we make it better so that it still works.” – municipality/green area management department

District 11 focuses on ‘nature-based’ solutions through programs like ‘Betonból zöld’ (From Concrete to Green), which identifies and removes redundant paved surfaces in housing estates to restore biological activity. These efforts aim to replace asphalt with green islands that can absorb water and improve the local microclimate. While these projects are often small-scale (200–300 square meters), they collectively increase the district’s green surface ratio. Although the ‘Sponge City’ (szivacsváros) concept is a key strategic goal according to the local green space development plan (2019), emphasizing the retention of rainwater for local cooling and irrigation rather than letting it run off into sewers, large-scale implementation by the municipality is still lacking. In terms of needs for further greening in large housing estates, we are witnessing now the outcomes of long-term tree growth in older estates like Kelenföld.

4.2 Participation and governance (procedural)

Based on the interview with a former municipal civil servant **the municipality was a key player in fostering the renovation works** not only due to the fact, that municipal co-financing and preliminary decision was an obligation in the 2000s, but also the municipality was eager to support the condominium managers through a number of channels to be prepared to mobilise the owners of the flats to come on board - regular info sessions, with high level and well informed speakers supported informing these stakeholders.

„So that was ultimately part of the panel programme. We got so involved here that we invited different entrepreneurs to the general assemblies of condominiums, so we didn’t direct them, we invited entrepreneurs, and that is the way, here’s the track, you can choose from it. So they introduced themselves with references, and based on that, they knew whom to choose.” - former chief architect

Due to the conditions set out in the condominium law, owners need to agree on any investments (with 50%+ votes of the owners being present in the condominium assembly), thus, it was and is vital to make sure that there is interest and understanding at the household level about the works, the potential benefits, and costs associated with the interventions (e.g. costs of the loans). Oftentimes, however, open discussions with owners are replaced by written voting mechanisms (e.g. also to ensure a broader representation of interests through more voters). The condominiums’ organisational settings are decisive in planning and implementing retrofits - e.g. the controlling body (which is also an elected body, consisting of owners, and supervising the finances of the condominium) is often well trusted, so any ideas promoted by it would be also supported by the majority of owners with a higher probability.

In the case of greening interventions, where the municipality itself creates new/upgrades existing green space, participation and consultation in their design and implementation was perceived limited even by the municipal employees. In more recent years, a ‘community budget’ program was launched where neighbourhood level initiatives are also welcome. Whereas a locally committed green NGO perceives this as a “propaganda”, it seems that in one of the yards in Kelenföld, where a particular (petanque) open space was created with the

help of this fund back in 2019, neighbours got used to it, and it seems to mobilise elderly to go and have some recreation time while socializing, as it is stated by a municipal expert.

In case of densification issues there is a key bottleneck, emphasized by the former chief architect, to having a transparent framework for participation and governance, which is the system of 'National High Priority Investments', which essentially overwrites local rules, planning, strategies and hence local urban development, moreover it fully neglects civic will. This is a legislation by the state that selects certain urban development projects and elevates them from local spatial plans and zoning legislations. The district's current urban development strategy is defined by a tension between market-driven densification and municipal efforts to restrain it in order to reduce the density of new investments, protect green spaces and be able to provide proper services to the new residents. In 2022, the municipality imposed a 'building ban' (prohibition of changes) on over 50 properties in the eastern part of the district to stop rapid, uncontrolled intensification, but the government facilitated large scale residential and office constructions have overruled these efforts. Thus, in the district, a number of new investments - beyond Kelenföld - are characterized by such a framework, even ignoring the 2022 local rule on the 'prohibition of changes' in designated areas of the district. At the same time, in Kelenföld, the municipality applied some control on retrofit design through its chief architect's competence; even in cases where no public funds were allocated for the retrofits, the municipality could define e.g. the colour of the building facades. Moreover, once the municipality co-funds any of the interventions, there is a tighter control on both the condominiums and the contractors - e.g. condominiums are obliged to employ a technical inspector and need to correspond with the most current standards for energy retrofits.

However, there is a reported heterogeneity of responses to civic voice at the level of local decision making: while the slogan quoting that the district is full also contributed to the intention to halt further housing investments through the prohibition of changes, the NGO working for voicing environmental concerns reported being cornered, and ignored by the municipality. **In terms of greening interventions, civic participation remains limited to individual concerns** (like no mowing of grass, dangerous trees).

„I have been in the Újbuda [district 11] Media TV studio several times regarding the overbuilding of Újbuda, so several such reports have been made, and after an encouraging start, we have now been experiencing a downward spiral for more than a year, because this Újbuda is full, I think you have come across this slogan, at the time during the local government elections this was Imre László's [local mayor] slogan to the voters, that we want a Green Újbuda, and that we protect our environment. Now we are experiencing the exact opposite of this.” - representative of local pro-environment NGO

Civil organizations like Védegylet emphasize that NBS must be part of a complex urban forest concept rather than just planting a few trees. They argue that current developments often lack a cohesive ecological strategy, focusing more on aesthetic "greenwashing" or propaganda.

4.3 (In)equity (distributional)

While retrofits and improvements to public areas are welcome across Kelenföld, the spill over effects are observed with criticism from the residents: e.g. once a public area, a recreational park or a playground is renovated or created, that would attract visitors and users from beyond the close neighbourhood, people would voice objection.

“But people feel that no matter how many tens of thousands live in a housing estate, they are not really happy when outsiders come in.” – municipal green policy expert

Similarly, the new shopping mall investment in Kelenföld serves primarily non-residents, while seems to weaken the neighbourhoods’ central hub services’ survival potential.

In the case of the energy efficiency retrofits, there are cases - and also the opposite cases - of tensions within the condominium or housing cooperative community, where those who are poorer or would benefit less than other residents objected the retrofit (e.g. the surface of the house that get insulated is much smaller than that of other owners, but given that the costs are shared based on ownership share / floor space, some pay proportionally more for the retrofit than how much they anticipate to benefit from the effects).

„Then there were those who said that they wouldn't pay [for it], because they made a calculation, what do I know, now I don't want to say anything stupid, how much it was, that it was his share, he calculated how many square meters of wall there were, that they insulated it for him, it was only 16-1800 forints, he would pay the rest, no. So, there were those people. Well, there are those people. Well, like this, how can I say, people with worse leaks, who don't pay.” - condominium manager

Whereas municipal interviewees reported that equalisation of the investments across the poorer or richer neighbourhoods was not in the forefront of all perspectives to follow, simply due to the fact that any energy efficiency retrofit investment had to be initiated by the condominiums and cooperatives, thus, they are being mainly bottom-up organised. Thus, there was limited room for equalising efforts at the public policy level, and the policy impact of the municipality was largely limited to raising interest, and providing technical assistance, and then the co-funding to the extent it was available.

Nowadays, in the (limited budget) case of the nature based solutions run by the municipality, the selection of places for interventions is largely focused on where the most residents could benefit from the small scale programs (as there are budget constraints at the level of the municipalities, and their competence is also limited). E.g. green updates would primarily go to the large prefabs, which is also driven by the fact that historically, green areas are located in the large housing estates anyway.

The investments beyond the control of the municipality (outside Kelenföld, mainly in brownfield areas) predict some other dynamics with regard to distributional equity of the benefits of

densification, though. At the same time, these investments have been stabilizing or even contributing to the growth of the market position of Kelenföld.

“The scale of new boosting - and locally uncontrollable, due to state level regulations - developments outside the Kelenföld area, but in close vicinity of it, showcases that the benefits of investments accrue to investors, while environmental damage (e.g. heat island effect, traffic) falls on residents.” - representative of local pro-environment NGO

The municipality has been negotiating with investors in the district areas under its control to serve a more even territorial distribution of the benefits of the investments. It has been pooling the so-called ‘investment contribution’ requested from each new housing project in the district, independent of where it takes place (except those under the government special regime) - and a part of the funds collected is reallocated for NBS or other projects (including public service development). Also for new developments, the district enforces strict greening standards. Municipal officials also negotiate with developers: This tool, the so-called Town Planning Agreement (TRSZ), allows the district to limit developers to build only if they agree to a 20% reduction in volume and a 5% increase in green space compared to original zoning. This model forces developers to make trade-offs between profit and public amenities like community spaces or ground-floor retail. On the other hand, as town planners emphasized, none of these tools can be applied in case an investment is considered by the state a ‘National High Priority Investments’.

4.4 Political mobilization

Political mobilisation around energy efficiency, densification and nature based solutions investments in Kelenföld has rarely been observed. However, as reported by the interviewed NGO active in the field of environmental protection, they successfully mobilised civic voice against the demolition of the neighbourhood center, itself a large complex built from concrete between 1974 and 79 (it accommodates some shops, a library, formerly also a cinema), while close by, at the edge of the neighbourhood, a new shopping mall was planned and then finally opened. Thus, they essentially could halt creating a new plot for densification against the local political will of the municipality.

“Regarding the Bikás Park, what I can say is that for now, we have saved this city center. One politician said, "This time, it didn't happen for us. You succeeded this time, we didn't; next time we will." So long as—and this is a global problem—an area is considered valuable and a huge profit can be squeezed out of it, they are going to grind it down. We are seeing in countless places that they buy up properties with buildings that could be renovated or repurposed, but they can make a much larger profit if they turn them into, for example, an office building or a shopping mall.... I don't know how much further this can be pushed—this overdevelopment—but it is a fact that if they say an area is "valuable," it will be bought up. This "buying up" process works in two ways: either they make the living conditions for those residing there impossible so that they sell, or—and this happens less frequently—they receive an offer that makes it worth their while to move.

Essentially, what I see here is that the concept of urban development is being primarily overridden by economic interests.” – NGO representative

On the other hand, alternative civic voices can become also loud while opposing transformation of dilapidated common space into green and recreation area which was based on community led planning: the yard area between two large buildings in Kelenföld was transformed into a petanque field, mainly attracting elderly to socialize in open air, still, residents from the lower floors wanted it to close down due to the “noise” it was making. There the municipality wanted to address the issues of public space design efficiently. Originally, the housing estate had some sports fields, but with the demographic transformation these fields became redundant and also dilapidated, so basically out of use, but at the same time covered with concrete. The park/recreation function was then achieved by replacing the “loud sports” function, the upgrading of which would have generated opposition by the residents by a “silent sports” area, a petanque field. At the end of the day, some residents formulated objections, but with time, they got used to it.

„This was a grassroots initiative. It was supported by the capital's participatory budgeting, and that's where the idea for a petanque court was pitched. They didn't originally imagine it for this specific spot; it was only when we were looking for a location that the idea came up that we have this sports court here that we ought to do something with.

The interesting thing is that I can't imagine a quieter sport than petanque, yet there were still people from the two buildings on either side asking, "Why put this here? It's going to be loud." No. Actually, petanque is generally not [loud]—that's just not true.

Those who play it say it brings all age groups together, but typically it's the elderly who play or use it most. It is incredibly important to provide some kind of quality leisure opportunity for the retired age group. It doesn't even matter if they aren't playing sports; just that they go down, meet, and socialize with others so they don't become isolated. These housing estates are like "human factories," yet people are still lonely. So, it's vital that these community functions exist.” - municipality's greening department

The residents often oppose the reduction of parking slots for the favour of creating new green spaces, as municipal experts experience, especially if it's the free parking slots that are available for local residents. Such interventions are always planned with care (and in a rather silent manner), and no radical changes are proposed, just e.g. making sure that cars do not park on the soil of the trees. This is to mitigate the “inherited” shortcoming of the housing estates in general: with the large-scale motorisation, there is a severe shortage of parking lots, because at the time of the planning and construction of the housing estates, only few people had cars.

Neighbourhood level issues are often ventilated and communicated through local facebook groups, but the addressee is seldom a designated political decision maker. Especially regarding the retrofits, the condominium managers could represent the residents' interests,

and some very local communities, like the informal groups of dog owners or people keen on protecting animals may raise their voice. E.g., in the central park of the neighbourhood, Bikás park, some conflicts between the dog owners, families with young children and those who otherwise want to use the park need to be mediated (e.g. dogs should primarily use fenced areas).

Issues around tenancy rights are seldom explicated in the stakeholder interviews. As for the condominiums' owners' assembly, increase of common costs is always negotiated, but that is normally the platform for criticisms and compromises, or addressing arrears and outstanding payments, and the parties in the process are owners with equal decision rights. Given that the share of social housing is minimal, and the municipality has been generally acting as an "owner who cares", watching that complaints about municipal tenants are also collected (if at all), and costs decided by the condominiums are covered without objections, as managers expressed, condominiums are mostly fine if there is a share of dwelling owned by the municipality.

Civic mobilization around/opposing investment that would potentially have a bad/contestable environmental impact are normally limited to beyond the borders of the Kelenföld neighbourhood, except for one case: civic objection was made to the extension of tram line 1 that connects the neighbourhood with the train station and the new shopping mall, across the Danube bank to Pest. The main concern was that the tram would be loud - then it turned out that the technical solution chosen basically prevented any increase of the noise associated with the tram, and people are now happy with it, as one of the managers, representing the residents exposed.

4.5 Socio-ecological impacts (positive)

According to most interviewees, one of the most significant social outcomes of the retrofits and the green area development (along with the new transportation hub of Metro line 4, the extended tramline and the new shopping mall) **is the 'renaissance' of the housing estate of Kelenföld**. Young house-buyers especially have been attracted by the area, along with micro-landlords. Energy-efficient modernizations and renovations make these apartments attractive investments - thus, worth to be kept in the broader household portfolio (e.g. children helping their parents to fund the investments, or parents helping their children to acquire housing here). The expectation to be able to 'invest' achievable utility savings into the buildings improves the physical state of the housing stock, while keeping the energy retrofit investments at an affordable level (either through the former $\frac{1}{3}$ - $\frac{1}{3}$ - $\frac{1}{3}$ funding scheme or more recently through supported loans). This creates a stabilizing effect on the local population, as young adults are able to purchase homes in the same neighbourhoods where they grew up, supported by family proximity and stable property values that now rival district averages.

"So it's like that, and these places are somehow transforming, but I also tend to think that I think panel apartments are having a renaissance again among first-time home seekers."

Probably because of affordability? So what can you buy on the housing market? I think that [affordability] is one thing. The other is that it turned out that they're no worse than new

condominiums, and they're cheaper compared to them.” - former real estate manager of the municipality

Retrofit investments aim to achieve the technical modernization of residential buildings that directly impacts the physical well-being of inhabitants. Beyond the insulation of facades, the replacement windows and doors, and in some buildings also ventilation motors have led to improvements in indoor air quality and temperature regulation according to the observation of housing managers. By reducing mould growth and the need for constant air conditioning, these upgrades create a healthier living environment. **Residents report a higher sense of comfort in their homes**, which are now quieter and more aesthetically pleasing, directly contributing to a higher standard of daily living.

In Kelenföld, the most appreciated green improvement is that of the central park, Bikás-park. It is not only a visually attractive place, but it hosts recreational functions, and serves a number of different groups, including families with young children, dog owners, a variety of sports activities, and also youngsters or other age groups with a number of social backgrounds who would attend various events/festivals organised in the park throughout the year. At the same time, the green quality of the housing estate has been maturing with the time without any radical interventions: the long-term tree growth in any of the older housing estates like Kelenföld is now reaching its 'best condition', with trees reaching up to the 8th floor. This "beligetesítés" (making the area park-like) significantly contributes to the microclimate and property values, although it was a process that took 30 to 50 years to mature - and it went on step-by-step. In addition, some further improvements to formerly concrete-covered plots also contribute to the attractiveness of the area, and its improved microclimate.

The area has always been well served by public services: education facilities, the hospital, child care and commercial sites have been present since the early years, and now a few community based spaces are also available (fitness parks next to the playgrounds, the petanque field).

Interviewees acknowledge that Kelenföld's spatial position is excellent within the capital city and the district, too: it is well connected with public and road transportation and well covered by public infrastructure. The densification effort through demolishing the former neighbourhood center service building (that hosts a few shops, the library and the former movie) was successfully challenged, and opposed to the neighbouring areas where 'National High Priority Investment' status investments are promoted by the central government. That bypass local building bans and green standards, Kelenföld remained a compact neighbourhood with only few housing but many other types of investments. This creates a 'dual city' appearance where state-backed projects are significantly denser than those governed by local municipal rules (note that as of the end of 2025, there were 19 such investments, producing app. 10,000 new dwellings - compared to the current total of app. 83,600 counted in the 2022 Census, this adds 12% new housing stock to the district, mostly in public service-poor former brownfield areas).

4.6 Socio-ecological impacts (negative)

The intense housing price increase has been affecting Kelenföld to no lesser extent than other well-connected housing estates of district 11. There is also a spill-over effect: new investments in the close neighbourhood - along with the current ongoing home-buyers support schemes - drives prices up to 1.5 or even 2 million HUF (€ 5,000) per square meter. This may effectively be pricing out first-time buyers and creating a market of private tenants in some areas. In Kelenföld, this dynamic is observable only partially, but that may be also connected with the general demographic processes of the residents (the first generation of residents has generally become very old, and their property was sold off, or inherited by their children who love to remain here). At the same time, those who grew wealthier while living in the housing estates may have left for other housing options, up the housing ladder.

As observed by the housing managers, those who can buy the Kelenföld dwellings, **the new residents represent a better-off social stratum** - they have a better job market position, and they are younger, too, and they can also profit from the rich network of public services. At the same time, in some buildings, there are quite a few private micro-landlords who bought the dwellings as investments (e.g. to make profits based on the expected real estate price increase of the neighbourhood and the district in general), and their tenants care less about the buildings, the (social) behaviour and the upkeep.

In the Kelenföld housing estate there were very few densification activities for the last two decades, thus, ecologically no tangible impact was affecting the neighbourhood. The large-scale housing investments are in the neighboring area next to the Danube bank, the residents of which may then in the future increasingly use the public services in Kelenföld - but no impact has yet been visible in this respect. In those areas, there is a visible conflict between greening and densification policies; as developers build vertically to preserve minimal green surface ratios, the resulting buildings can block wind corridors, worsening the urban heat island effect. This, however, is not a threat to Kelenföld according to the former chief architect.

In general, access to (more) affordable housing in Kelenföld is hampered by the real estate price development of the whole neighbourhood, irrespective of the fact whether the building was refurbished or not, as housing managers perceive. Formerly, this may have played a role, but today close to two-third of all housing has been upgraded to some extent, and costs have been borne by the owners at rather affordable levels, with a few years of increased common costs related investment financing that has been 'paid off' as a 'windfall gain' due to the general price increase on the Budapest housing market. Also, primarily, it is the location within Budapest, as the south-western gate of the city, that is decisive for the massive price increase of housing. Reportedly, a large share of the residents has remained the same and they benefit from the increase of their ownership's value as sitting tenants.

On the building level the cost of investment as a pressure for "renoviction" may be considered. The financial burden of retrofits on residents may be significant, but there are a few household strategies to mitigate these risks based on the experiences of housing managers: adult children of pensioners take over costs (e.g. with the expectation that they will inherit the dwelling anyway), or **the interventions are kept modest to stay affordable**; common costs often double for a period of 5 to 10 years to repay loans. In more affluent estates in District

11, like Gazdagrét, residents manage this better, but in parts of Kelenföld, some perceive it as a risk that may lead to ‘renoviction,’ where lower-income residents or pensioners are forced to sell their apartments due to the increased costs. However, no evidence is available for this transformation, other than at the pace of demographic change.

Condominium managers also reported about a further component of reluctance to contribute to the investments: landlords (who are nearly exclusively micro-landlords of one dwelling that they rent out) normally would pass on the increased costs to the tenants, but fear that the tenants would potentially be behind with payments and hence they would end up in arrears / belated payments of the loans. Thus, their interest to participate in investments seems to be more limited. The installation of heat cost allocators (költségmegosztók) is also a standard but debated technical solution. In some cases, residents refuse to use them and prefer flat-rate payments, while in others, the high cost of remote reading services reportedly cancels out the energy savings. Retrofitting becomes truly effective only when insulation and regulation are combined.

The first tenants of the housing estate are now becoming older, and while many have left the housing estate either by selling off, or inheriting the dwellings to their children, there is still a considerable share of elderly. For them, and the lower middle class residents, the primary effect of retrofit interventions launched by the condominiums is an increase of the common costs associated with the investments and the loans. Thus, formerly, but also nowadays, managers experience, that there may be a reluctance to go for large retrofit packages in the future, in case there is no family network to support and mitigate increased costs.

However, condominium managers have diverging views about the impact of this issue: while some claim that in general, pensioners have been also supportive of retrofit investments (e.g. by having the motivation of an increased value ownership), others reported that in buildings with higher share of retired owners, it was less successful to launch interventions. Although especially in the years after the great financial crisis, people faced difficulties to pay common costs, no mass evictions happened.

„No, no, at least I haven't heard of such a thing [mass evictions], and perhaps another thing that might be related to this is that in most cases, if it was an older person, there was a child behind them who supported them in some way and was interested if something happened, they would have a valuable property. So that also played a role.” - urban development expert

4.7 Tensions and power dynamics between stakeholders/actors

In Kelenföld, stakeholders at the local level, and owners living in the area, are largely on the same page, when it comes about the appearance of the area, and that the large prefabs visual appearance and the quality of life in the building needed support, stabilisation, in general, more attention. At the same time, there are some conflicting goals that are apparent at a more abstract level - whether the interventions remain at the level of ‘greenwashing’, whether the most climate relevant solutions are promoted and implemented. These conflicts become

tangible when the technical solutions of the retrofits and the greening interventions are taken more under the loop.

For example, while residents and owners expect an improvement of their quality of life (and rise in the housing value), the retrofits' technical features demand adaptation and change of everyday routines - e.g. ventilation capacity of the new plastic windows is limited compared to the old wooden ones, therefore, there is often mould in the dwellings where people wash and hang their clothes as they used to. The increase in energy costs that hit condominiums over-proportionally, made central ventilation be stopped, and therefore, moulding may speed up. So, the personal health and sense of quality of life may deteriorate instead of an improvement to residents' general well-being into which they have invested capital/savings, and would be very easy to achieve if they were more aware of how to ensure that they get the most out of the upgrading.

At a more general level, whereas climate aware local regulations that promote more green space and biodiversity in public spaces in large housing estates, locals would often be critical about the loss of (free) parking spaces, so **whereas there is consensus that more green creates less heat islands, residents would still be complaining about a minor reduction of parking opportunities**. Also, there is a conflict between the stakeholders in charge for public space design: more diverse flora in public space creates essentially less green areas for recreational activities, leisure and sports or just free walking for families who are otherwise locked up in a small space as the majority of housing is in large prefabs. They also need floor space in parks just to 'step on', or be available for children who spend summer holidays in the city, but their families do not have any holiday homes in the rural areas, nor financial means to travel. It is essential to create useful space for them, and not only fenced green areas that are biodiverse and hence more sustainable.

„But regardless of that, yes, our goal is to go green as much as possible. We often run into conflicts because, for example, we like to build surfaces that aren't paving stones or asphalt, but stabilized, permeable surfaces. Well, there's always trouble with those; people complain they're either dusty or muddy. Actually, they aren't really muddy because they drain quite well, but people absolutely hate them.

However, there are times when we stand our ground and say it doesn't matter if they hate it, because it's necessary. It's usable 90% of the time—maybe just not when it's actually pouring rain. So, we have instances like that. And then, as I mentioned, there's the 'greening' aspect.

We're really struggling with the lawns. My view on this isn't exactly 'trendy' right now, but I believe that where we crowd tens of thousands of people together in housing estates, we have to provide functional green space. We can start from the idea of biodiverse, near-natural grasslands, but those simply don't tolerate intensive use. I believe that in a housing estate, I must provide green areas that can withstand heavy foot traffic and wear-and-tear, while also providing a place for those people to actually relax." - municipal department responsible for green policies

The municipality's different departments also essentially have diverting interests: intensive green solutions are costly to be maintained, so the local greening departments also needs to struggle with the financial pressure caused by budgetary constraints.

The district also utilizes 'bee pastures' (méhlegelő), though these have faced mixed public reception. While ecologically beneficial, residents sometimes perceive them as neglected patches of weeds due to a lack of professional maintenance or communication about their purpose. Water-permeable pavements are another implemented solution, though they are often unpopular with residents because they can become dusty or muddy. Despite this resistance, the local department continues to advocate for them as necessary for sustainable water management.

At the residents' levels, the financial interest of micro-landlords vs. interests of owners in condominiums can diverge as managers perceive that: whereas the first group is often only interested in maximising profit from the rental unit, and not particularly interested in improving housing quality, sitting tenant owners' voice in common decisions can be sometimes more silent, and then the condominium community may opt out from upgrading activities.

A further conflicting interest is related to the prescribed quality frameworks of co-funded projects: whereas **the centrally co-funded investments set technical standards that end up being extremely costly** - factually, for good reasons, as such investments are needed for and effective reduction of energy consumption -, **but owners rather go for cheaper or partial solutions that on the long run would have only limited effects but are affordable for them at this moment**. Condominium managers report that the reason behind such behaviour would be that the co-funding levels cannot compensate for the increased costs of the larger-scale renovations.

„So, as soon as an energy expert/technical specialist came out, he told us that yes, you have to replace all 720 windows, whether you want to or not. You have to replace the roof; you have to do this, that, and the other. This is because, you see, the windows must have a certificate of compliance. Now, regarding windows with certificates versus standard market windows, the latter have certificates too, but since we're talking about 'free money' [subsidies], they demand that every single piece of paperwork be perfectly in order.

While this might sound great in theory, it's certain that the residents don't have the money for it. For example, if we take a normal window like this one, which according to its specs has a thermal transmittance of 0.75, it costs 230,000 forints. But if we want a 1.0 or 1.1 rated window that the expert quite rightly prescribes because that's what current standards require, then that price immediately jumps to 800,000 or 900,000 forints." - condominium manager

In addition, the case of heating meters is also a particular one according to the housing managers. Whereas the meters are essential to measure the actual district heating consumption within a dwelling. However, the meters are not only costly to be installed - the investment is higher than any potential savings from the reduced (metered) consumption -, but there is also a genuine disincentive to use the meters as the primary source for information

for the billing: those living on lower floors (e.g. first or second floor), vs the top floors have different temperatures due to the heating water's temperature, and those who have more facade vs dwellings that are surrounded by other dwellings need to heat less. Therefore, owners would opt for billing options where floor space defines 60-70% of the heating costs and only the rest is calculated based on the actual consumption measured by the meters.

Investors are also reported to be reluctant to create more green space, because it reduces their profits. Whereas the municipality seems to be successful in negotiating the share of green space in the design, the overwhelming majority of housing investments in the district is beyond its control as they are classified as special investment projects for national interest (see above).

The most visible conflict between stakeholders concerns the whole district area - not Kelenföld particularly: **the new housing investments contribute to a rapid population growth, without any further capacity extension of public services**, including public transportation or health and public education services, and the municipality does not have any control on the building parameters and green investments that should accompany the housing project. Therefore, the core conflict is between the municipality and the investors whose projects are promoted by the government, and can be largely translated as a tension between professional interests and (central) political interests in urban development. This means that in addition to the problems caused by the general two-tier government system of Budapest, the highest tier, the central government, has become the most powerful player in urban development in the district, indirectly affecting Kelenföld's position.

„But then, for instance, a developer of a 200-unit residential complex showed up to negotiate, and we asked what the situation was. He said, fine, he'd heard there were other ways to do things—and then, all of a sudden, we received the government decree regarding 'priority status.' We looked at it, and there it was: a 200-unit residential development. Which is nonsense, because it simply isn't one." - urban development expert

4.8 Innovative governance mechanisms

In Kelenföld, there are no innovative governance mechanisms at play that would particularly support civic perceptions to be articulated and conveyed beyond the regular participatory mechanisms designed and run 'as business as usual' e.g. by the municipality, or within the owners' communities in condominiums and cooperatives. These mechanisms have limitations: some NGOs dealing with environmental protection or loose civic networks lose momentum quite easily, or their activities get very limited (e.g. to channelling information into local groups via facebook groups). Védegylet, a civic voice for example, could achieve blocking the demolition of the neighbourhood centre in Kelenföld, to prevent further investments (see above), and halting the development of a train track extension investment until it got all environmental permissions, that is beyond the neighbourhood, but ever since it has not been invited to consultations, nor is there any formalised platform for planning where such organisations could play a role.

The local interests vs central government driven large housing investments put the large (politically better connected) investors into better positions, so there is absolutely no room for negotiations initiated by the civil society or the municipal government either. In case the municipality has the control over the investment, then they ensure via a series of negotiations and contracting that the level of greening is more extensive, and e.g. there is also attention that the depth of the soil above the underground garages enable trees to grow, so sustainable green areas can be created.

Back in the early 2000s, when the prefab-retrofits were launched, the settings were much more controlled and steered by the local government. The municipal government launched a regular platform for information exchange, technical assistance, networking and sharing, in order to facilitate the participation of the condominiums in retrofit projects, and to generate investments into the energy efficiency of the housing stock in the district.

“Well, if I get two-thirds funding just by scraping together one-third myself, then if I don't do it, I'm missing out on a great deal—pardon me for oversimplifying things. This is how many people and many housing cooperatives thought. And because of that, from what I know and have heard, one of the most successful 'Panel Programs' was implemented right here in the 11th District. The municipality put insane amounts of energy into it. I mean, we worked together with the municipality's housing department back then, and I remember it well: the endless briefing events, the mountain of information materials, the 'let me help you, let me hold your hand' approach...” - urban development expert of the municipality

It was also so more important and relevant in the first decade of the century, as the funding model was $\frac{1}{3}$ - $\frac{1}{3}$ - $\frac{1}{3}$, which meant that the three stakeholders were interdependent, each taking the same risk and responsibility for the interventions (the $\frac{1}{3}$ share of the owners could be also paid if backed by a loan, so financial institutions were also genuinely interested in the scheme).

4.9 Tourism and market pressures

Market pressures are especially relevant in district 11, at two levels: as local inhabitants see it, there is an estimated large share of private rentals also in the prefabs of Kelenföld (condominium managers report of app. 20-25%), on the one hand, and on the other hand, the massive investments into the district's housing stock (currently app. 10,000 dwellings are being built only in the framework of the special priority investments projects) have a spillover effect on this area, too.

Historically, the district has always been a high demand area, and with the launch of the metro line 4, the adjustment of the public transportation connection, the upgrading of the hospital and various education facilities, and some investments into commercial sites, along with the central park of Kelenföld, there was a strong stabilisation of the neighbourhood. **Thus, primarily the location effect has been a driving factor in the housing price development.**

“So, in my opinion, people buying here for investment do so because the area is excellent in terms of proximity to everything. Especially now, with the tram and the metro right here, not to mention the universities—practically X number of universities are within a 15-minute reach. The University of Technology, even the Medical School via the two metro lines, Corvinus, and so on. [] I think it was the fact that certain people were pushed out of the area, plus the infrastructure. It’s not just the plaza and the tram; basically every shopping center is just 5 minutes away by car—the ones in Budaörs might be 8 minutes, but Savoya Park and Campona are right here. I think these had a very, very big impact.”
(condominium manager)

4.10 Gaps in perceptions between civic groups and public agencies

The core gaps in perception of the main stakeholders, that is, the NGO sector, condominiums (through the lens of condominium managers), and the municipality and the public agencies in general can be grouped around seven main topics.

1. Participation and transparency

The Municipality claims that urban development agreements are transparent and highlights successful community planning projects in a few areas of the district, including some bottom-up initiatives regarding upgrades of the public areas in the neighbourhood, however, interviews also confirm that participation is low. Similarly, condominium managers struggle with low resident engagement, noting that decisions often depend solely on a few active committee members. Civil groups argue that participation initiatives coming from the municipality are merely ‘brainstorming’ propaganda, claiming the local government isolates critical voices more recently.

2. Densification vs. green spaces

The local government views development contracts as tools to limit density and increase green space, promoting their ‘Green from Concrete’ program. However, building managers point out that mandatory parking requirements (one space per flat) often consume potential green areas in overbuilt residential complexes. Environmental activists dismiss new ‘bee pastures’ as unkept weeds used to mask budget cuts (although they are presented as ecological solutions enhancing bio-diversity), arguing that economic interests always override ecological goals.

3. Renovation: savings vs. financial burdens

The Municipality highlights the success of the ‘Panel Program,’ stating that 80% of the Kelenföld housing estate has been modernized. Condominium managers counter that actual savings on district heating are minimal because high meter-reading fees often offset the benefits of insulation. Civil advocates warn of ‘green gentrification,’ where increased common costs driven by renovations push out low-income residents and retirees, but also admit that that may be more prevalent in other parts of the district, not in Kelenföld particularly.

4. Technical traps of modernization

Strict energy efficiency regulations are seen by the municipality as a necessary guarantee of construction quality. Managers argue that these state mandates, such as requiring windows with corresponding technical features would cost up to 800,000 HUF (€2,000), are unaffordable for residents. Also, electrical grid overloads from an ever increasing number of air conditioners cause technical difficulties that can be only tackled if large-scale investments are undertaken to retrofits. Civil critics highlight technical failures, noting that insulation without proper ventilation causes mould, while AC units cool interiors but further heat the outdoor 'urban heat islands.'

5. Local vs. state control

The Municipality complains that 'priority government investments' bypass local green regulations and density limits entirely. While managers find local municipal subsidies helpful, they note that slow post-financing processes may create severe cash-flow problems for contractors. Civil groups feel completely disenfranchised, stating that neither local referendums nor public protests matter when it comes to high-priority state-backed projects.

6. Resident demographics and marketability

The local government sees the district as stable and attractive, with local youth primarily purchasing the new apartments. Condominium managers paint a different picture, reporting that high rental rates (20-25%) may lead to property neglect since owners prioritize profit over maintenance. Civil organizations argue that in general, the new luxury developments off but still in proximity of the neighbourhood are not built for the average citizen, as prices have become completely detached from the reality of those living on standard wages. As a spillover effect, the prices in Kelenföld have also been on the rise.

7. Conflicts in public spaces

The Municipality admits that popular locations like the extensive central park of the neighbourhood (Bikás Park) are "overused" by major events, and that it generally also attracts people beyond the neighbourhood residents, which degrades the quality of the grass. Managers report constant social friction between dog owners, and families with children, who equally want to use the public green spaces. Also, harassment from public space inspectors towards people experiencing homelessness, or youth being present at late hours are recurring perceptions reported by them. Civil activists criticize the lack of genuine green infrastructure, claiming projects are visually flashy but ecologically hollow.

5 Critical analysis: Budapest

5.1 The role of green policies in influencing social transformation in Budapest

The two neighbourhoods under investigation have been hit by the general issues of housing market pressure in Budapest. At the same time, they represent two extremes of housing market and population dynamics, and the policy responses by their respective district municipalities also differ. Therefore, they are useful to explore quite different challenges in the capital city landscape.

District 8 has been running the most comprehensive rehabilitation program since the start of the 2000s with a combination of financial resources, which also included social housing investments, new urban functions, large-scale private investments. In Magdolna quarter, the case study area, the so called 'social rehabilitation' programme strived for keeping as many marginalised households in the neighbourhood in upgraded or newly constructed housing, with improved services, whereas in other parts of the district, other strategies dominated.

District 11, and within it Kelenföld, has profited from inwards migration of younger households, and large private investments, given that it is the western gate of the capital city, with large so-far underutilised areas (including brownfields). The dynamics of the processes fuelled house price increase, the district being one the most growingly priced areas of the capital city. The public housing stock is managed with social targeting, but no investments were undertaken in terms of increasing the numbers of affordable flats.

To sum up, the two cases is Budapest - Kelenföld housing estate in District 11 and Magdolna quarter in District 8 - represent two ways of urban transformation. Green policies are not standalone interventions in these areas, but they are technical tools that contribute to the transformation of the territories.

Primarily, densification and nature-based solutions operate through a territory-based logic. While energy efficiency can follow its own independent logic (aiming for the highest possible number of energy-efficient buildings), it ultimately integrates into these territory-based policies. Consequently, the physical and social transformation of these areas is generally not driven by 'green' initiatives, but rather by other factors, such as large-scale investments (e.g., the Kelenföld tram, metro, and Etele Plaza as the new shopping mall situated within the neighbourhood) or, in the case of the Magdolna quarter, the transformation of neighbouring areas, the redevelopment of public spaces (not exclusively green areas), and traffic calming measures.

Beyond direct local investments, social dynamics in the target areas are fundamentally influenced by the broader housing market shifts in Budapest. This includes the continuous appreciation of the 11th District, which attracts residents of increasingly higher social status, and the general decline in housing affordability across the city. The latter has pushed the Magdolna quarter into a 'just affordable' category, attracting young families starting out (often referred to by the phrase, "the 8th District is the new 7th District").

Housing market potential fundamentally determines the extent to which green (or other) investments contribute to property value and, through this, to territorial transformation. Previous studies (Ertl et al., 2021) have shown that while energy status (energy performance certificates) generally contributes to property value, this is less true in large cities, especially in Budapest, where location is a more decisive factor for increased demand than energy efficiency. Therefore, energy-efficient renovations result in higher value appreciation in high-status areas, while their impact is barely perceptible in lower-status neighbourhoods.

5.2 The role of green policies in influencing housing inequalities in Budapest

Housing inequalities are evaluated through the lens of housing accessibility, housing affordability, housing quality and the spatial distribution of housing for vulnerable inhabitants, focusing on the three core types of interventions:

The impact of energy-efficient retrofits

In the case of old (100-150 years old) buildings, energy-efficient investments are/were inherently scarce because they are not a priority; these communities (run as condominiums) struggle simply for survival and operational functionality. Furthermore, the thick walls reduce the immediate need for insulation, and the small apartment sizes (characteristic of the 8th District, though large downtown flats also exist) result in naturally low energy costs. From the perspective of the municipality, as a housing provider, it is not only scarce resources that make any interventions be postponed in general, but also more recent regulations as of what types of upgrades can be funded - e.g. no gas based heating systems can be installed anymore from subsidies, but electric heating is costly to tenants and technically it is unfeasible to be installed due to building regulations or lack of funds for any further capacity extensions of the electric grid in the old buildings, which limits/postpones further energy efficient retrofits.

For prefabricated panel buildings, maintaining functionality is easier and cheaper. Energy-efficient investments are proportionately more affordable, and since major subsidy sources were concentrated here in the 2000s, investments in this sector are far more visible.

In neither area (Kelenföld, Magdolna) did we find that energy-efficient renovations had a meaningful impact on affordability:

- On the savings side, the impact was negligible because energy prices have been capped by the 'utility cost reduction' (rezsicsökkentés) policy since 2013.
- On the cost side, the impact was also limited due to high subsidy intensity (substantial renovations simply did not occur without subsidies, except where the building or cooperative had significant additional revenue).

The phenomenon of 'renoviction' was not supported by the interviews. This is primarily due to the moderate cost burdens resulting from subsidies and the tendency of residential communities to make risk-minimizing financial decisions. The required majority rarely makes

decisions that would fundamentally harm the minority, as that would jeopardize the project's financiability. Housing managers unanimously stated that renovations did not lead to relocation or eviction; arrears only appeared where they had already existed prior to the renovation.

Many interviewees in both areas confirmed that renovations led to quality issues, most typically mould, if the airtight sealing of the buildings was not followed by a redesign of ventilation systems or if behavioral changes (proper ventilation habits) were not sufficiently established.

The impact of nature-based solutions (NBS)

Qualitative research reinforced the anticipated finding from the quantitative analysis undertaken previously that suggested that NBS has a weak impact on housing inequality in most cases in Budapest. In fact, by improving environmental quality, NBS can actually enhance the quality of housing.

Experience shows that green space development can influence property values through improved quality, but this does not necessarily trigger sales; instead, it manifests as a higher quality of life for the existing owner-occupiers, who therefore may want to stay on and not to sell off their ownership (and e.g. make use of the windfall gain, if any). Value increases and market pressure are more significant where development is highly visible and large-scale. Such 'mega-projects' do not just improve but reposition an area, for example, the renovation of Mátyás Square in the Magdolna quarter, or, as a spill-over effect, recent (high density and low green level) investments into the brownfields adjacent to Kelenföld would contribute to housing price increase or stabilisation.

However, the nature of the NBS intervention matters. Until recent years, green space development in Hungary was rarely driven by NBS goals; rather, it aimed at tidying up areas and adding functions. This introduced new activities that, in some cases, "disturbed" residents, leading them to perceive a decline rather than an improvement in housing quality (e.g., playgrounds and sports courts in Magdolna). Additionally, the intensive use of green spaces by socially marginalized groups was a point of criticism in both Magdolna and Kelenföld, but that shows rather the failure of social provision systems and that some people experiencing homelessness tend to opt for using these public spaces that are safe for people to stay over day (and sometimes night).

The impact of densification

Of the three 'green' policies, densification has the greatest impact on spatial inequality. New construction is very expensive, partly due to strict energy requirements (though currently not significantly more expensive than secondary market homes), and only the affluent can afford it. This social stratification is visible even in 'infill' developments (though there, social mixing could theoretically occur in schools). However, total separation is driven by brownfield developments, which create large, isolated and dense housing enclaves - but these did not happen in our selected project areas, rather in neighbouring areas.

Plot size fundamentally influences the impact of densification: the Orczy area (neighboring Magdolna) can gentrify more easily than Magdolna because it possesses large vacant lots suitable for massive buildings, bringing a high volume of new residents to the area. In Magdolna, plots are fragmented, so only small-scale infill developments have an impact. Next to Kelenföld, in a new neighbourhood called Budapart, massive new developments reshape the district, producing app. 10,000 new dwellings (which, compared to the total number of housing in the district, means a 12% increase).

Finally, the gentrifying effects of NBS and renovations are weakened by the high rate of homeownership in the housing sector, as high transaction costs significantly reduce residential mobility. The information about the turnover in the private rented sector in the areas is largely missing, but reportedly, financial expectations from rent revenues have positioned dwellings especially in Kelenföld always quite high on the market.

5.3 Inspiring policies and lack of policies for influencing housing inequalities caused by green policies

In the two-tier system of Budapest, some policies have essentially had added value, especially when fuelled by (former) well designed central government retrofit schemes. These retrofit policies shared the risks and the resources needed for renovations, and made the interventions affordable for the vast majority of the owners (sitting tenants themselves). Thus, the scale of subsidies is, of course, a key issue; this is why residential building renovations were able to function without causing displacement.

We also found that the timeframe of changes also matters, as it determines whether there is sufficient time for adaptation, and as to what pace is there for the valorisation of the retrofits, how much that is then a motivation to sell off, or, on the contrary, to stay and “enjoy” from the improved quality.

The volume of changes is a similar concern; if the scale of change is large, it quickly triggers market reactions. This holds true for all three green policies (NBS, energy efficiency, and densification).

At the same time, the two selected cases also showcase that local municipalities are becoming increasingly less significant actors in Hungary as their room for manoeuvre is continuously shrinking. High-priority government investments (especially in Budapest) strip municipalities of their regulatory roles, there are no subsidies for social rental housing, and there are constant budget diversions. Consequently, municipalities have very little capacity to take action in the interest of vulnerable communities, or to themselves initiate large-scale and impactful investments: there is a general lack of public housing in new constructions, which is why densification has such a powerful impact on housing inequalities.

Despite the lack of resources, the integration of social considerations into green and housing policies remains primarily a political question (e.g., the change of leadership in District 8, or the decision to take on the coordination of condominium renovations in Kelenföld). Even with

a limited margin for maneuver, an administration can choose to be more or less socially conscious.

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7 Appendix 1 – Key interview data

#	Position of Interviewee	Sector/company	Date of interview	Form
1	Senior expert	RÉV8 urban development company of District 8 of Budapest	05/5/2025	In-person
2	Chief architect	Municipality of District 11 of Budapest	07/05/2025	In-person
3	Head of unit and a social planner	Housing and property management department of the municipality of District 8 of Budapest	01/09/2025	In-person
4	Head of NGO	NGO dealing with sustainable urban development issues	10/09/2025	In-person
5	Housing manager of a building in Kelenföld	Property management company	16/09/2025	In-person
6	Inhabitant and Roma activist	NGO dealing with just transition issues	24/09/2025	Online
7	Housing manager of a building in Kelenföld	Property management company	29/09/2025	In-person
8	Former civil servant responsible for housing renovation strategy	Municipality of District 11 of Budapest	07/10/2025	In-person
9	Housing manager of a building in Kelenföld	Property management company	14/10/2025	In-person
10	Housing manager of a building in Kelenföld	Property management company	15/10/2025	In-person
11	Head of department	Municipality of District 11 of Budapest, green policy department	27/10/2025	In-person
12	Head of NGO	NGO representing the interests of municipal tenants in District 8 of Budapest	25/11/2025	online
13	Housing manager of a building in Magdolna quarter	Property management company	02/12/2025	Online
14	Housing manager of a building in Magdolna quarter	Property management company	04/12/2025	Online

8 Appendix 2 – Visuals

Images of Kelenföld housing estate (photos by Éva Gerőházi)





Images of the Magdolna quarter (photos by Éva Gerőházi)



