REDUCING
HOUSING
INEQUALITIES

Case Study Working Paper: RADOMSKO (POLAND)

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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

Radomsko is a medium-sized city located in **central Poland**, within the Łódź Voivodeship. Covering an area of approximately 51 km², the city has a population of around 42,500 residents as of 2024, resulting in a population density of about 825 inhabitants per 1 km². Although Radomsko remains an important local urban centre, its population has been steadily declining over the past two decades, from nearly 50,000 inhabitants in 2000 to its current level. Although the pace of depopulation is somewhat slower than in other cities of similar size in the region, demographic decline and population ageing constitute major structural challenges.

Demographic processes in Radomsko are spatially differentiated. The central part of the city, which covers only 13.75% of the total municipal area but accommodates approximately 45% of the population, is particularly affected by depopulation, ageing, and related social problems. These trends are reinforced by negative migration balances, especially the outmigration of young people, as well as broader socio-cultural changes such as delayed family formation and declining birth rates. As a result, the proportion of residents of non-working age is increasing, while the number of children and young people using educational services is decreasing.

Historically, Radomsko developed as an industrial town, with furniture manufacturing and metalworking playing a dominant role in its economic profile. Like many medium-sized Polish cities, it has undergone profound socioeconomic transformations since the post-socialist transition. Industrial restructuring, limited job creation in high-value sectors, and increasing competition from larger urban centres have contributed to youth outmigration and urban stagnation (Kulesza, 2014). Despite these challenges, Radomsko continues to serve as a local service and housing centre within the regional settlement system, benefiting from relatively affordable real estate prices compared to nearby Łódź.

The city's spatial structure is characterised by a compact historical core with a dense inner-city fabric. The central area contains numerous historic buildings dating from the second half of the 19th century and the early 20th century, including urban forms shaped by the once significant Jewish community that constituted an important part of Radomsko's pre-war population. Many of these buildings, particularly three-storey tenement houses with enclosed courtyards, are in poor technical condition and suffer from low energy efficiency and inadequate living standards (Kulesza, 2014). More than 40% of the Radomsko's building stock was constructed before World War II, which creates substantial challenges in terms of maintenance, renovation, and thermal retrofitting.

Housing conditions in Radomsko reflect both progress and persistent inequalities. The city has approximately 20,339 dwellings, a number that has increased by over 20% during the last three decades. Single-family housing dominates, particularly in peripheral districts, giving Radomsko a lower-density character than larger metropolitan cities. Almost 70% of dwellings are privately owned, while the municipal housing stock has gradually declined to 815 units by

the end of 2022. Although average housing conditions are improving, reflected in a high average usable floor area of around 70 m² per dwelling and widespread access to basic amenities, lower-income households often remain concentrated in older, energy-inefficient buildings with higher operating costs.

Green infrastructure is a critical but currently underrepresented component of the city's spatial structure (Fig. 1). Radomsko has two main recreational parks, Świętojański Park (3.22 ha) and Solidarności Park (4.21 ha), as well as 14 green squares covering a total of 6.6 ha. In addition, street greenery occupies approximately 22 ha, and housing estate green spaces about 26.85 ha. However, forests and wooded areas constitute only 3.2% of the city's cadastral area, and recreational parks and formal green spaces account for merely 0.8% of the total city area, compared to a regional average of 2.8%. This imbalance highlights both a deficit of accessible green spaces and a strong reliance on linear street greenery.

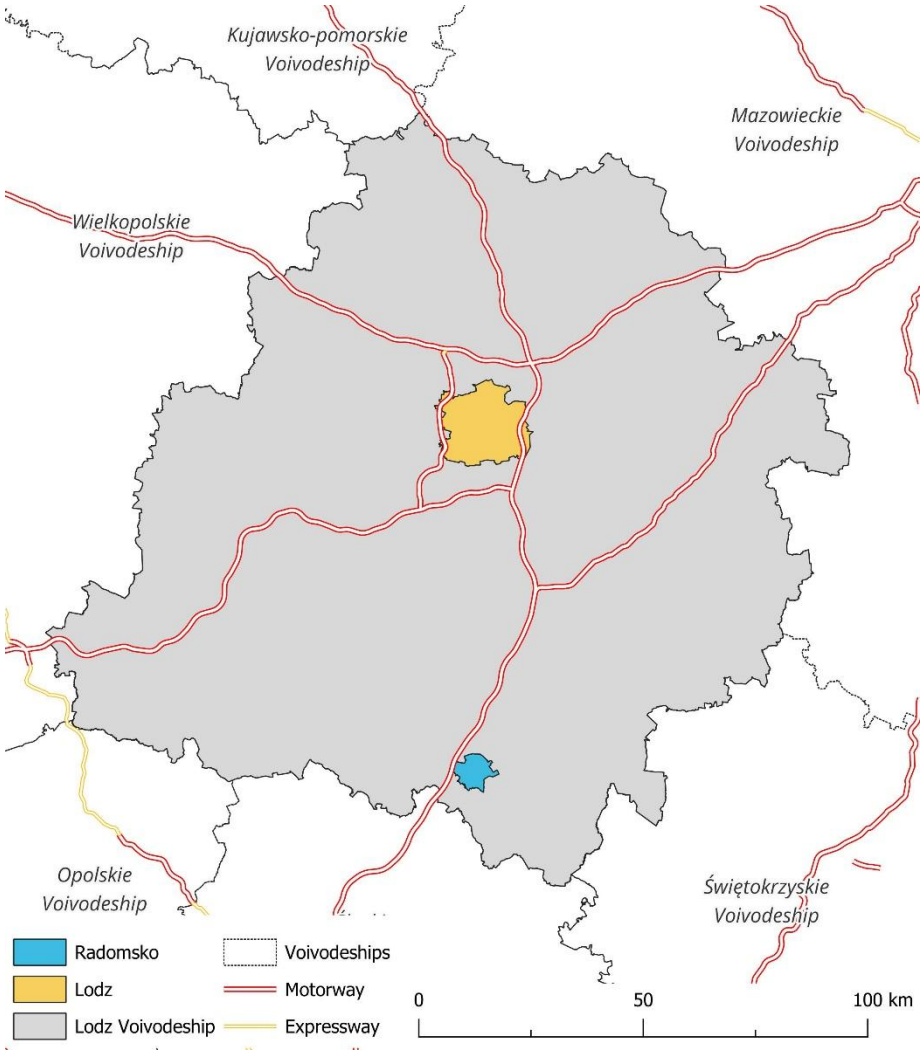

Figure 1: Radomsko location in the context of Lodz Voivodeship. Source: own elaboration

In response to these challenges, local government has adopted a proactive policy framework. *The Radomsko City Development Strategy until 2030* (2020) and the *Municipal Revitalization*

Program 2030+ (2024), explicitly frame housing, environmental quality, and green transition as interlinked priorities. The revitalization vision places strong emphasis on green and blue infrastructure, including the renaturalisation of the Radomka River, the introduction of greenery into dense urban areas, and the reduction of the dominance of buildings and transport infrastructure. These measures are intended to improve environmental quality, enhance climate resilience, and reclaim space for leisure and everyday use by residents.

Within this policy context, Radomsko presents a relevant setting for exploring **nature-based solutions**, **building retrofits**, and **selective densification**. The concentration of population and ageing housing stock in the central area creates opportunities for energy-efficient renovation combined with greening interventions at the building, block, and neighbourhood scales. At the same time, limited availability of residential land encourages infill development and densification within already urbanised areas, aligned with investments in public spaces, greenery, and social infrastructure. Together, these dynamics set the scene for integrated approaches that link housing policy, green transition, and urban regeneration (Report on the Condition of the City of Radomsko for 2024 [Raport o Stanie Miasta Radomska Za Rok 2024], 2025).

1.2 Green Transition Interventions in Radomsko

Over the past two decades, Radomsko has gradually embedded green transition objectives into its urban development and housing policies, responding to demographic decline, an ageing building stock, and environmental pressures. As a medium-sized post-industrial city, Radomsko illustrates both the tensions and synergies between housing affordability, densification, and nature-based solutions (NBS).

Since the early 2000s, municipal strategies have increasingly prioritised compact urban development and the reuse of already urbanised land. **Densification** through infill development has been promoted to limit urban sprawl, reduce infrastructure costs, and improve access to services. Recent housing projects, such as the planned estate on Narutowicza Street (approximately 240 apartments developed by the city and the Municipal Housing Association[1]) and the SIM Łódzkie[2] development on Starowiejska Street (over 100 affordable-rent apartments), exemplify this approach. These developments combine higher-density housing with basic green and social infrastructure, including playgrounds and barrier-free access, supporting housing security for young families, seniors, and people with disabilities. However, increased density also intensifies pressure on local green space and transport systems, highlighting the need for integrated green planning.

Parallel to housing densification, Radomsko has expanded its use of NBS and green infrastructure, particularly since the mid-2010s. *The Municipal Revitalization Program 2030+* (2024), marks a turning point by explicitly linking urban regeneration with climate neutrality, biodiversity enhancement, and improved quality of life. Within the revitalisation area, interventions include the creation of pocket parks, street greenery, and small-scale blue

[1] TBS - Social Housing Association (pl. *Towarzystwo Budownictwa Społecznego*)
[2] SIM Lodzkie - Social Housing Initiative (pl. *Społeczna Inicjatywa Mieszkaniowa*)

infrastructure, designed to counterbalance dense built form and mitigate heat, pollution, and noise. The planned renaturalisation of the Radomka River represents a strategic, long-term intervention aimed at flood risk reduction, ecological restoration, and the creation of accessible public space, although funding constraints have delayed full implementation.

Energy transition measures have been particularly visible in the housing sector. Since the 2000s, and with growing intensity after 2015, Radomsko has implemented large-scale **thermomodernisation** of public buildings, especially schools and educational complexes. These upgrades include insulation, window replacement, heating system modernisation, and the installation of photovoltaic panels. More recently, subsidy programmes have supported private households in adopting renewable energy technologies such as solar panels, energy storage systems, and heat pumps. These interventions have reduced energy costs and improved indoor comfort, disproportionately benefiting lower-income households living in inefficient buildings, thereby partially mitigating housing inequalities.

Figure 2: Natural and green areas in Radomsko. Source: own elaboration based on BDOT10k and OSM spatial data (accessed on 27-01-2026)

In Radomsko, green transition initiatives reveal the dual nature of contemporary urban transformation. Retrofitting and greening efforts in the inner city address social vulnerability and poor housing conditions, yet they are constrained by fragmented ownership structures, limited available space, and the technical condition of the historic building stock. In newer residential developments, green transition measures are easier to integrate at the design

stage; however, without explicit affordability safeguards, these projects risk excluding lower-income groups. Overall, Radomsko demonstrates that incremental, publicly led green transition interventions can improve housing quality and residential affordability, while simultaneously highlighting the need for careful coordination between densification processes and equitable access to green amenities across the city.

	Municipality-wide
Neighborhood characteristics (general social type, economic activities, density etc)	– Medium-sized city in central Poland – Compact, high-density historic centre (13.75% of area, ~45% of population) – Lower-density peripheral districts dominated by single-family housing – Post-industrial economic base (furniture manufacturing, metalworking, local services) – Ongoing depopulation, ageing population, youth outmigration – Limited share of formal green spaces; relatively high share of street greenery
Duration	– Early 2000s: spatial planning reforms and housing policy adjustments – Mid-2010s: acceleration of energy retrofits and renewable energy uptake – 2021: establishment of Social Housing Initiative - SIM Łódzkie – 2024: adoption of Municipal Revitalization Programme 2030+ – Current horizon: up to 2030
Funding	– Municipal budget – Municipal housing companies (TBS, SIM) – National and regional funds for energy efficiency, revitalisation – Potential EU structural and environmental funds – Private co-financing by developers (infrastructure contributions)
Actor constellation	– City of Radomsko (planning, housing, environment, revitalisation) – Municipal units (schools, public facilities) – Social Housing Association & Social Housing Initiative - TBS Radomsko and SIM Łódzkie – Private developers and investors – Residents, housing communities, private owners – National-level institutions
Aims and objectives	– Limit urban sprawl through infill and compact development – Improve quality of life in degraded and dense areas – Increase efficiency of technical and social infrastructure – Improve air quality and reduce energy consumption – Strengthen green and blue infrastructure – Support affordable and accessible housing for vulnerable groups
Specific physical measures	– Thermal modernisation of schools and public buildings – Support for household-level renewable energy and storage – New and revitalised green spaces – Street greening and green buffers along transport corridors

Accompanying housing policy/ regulatory measures	– Renovation and revitalisation of existing municipal housing stock – Affordable rental housing via TBS and SIM schemes – City Development Strategy 2030: planning-led housing development
Key social tensions or/and benefits between greening and housing	– Improved air quality and microclimate – Lower energy costs after retrofits – Better housing accessibility and security (TBS/SIM) – Enhanced public spaces and recreational opportunities – Uneven distribution of green benefits (new developments vs. historic centre) – Risk of rising housing costs after renovation without affordability safeguards

Table 1. Key data on Radomsko case study area. Source: own elaboration.

2 Methods

The qualitative component of the Radomsko case study was based primarily on semi-structured, in-depth interviews. A total of five interviews were conducted between September and October 2025. All interviews were held remotely using Microsoft Teams and carried out in Polish. Prior to participation, all interviewees provided informed consent, including permission for the use of interview material for research purposes. An overview of interviewee profiles is provided in Appendix 2.

The interview sample was designed to capture a broad range of perspectives relevant to housing policy, green transition, and urban development in Radomsko. Participants included academic expert, local activist, representatives of residents, municipal administration staff, and elected city councillors. Due to the scale of the city under study, some interviewees occupied more than one professional or social role relevant to the research. Their areas of expertise covered housing provision, nature-based solutions, building retrofitting, and processes of urban densification. Initial interviewees were identified through professional and institutional contacts established during the preparation and participation in the ReHousIn Policy Lab held in March 2025. This purposive sampling was subsequently complemented by a snowball approach, whereby additional respondents were recruited based on recommendations from earlier participants.

All interviews were audio-recorded via Microsoft Teams. Automated transcripts generated by the platform were carefully reviewed and checked against the original recordings to correct inaccuracies and ensure completeness. The verified transcripts were then translated into English using AI-assisted tools integrated in Microsoft Word and Writefull, followed by manual verification to preserve nuance and consistency of meaning. Qualitative coding and analysis were conducted using ATLAS.ti software. Coding was undertaken by a single researcher in accordance with a predefined coding framework aligned with the analytical focus of the Radomsko case study. The themes presented in the report therefore reflect both the conceptual architecture of the research design and empirically recurrent narratives across respondent groups. Additionally, NotebookLM was used independently as an auxiliary tool solely for the purposes of organising and navigating the interview transcripts; it did not generate codes, themes, or interpretations, nor did it influence the analytical decisions.

In addition to interviews, complementary qualitative methods were employed. Research walks were carried out to visit and document key locations in Radomsko identified during interviews, including green spaces, nature-based solution interventions, housing developments, and areas perceived as contested or problematic. These walks were accompanied by photographic documentation, which supported contextual interpretation and cross-referencing of interview material.

The qualitative analysis was further informed by desk-based research. This included a systematic review of municipal and district-level planning documents, strategic development plans, policy papers, technical reports, and relevant academic literature related to housing, urban regeneration, and environmental transition in Radomsko. These sources provided

essential contextual grounding and enabled triangulation of insights derived from interviews and field observations.

3 Civic Perceptions of Green Initiatives in Case Study Areas: Radomsko

3.1 Precedents and implementation

The development of housing in Radomsko reflects a transition from post-war cooperative housing models to contemporary, low-emission and socially oriented approaches introduced after 2016 and consolidated after 2021. Most of the existing housing stock was built between the 1960s and 1980s by local housing cooperatives and is characterised by relatively low building density, generous green spaces, and mature tree cover. Although technically outdated, this legacy has become an important reference point for current discussions on urban liveability and climate resilience.

> "We have a very large amount of green space because our housing cooperative began its developments in the 1960s, 1970s, and 1980s. This was a continuation of the planning trends of that period, when the approach to housing development was fundamentally different from today. There was no drive to maximise development on every square metre of land, as is often the case with contemporary private developers, where the primary focus is on maximising residential floor area. Instead, buildings were constructed at greater distances from one another, allowing for extensive open and green spaces". (*Representative of housing cooperative / councillor* - Interview R3A).

A first strategic shift occurred around 2016, when environmental considerations began to be systematically integrated into municipal investment policies. This change was largely driven by deteriorating air quality and increasing public awareness of climate-related risks. From that point onward, greenery and energy efficiency became standard components of public projects, creating favourable conditions for later implementation of nature-based solutions and large-scale modernisation programmes.

> „However, wherever it is possible, we make a deliberate effort to introduce greenery. Whenever conditions allow, this includes trees, and since President Jarosław Ferenc[3] took office in 2016, every project has incorporated some form of green infrastructure. Regardless of scale, whether trees or shrubs, greenery is consistently included, and it has become one of our key priorities". (*City official* - Interview R2A).

A key catalyst for housing initiatives was the growing affordability gap. A significant group of residents earned too much to qualify for municipal housing but lacked sufficient income or credit capacity to purchase homes on the private market. This structural problem directly influenced the introduction of Social Housing Initiatives (SIM Łódzkie) in 2021, which provided stable legal and financial frameworks for affordable rental housing. Municipal land contributions to SIM projects significantly reduced development costs and enabled their rapid rollout.

[3] Polish geographer and local government official, mayor of Radomsko since 2016.

Environmental pressure also played a decisive role. Severe air pollution and smog episodes triggered strong grassroots mobilisation, which in turn pushed local authorities to implement anti-smog programmes and accelerate thermal retrofitting. Rising energy prices further reinforced this trend, reframing energy efficiency and renewable energy systems as tools for reducing long-term operating costs for residents rather than purely environmental measures.

The primary actor mobilising residents was the Radomszczański Alarm Smogowy (RAS). RAS is a grassroots civic initiative formed by local residents in response to severe air pollution and recurring smog episodes. It initially operated as an informal community group but later evolved into a formally registered association. As a bottom-up civil society organisation, RAS played a key role in raising public awareness, organising community engagement, and exerting pressure on local authorities to adopt anti-smog programmes and accelerate thermal retrofitting measures.

The implementation initially focused on public buildings, particularly schools and kindergartens, which were fully modernised with new heating systems and photovoltaic installations. In cooperative housing stock, thermomodernisation progressed incrementally, constrained by limited funding mechanisms for partially upgraded buildings. Historic structures posed additional challenges, as conservation requirements and significantly higher costs often limited the scope of energy improvements.

„The Radomsko Smog Alert was established as a grassroots initiative by local residents. Initially, it was an informal group that emerged at a time when, in our small provincial town, people began to acknowledge that the problem of smog affected us as well, and not only large metropolitan areas“. (*Local activists* - Interview R4B).

Nature-based solutions were introduced through both pilot and regeneration projects. High-visibility interventions, such as green walls in the city centre, served a symbolic and educational function, while larger projects focused on restoring degraded areas and improving water retention through parks, rain gardens, and planned river renaturalisation. Urban infill complemented these efforts by promoting compact development in central areas, supporting the “15-minute city” concept, despite recurring social resistance.

„In the city, we also managed to implement two green walls. They are large, each is nearly 100 square metres and they have been in place for about three years now. We are still learning how to maintain them, as this is not straightforward, but they are functioning and in good condition. I hope they will continue to grow and develop further. So, this has also been introduced in the city centre“. (*City official* - Interview R2A).

Overall, housing-related projects in Radomsko were initiated in response to concrete social, environmental, and economic pressures. The pilot projects and the inherited spatial structures together shaped an incremental learning process, allowing the city to move toward more sustainable and affordable housing models.

3.2 Participation and governance (procedural)

The governance of housing development and the green transition in Radomsko is based on cooperation between the municipal government, special purpose housing companies, and state-level institutions. A key role is played by Social Housing Initiatives (SIM Łódzkie), in which Radomsko is a shareholder alongside other municipalities and the State Treasury, represented by the National Real Estate Resources (KZN). The municipality contributes land to the company, provides access infrastructure, and manages tenant recruitment. Larger housing investments are implemented through the Social Housing Association (TBS), acting on commission from the city. Since 2016, the city's executive leadership has prioritised environmental considerations, requiring the integration of green elements in all investment projects. Cooperation with the municipal housing cooperative (RSM) is described as functional, partly due to overlapping institutional roles at the local political level.

Participation practices in Radomsko have evolved from largely formal procedures toward more direct and dialogical forms of engagement. In the past, consultations were limited to legally required announcements published in the Public Information Bulletin (BIP), which attracted little public interest. More recently, a shift toward face-to-face meetings with residents of specific streets or neighbourhoods during the planning phase of infrastructure projects has become standard practice, allowing local knowledge to be incorporated before construction begins. Civil society organisations play an increasingly visible role in this process. The Radomsko Smog Alert (RAS) has emerged as a key actor, transitioning from an initially marginalised position to a recognised social partner consulted on the assumptions of municipal programmes, particularly in relation to air quality and the protection of mature trees during street renovations. However, the Civic Budget, operating for around a decade, is criticised for limited transparency, lack of systematic evaluation, and the dominance of school-based or event-orientated projects, which tend to displace smaller, neighbourhood-led initiatives.

„In the past, residents were not even informed about what their street would look like after renovation. The designer, the department head, and the mayor had their own vision, implemented it, and then were surprised that people were dissatisfied. That is not how it should work. Today, in the case of some streets, a significant change is visible. Meetings are organised, residents are informed, they can submit their comments, and they know what can and cannot be done. As a result, there is much less criticism once an investment is completed, when only limited changes are possible. In this respect, the situation has clearly improved, both in the city and at the county level". (*Local activists* - Interview R4B).

„This year, school-related projects account for around half of all submitted proposals [to the civic budget]. In addition, there is many picnics and events, as well as ideas such as organising celebrations for the anniversary of the granting of municipal rights. If the city considers such events important, they should be funded from the regular municipal budget rather than from the participatory budget. I suspect that this approach is motivated by an attempt to save resources in other parts of the budget. This practice contradicts the fundamental idea of the participatory budget". (*Local activists* - Interview R4B).

Local governance is strongly shaped by national policy and legal frameworks. Financing from institutions such as Polish Development Bank (BGK) and the National Recovery Plan (KPO) imposes strict energy-efficiency standards and compliance with the “Do No Significant Harm” (DNSH) principle. At the same time, SIM and TBS frameworks protect tenants through statutory rent caps, limiting sudden increases in housing costs. Climate policy obligations, including the regional anti-smog resolution, further structure local action by requiring the gradual elimination of non-compliant heating sources.

> “I believe that Radomsko’s housing policy is moving in the right direction. If the planned investments are successfully implemented, including the renovation of three tenement buildings and the construction of six municipal housing blocks and six blocks under the TBS system, within a few years we will be in a much better situation than at present. It should also be acknowledged that housing policy in Radomsko already appears more effective than in some large cities, such as Łódź, where the number of people on waiting lists reaches into the thousands and the housing stock includes many severely neglected tenement buildings requiring substantial investment“. (*Representative of housing cooperative / councillor* - Interview R3A).

The processes of civic inclusion and exclusion coexist within this landscape of governance. While SIM and TBS projects are designed to be barrier-free and accessible to seniors, people with disabilities, and families with children, access is constrained by the requirement for significant upfront financial participation. Rising housing prices and increased demand have intensified economic exclusion, particularly for groups that fall outside formal support systems, including single mothers and people experiencing homelessness. Local conflicts around densification, green space loss, and recreational noise illustrate persistent NIMBY dynamics and the contested nature of participatory governance in Radomsko.

3.3 (In)equity (distributional)

The green transformation in Radomsko is simultaneously bringing tangible material benefits and new lines of social conflict, revealing tensions related to the fairness of decision-making processes and redistribution. Perceived injustice in this context is largely relational, stemming from comparisons between different social groups, as well as between "current" and "new" residents of specific areas of the city. Concerns expressed by residents highlight the importance of green spaces and concern a decline in quality of life as a result of new investments increasing building density.

> “Residents feared the loss of this space, increased traffic, parking problems, and increased development around their properties.” (*Representative of public housing agency* - Interview R1A)

In the older housing stock, the continued presence of elderly residents in multi-storey tenement buildings without elevator access constitutes a significant barrier to everyday mobility, contributing to spatial and social exclusion.

„It seems to me that housing and the energy transition are issues that affect everyone: the youngest entrants to the housing market, the professionally active, and seniors. One need only consider the problem of the so-called ‘fourth floor prisoners.’" (*Researcher/expert* - Interview R5C)

At the same time, a representative of a local community group pointed to an observable shift in municipal practices in recent years. New housing developments are increasingly designed without architectural barriers, incorporating elevators and amenities for people with limited mobility and suggests a gradual institutional learning process and a growing awareness of inclusive design principles.

However, the lack of comprehensive modernisation of the existing housing stock continues to reinforce age-related inequalities in access to public space. These constraints become particularly pronounced during heatwaves, when the limited availability of greenery and shade in “revitalized” public spaces poses heightened risks to the health and well-being of older residents.

“There is still a lack of places where older people can comfortably take a break and sit. Even when benches are installed, shade, which is crucial, especially in summer, is often lacking.” (*Local activist* - Interview R4B)

Although some of these deficiencies may be mitigated over time as newly planted vegetation matures, they currently underscore the uneven social impacts of urban revitalization and green transition policies. In Radomsko, the authorities do not explicitly address the phenomenon of "green inequality" (e.g., increases in housing prices following greening), pointing to the dispersion of attractions across various parts of the city.

3.4 Political mobilization

Political and social mobilization in Radomsko manifests through both institutional action and grassroots civic initiatives. It primarily revolves around improving quality of life, environmental protection, and access to affordable housing. Over time, the city has witnessed a gradual shift from confrontational protest toward selective cooperation between activists and local authorities, alongside persistent neighborhood-level conflicts. A key grassroots actor is the Radomsko Smog Alert (RAS), which emerged as a bottom-up initiative responding to poor air quality. Through sustained anti-smog campaigns, RAS exerted pressure on municipal authorities, contributing to the launch of the “Radomsko without Smog” furnace replacement program. While early civic proposals were rejected on formal grounds, RAS is now recognized as a social partner and invited to co-consult subsequent policy editions. Environmental mobilization also includes protests against excessive tree cutting during street renovations. Activists have successfully forced designers to preserve mature trees. Beyond advocacy, RAS engages in direct action, organizing cyclical clean-up campaigns of the rivers, strengthening community involvement in local ecosystems. Participatory tools have also been used: a smog-monitoring drone was purchased through the participatory budget following RAS advocacy.

"As for *Radomsko without Smog*, the beginning was very inelegant. We submitted a legislative civic initiative, which was rejected, and in the meantime the mayor presented an almost identical proposal as his own. We were criticized for commas, as if that were a sufficient reason to dismiss a residents' initiative. This is absurd, because when citizens put forward an initiative, one cannot expect them to draft a legal act at the level of professional lawyers. What matters most, however, is that the program was ultimately implemented and residents began replacing their furnaces with more environmentally friendly ones". (*Local activist* - Interview R4B)

Housing-related mobilization is largely institutional but generates social responses. The municipality uses Social Housing Initiatives (SIM) and Social Housing Association (TBS) schemes to deliver rental housing for households in the "rent gap." These programs enjoy broad political support across administrative levels and are framed as anti-inequality instruments. Institutional actors mobilize demand through economic arguments, emphasizing high energy standards, thus mitigating energy poverty. Simultaneously, tenants increasingly mobilize around expectations of eventual ownership, challenging the original model of long-term social rental.

"(…) an increasing number of residents are asking whether they will be able to buy their apartments, given that they are repaying a loan through their rent. Of course, TBS housing is price-competitive compared to the secondary market, where apartments are very expensive. Fundamentally, however, this system is not oriented toward ownership but toward stable and secure rental housing". (*Representative of housing cooperative / councillor* - Interview R3A).

While the participatory budget has operated for a decade, activists argue it has degenerated, now dominated by school or event-based projects rather than neighbourhood infrastructure. Conversely, the city has introduced more effective consultation practices, replacing passive online procedures with open design-stage meetings, enabling earlier conflict resolution.

3.5 Socio-ecological impacts/benefits (positive)

Initiatives implemented in Radomsko are generating significant socio-ecological benefits, contributing, among other things, to improved housing affordability. Instruments implemented through the Social Housing Initiatives (SIM) and the Social Housing Association (TBS) play a particularly significant role, constituting a key element of the local response to the rising costs of living and the challenges of energy transition.

"In recent years, the city has embarked on a program to build SIM [Social Housing Initiatives] apartment blocks (...) All apartments [built by SIM] have their tenants (...) and we are currently embarking on another project. We already have a building permit for the first block. The first of 12, in fact, to be built near the city centre, and the Social Housing Association [TBS] will implement it on our behalf. These will include both municipal apartments and those built under the TBS system." (*City official* – Interview R2A)

Investments carried out by SIM Łódzkie are targeted at households whose income exceeds the thresholds for renting municipal housing, but at the same time, do not allow for sufficient creditworthiness to purchase an apartment on the commercial market. The units offered by

SIM are characterized by a high standard of finishing, including fully equipped bathrooms and finished floors, allowing immediate occupancy without the need for additional renovation costs. Rents in these properties are subject to statutory limits, increasing their affordability.

A SIM representative emphasized that the newly constructed buildings under the initiative are characterized by the use of environmentally friendly solutions. These buildings are highly energy-efficient, resulting in significantly lower heating and water heating costs than in older, poorly insulated buildings. This translates into real monthly savings for many households. Modern mechanical ventilation with heat recovery ensures a constant supply of fresh, filtered air, which is particularly important for allergy sufferers and families with children. Additionally, the buildings feature enhanced acoustic insulation, improving living comfort and reducing noise-related tensions among neighbours.

At the same time, city authorities are placing increasing emphasis on measures to improve stormwater retention, shape the local microclimate, and support sustainable mobility.

> "In the city centre, there was an investment in a parking lot, but it was actually connected to a park. We wanted to create a space that wasn't just a typical parking lot, but one that would also allow for some recreation. We've implemented very ecological solutions there, on such a large scale. For example, we have a rain garden designed to collect water from the area and store it. The vegetation growing there benefits from this. (…) We also managed to install two green walls in the city. Large ones, each almost 100 square meters long, have been in place for three years. We're also learning how to maintain them, because that's not easy either, but they're there, functioning, and doing well." (*City official* – Interview R2A)

The number of trees and shrubs planted along main streets is systematically increasing, which not only enhances the aesthetics of public spaces but also improves air quality, increases shade, and provides comfort for pedestrians and cyclists.

At the same time, the city is consistently implementing thermal modernization of public buildings. Nearly all schools and kindergartens in Radomsko have already been energy-efficiently modernized, including the installation of photovoltaic systems and heat pumps, which significantly reduces energy consumption and improves the comfort of building occupants.

3.6 Socio-ecological impacts/harms (negative)

The transformation processes in Radomsko are accompanied by significant socio-ecological challenges. Housing availability is limited primarily by complex financial and structural barriers. A significant limitation of the SIM system is the requirement for a down payment of 25–30% of the construction value, which effectively prevents low-income individuals with limited creditworthiness from accumulating the significant initial capital necessary to participate.

> "Those wishing to become tenants must contribute approximately 25% of the investment's construction value, with a maximum contribution of 30%. For example, if the cost of building a 1-square-meter turnkey apartment was PLN 10,000, the tenant would cover 25% of that

amount. It's worth noting that all our apartments are turnkey, which sets us apart from other developers". (*Representative of public housing agency* - Interview R1A)

Investments aimed at increasing urban density and introducing street-side tree plantings have elicited strong resident opposition, primarily due to perceived disruptions to their existing quality of life. The construction of new SIM apartment blocks on former green spaces, even if previously neglected, has generated local protests, as residents express concerns regarding the loss of recreational areas and increased traffic volumes.

"Residents of nearby housing buildings were dissatisfied that the last remaining green space nearby, where they could walk their dogs or simply relax, was being taken away. Furthermore, the increasing density of buildings in the city center is impacting people's daily lives." (*Local activists* - Interview R4B)

Residents living near areas transformed into nature-based recreational areas, such as Glinanki Park, have reported some nuisances. These complaints primarily concern noise generated during active use of these areas, including recreational and leisure activities. While such interventions positively impact the quality of the urban environment, biodiversity, and the availability of green infrastructure, they also introduce social tensions by altering the local soundscape and sense of tranquillity. This highlights a recurring challenge in urban planning: reconciling the ecological and recreational benefits of nature-based solutions with the everyday comfort and expectations of residents.

"We created a large complex among single-family homes and apartment buildings. We developed 5.5 hectares of land that had once been formerly quarried, excavating clay and brick. We revitalized the area. We created a beautiful complex with playgrounds and a sports field. And here, a conflict arose: residents living directly next to the square complained about the noise, and that's it." (*City official* - Interview R2A)

In summary, Radomsko is facing a paradox: new pro-ecological and social investments improve the overall quality of life, but at the same time they cause conflicts between neighbours and impose financial demands on tenants that low-income groups are unable to meet.

3.7 Tensions and power dynamics between stakeholders/actors

The dynamics of conflict between local authorities and various stakeholder groups in Radomsko are particularly evident in the context of activities related to spatial planning and urban investments. These conflicts most often erupt at the intersection of three key areas: investment processes, environmental protection policy, and housing policy. In practice, this means that tensions arise when the city's development needs, such as the implementation of new infrastructure projects or housing construction, collide with the expectations of residents.

"There are undoubtedly various organizations in the city that are interested in this and are active in these areas. We have the Radomsko Smog Alarm, for example, which is heavily involved in various solutions (...) So I think it will be possible to develop this further, and indeed, the group associated with the Smog Alarm is very active here, although sometimes too

impulsively. (...) So it's not conducive; it seems to arouse such animosity towards the other side, although, well, that shouldn't be the case, because we work together and for the common good, in a sense. Even those green walls you mentioned are not the solution cities are implementing." (*City officials* – Interview R2A)

City officials point to difficulties in their relationships with institutions and bodies participating in design processes as advisory and consultative bodies, which in practice can lead to suspensions or significant delays in investment processes. These problems stem from both formal procedural constraints, including complex construction and administrative law provisions, and informal aspects of cooperation, such as limited coordination of activities, differences in the priorities of individual entities, and a mismatch between decision-making timelines and the city's investment needs.

"We can spend a year processing certain conditions when signing a contract to remove conflicts in investments that sometimes couldn't be completed quickly. But suddenly, the network operator becomes a huge drag, both during the design phase and later during implementation." (*City officials* – Interview R2A)

"They're not doing anything about it and they're unwilling to support it. At one point, we were close to signing an agreement to co-finance the reconstruction of this river. However, after the change of government, this agreement unfortunately fell through. The issue is very important and pressing for us, so the city is taking action on its own, so to speak, using its own resources. We will seek support from external sources. However, this is also where the lack of cooperation is complete when it comes to *Polish Waters*[4]." (*City officials* – Interview R2A)

As a result, the city is experiencing a slowdown in the implementation of infrastructure and housing projects, underscoring the importance of developing more coherent mechanisms for inter-institutional cooperation and strategies to minimize the risk of procedural blockages in investment processes.

Conflicts within local communities stem from the clash of residents' differing needs and expectations regarding their living spaces, with local governments and property managers often forced to act as mediators. A typical example is the NIMBY effect, where declarative support for urban development gives way to opposition to investments in the immediate vicinity, perceived as a threat to green spaces, quality of life, parking availability, or traffic congestion. Within housing cooperatives, disputes also regularly arise between supporters of increasing the number of parking spaces and defenders of green spaces, with these conflicts sometimes involving even minor interventions, such as installing a bench, perceived as a potential source of noise. Tensions were similarly sparked by the revitalization of Glinianki Park, where the intensification of recreational functions and increased youth activity disturbed the existing sense of peace among local residents, leading to an escalation of the local conflict.

[4] State Water Holding "Polish Waters" is a central government agency in Poland responsible for the management and protection of water resources. It oversees water management planning, flood and drought risk management, maintenance of rivers and water infrastructure, issuing water permits, and implementing EU water policy (including the Water Framework Directive).

3.8 Innovative governance mechanisms

One of the most innovative governance mechanisms in Radomsko is the model of social housing. This mechanism relies on a complex financial assembly combining municipal land contributions, non-repayable state grants (from institutions such as the Polish Development Bank), and preferential loans. A key conflict emerges between environmental ambitions and housing affordability. Advanced technologies, such as building management systems, heat pumps, and mechanical ventilation, raise construction costs, forcing institutional actors to balance technological ambition against economic viability. If tenant participation costs increase too much, demand weakens and apartments risk remaining vacant. To counter this, authorities emphasize long-term operational savings, arguing that lower energy bills compensate for higher entry costs. However, this narrative clashes with the commercial housing market, where developers often build to lower energy standards, offering cheaper upfront prices. This discrepancy creates public confusion and fuels scepticism toward more expensive “social” housing investments.

> “For example, [SIM] are building to a reduced energy consumption standard, with an EP index of 52, and in two buildings we managed to get it down to 48. Meanwhile, developers are still building to a standard of 65. Society sees that "65 is possible," so the question arises: why build more expensively when someone else is building cheaper?”. (*Representative of public housing agency* - Interview R1A)

Implementation is further complicated by disputes between actors and regulatory barriers. Heritage conservation authorities frequently restrict the use of modern energy retrofits in historic buildings, making renovations significantly more expensive and technically less effective. Utility providers are described by local officials as major bottlenecks, with centralized decision-making outside Radomsko and lengthy procedures delaying construction processes. Competency gaps also exist, particularly a shortage of firms capable of properly installing and servicing advanced building management systems. Additionally, funding frameworks are poorly aligned with urban realities; paradoxically, it is often easier to obtain funding for expanding green areas than for improving existing ones, which is particularly problematic in dense city centres.

> „In the case of buildings listed in the heritage register, it must be remembered that all investments in such properties are very costly. Some years ago, around a decade ago, I carried out such calculations and found that the modernization of a listed building can cost up to several times more than in the case of an ordinary building. This results from the need to preserve numerous historical elements as well as from strict regulatory requirements“. (*Researcher/expert* - Interview R5C)

Narrative inconsistencies further deepen governance challenges. Although the social housing system is designed for stable rental, many residents perceive it as a pathway to ownership, generating political pressure to alter rules during project implementation.

3.9 Tourism and market pressures

The interviews contain no references to tourism or its influence on the housing market or broader development of Radomsko. Instead, Radomsko is characterized by disproportionately high housing prices despite its status as a medium-sized county-level city, with prices often compared to those in much larger urban centers such as Częstochowa. New developer-built apartments are widely perceived as unaffordable for average residents, reinforcing barriers to homeownership.

> "The housing system in Poland is largely dysfunctional. In this respect, Radomsko does not stand out in any particular way, neither positively nor negatively. Admittedly, we do not have apartments priced at twenty thousand per square meter here, but for Radomsko a price of around eight thousand per square meter in developer standard is already extremely high. And even then, eight thousand is among the cheaper offers. Therefore, I assess the situation as bad, although probably not worse than in the rest of the country". (*Local activists* - Interview R4B)
>
> "When it comes to developer-built apartments, one needs either substantial financial resources or a very high creditworthiness. In the case of SIM housing, however, one must lack mortgage creditworthiness while at the same time having some capital and fitting within specific income thresholds, meaning not earning too much, but also not too little to be able to maintain the apartment". (*Local activists* - Interview R4B)

The private development sector dominates housing provision, delivering most new dwellings through high-density, profit-oriented construction that contrasts with the more spacious cooperative estates from the socialist period. Market pressures have been intensified by external shocks, including the war in Ukraine, which tightened the rental market and pushed prices upward. These dynamics are compounded by broader processes of financialization and by nationwide housing support instruments that have been criticized for benefiting wealthier buyers. As a result, Radomsko exhibits a pronounced "rental gap," which social housing models such as SIM and TBS seek to address by offering regulated rents and greater stability.

> "For people who cannot afford a mortgage or the purchase of their own apartment, the situation is more difficult than it was just a few years ago. After the outbreak of the war in Ukraine, demand for rental housing increased and prices rose sharply". (*Local activists* - Interview R4B)

3.10 Gaps in perceptions between civic groups and public agencies

A significant gap exists in Radomsko between civic groups and public agencies regarding the credibility and purpose of pro-environmental initiatives. Public authorities tend to frame projects such as green walls as innovative interventions that improve urban aesthetics and demonstrate environmental commitment. In contrast, environmental activists, particularly those associated with grassroots movements, perceive these projects as costly symbolic gestures with minimal real impact on air quality, serving more as political marketing than effective ecological policy. This divergence undermines trust and fuels scepticism toward officially branded "green" actions.

„From a certain distance it [green wall] looks nice and, as a visual curiosity, it can be appealing. However, it provides neither shade nor any meaningful air purification. One could say that plants planted directly in the ground would probably cost a fraction of that amount and deliver a similar ecological effect. The difference is that such solutions require a different kind of space, and there would be nothing to ceremonially cut a ribbon for". (*Local activists* - Interview R4B)

Disputes also arise around the origins of policy successes. Civic actors argue that some flagship environmental programs originated from citizen-led legislative initiatives that were initially rejected on formal grounds, only to be later reintroduced by city leadership as official programs. From the activists' perspective, this reflects institutional appropriation of bottom-up ideas, while public agencies emphasize procedural correctness and governance continuity.

Perceptions of participation mechanisms further illustrate this divide. Municipal officials highlight improvements in consultation practices, particularly during the early design stages of infrastructure projects. Activists, however, criticize the participatory budget for drifting away from grassroots neighbourhood needs toward financing school-related projects or public events, thereby marginalizing every day, small-scale urban improvements. A representative of RAS actively participated in drafting the first participatory budget regulations and served on the initial consultative committee. However, activists now report feeling marginalised within these participation mechanisms. While municipal officials emphasise improvements in consultation procedures, activists argue that the participatory budget has shifted away from grassroots neighbourhood initiatives toward school-related projects and public events, thereby sidelining small-scale, everyday urban improvements proposed by individual residents.

"We try to make all the documentation that is produced publicly available. We organize meetings with residents of specific streets at the design stage, where we explain what we are doing and what we intend to do. If they have any comments at that point, and if it is possible, we incorporate them, although not everything can be taken into account. This dialogue with residents takes place primarily at the planning stage; later, during implementation, it is the contractor who carries out the works and must also listen to various remarks. We also try to sensitize contractors so that, where possible, they take these comments into account and consult them with us". (*City officials* – Interview R2A)

Beyond activism, housing cooperatives and NGOs play distinct roles that are also perceived differently. Civic actors view them as stewards of environmental and social capital, such as mature green spaces or ecological oversight, while public institutions often see them as constrained partners limited by regulatory and funding frameworks. Overall, these perception gaps reflect deeper tensions between symbolic governance and outcome-oriented activism, complicating cooperation and weakening the legitimacy of public action in the eyes of engaged citizens.

4 Critical Analysis: Radomsko

4.1 Uneven social impacts of green transition interventions

Green transition interventions in Radomsko have been implemented in a context marked by demographic decline, an ageing population, and a structurally heterogeneous housing stock. These interventions, spanning energy retrofits or NBS have not produced uniform social outcomes. While the city's green transition has not resulted in large-scale displacement or gentrification, it has nonetheless contributed to uneven social impacts and the reproduction of existing inequalities. New green transition initiatives have not so much created new inequalities as revealed and, in some cases, partially intensified already existing structural barriers.

Energy retrofitting and new-build social housing under SIM and TBS schemes have clearly improved housing quality, energy efficiency, and long-term affordability for a defined group of residents, primarily middle- and lower-middle-income households excluded from both municipal housing and the private ownership market. These interventions function as anti-inequality tools by reducing exposure to energy poverty and stabilising housing costs. However, access to these benefits is uneven. The requirement for a substantial upfront financial contribution (25–30% of construction costs) in SIM housing effectively excludes the lowest-income households, single-parent families, and people in unstable employment situations. In this sense, green transition policies risk producing a selective inclusion effect, where sustainability-linked housing improvements are accessible mainly to those with some initial capital.

In the existing housing stock, inequalities persist more sharply. Elderly residents living in pre-war tenements or post-war walk-up blocks without elevators face compounded disadvantages: poor energy performance, limited mobility, and insufficient access to shaded, climate-resilient public spaces. Retrofitting in these buildings is constrained by fragmented ownership, heritage protection, and high costs, meaning that green transition benefits are spatially and socially unevenly distributed.

The social impacts of green transition interventions in Radomsko are already tangible, though their longer-term distributive consequences are still unfolding. Residents directly experience reduced energy bills, improved thermal comfort, and better air quality because of thermomodernisation and renewable energy uptake. Similarly, new green spaces, parks, and revitalised recreational areas have enhanced everyday liveability, particularly in dense central districts. At the same time, interview data point to isolated tensions that could become more relevant in the future. In one instance, a densification project combined with greening triggered local opposition, mainly due to residents' concerns about the loss of informal green space, increased traffic, or noise. Although this protest was a single and limited incident that was subsequently managed, it illustrates how future rounds of compact development could give rise to similar perceptions of injustice if not carefully mediated.

Radomsko has not yet experienced strong "green gentrification" dynamics. This is partly due to its demographic trajectory (population decline rather than growth) and relatively weak

market pressure. Energy retrofitting has the most clearly positive and redistributive effects. By lowering energy consumption and operating costs, retrofits directly address energy poverty and improve housing affordability. However, benefits are skewed toward public buildings, cooperative housing, and new social housing, while historic tenements and privately owned older buildings lag behind due to regulatory and financial barriers.

NBS generate more ambiguous social outcomes. Some interventions, such as green walls, rain gardens, and revitalised parks, are widely perceived as improving aesthetics, microclimate, and recreational opportunities. Yet they also expose tensions between symbolic and functional greening. Civic actors question the cost-effectiveness and ecological impact of highly visible projects (e.g. green walls). On the other hand, densification is the most conflict-prone intervention type. While infill development supports compact city goals and housing supply, it frequently collides with residents' expectations shaped by the legacy of socialist-era estates with generous green spaces.

At the city scale, Radomsko's green transition is characterised by incrementalism and institutional learning rather than abrupt transformation. The municipality has gradually integrated environmental priorities into housing and planning policy, supported by the broad acceptance of social housing instruments. This has mitigated some of the disruptive effects often observed in larger, fast-growing cities. The key challenge for Radomsko is not preventing displacement, but ensuring that the most vulnerable groups, particularly low-income households and elderly residents in older buildings, are not left behind in a selectively "greened" city. Addressing these gaps requires stronger integration between retrofit programmes, inclusive public space design, and densification strategies that explicitly recognise green space as a social infrastructure, not merely an environmental add-on.

4.2 Key critical points defining housing justice and inequalities in Radomsko

Housing justice and inequalities in Radomsko are shaped by a layered interaction of historical legacies, national housing policies, local governance choices, and the selective impacts of the green transition. A first critical point concerns the long-term legacy of housing production under socialism and the post-socialist transition. Much of Radomsko's housing stock was constructed between the 1960s and 1980s by housing cooperatives, following planning principles that emphasised relatively low density and generous green spaces. While this legacy has become an important asset for urban liveability and climate resilience, it also produced a technically outdated stock that now requires substantial investment. In parallel, many buildings date back to the pre-war period, particularly in the inner city, where tenement housing is often energy-inefficient, inaccessible for older residents, and costly to modernise due to heritage protection requirements.

These historical layers constrain contemporary housing justice outcomes. Residents of older buildings face higher energy costs, poorer thermal comfort, and limited mobility, while retrofit opportunities remain uneven due to fragmented ownership and regulatory barriers. Housing

inequality in Radomsko is therefore not only income-based, but deeply path-dependent, embedded in the age and legal status of the housing stock.

Another critical point relates to the national housing system in Poland, which heavily favours owner-occupation and market-based provision. As in many medium-sized Polish cities, Radomsko exhibits a pronounced “rent gap”: a large group of households earn too much to qualify for municipal housing yet lack sufficient creditworthiness to purchase on the private market. This structural mismatch has intensified in recent years due to rising construction costs, high interest rates, and external shocks such as the war in Ukraine, which increased demand and prices in the rental sector.

Social Housing Initiatives (SIM) and the Social Housing Association (TBS) represent an important local response to this challenge. They improve housing justice by offering stable, regulated rental housing with high energy standards. However, access is conditioned by a significant upfront financial contribution, which excludes the lowest-income households. As a result, these schemes reduce inequality for some groups while simultaneously reproducing exclusion for others, highlighting a selective redistribution problem inherent in current housing policy frameworks.

Further critical point concerns the ambivalent role of the green transition in shaping housing justice. Energy retrofitting and renewable energy investments have delivered clear benefits: reduced energy bills, improved indoor comfort, and lower exposure to energy poverty. These outcomes are particularly important in a city with an ageing population and relatively low average incomes. In this respect, green transition measures function as social protection instruments. At the same time, green transition benefits are unevenly distributed. Retrofitting has progressed most rapidly in public buildings, schools, and new social housing, while historic tenements and privately owned older buildings lag behind. These tensions illustrate how environmental improvements can inadvertently create new lines of inequality if not aligned with everyday needs, particularly those of vulnerable groups.

Radomsko’s compact development strategy aims to limit sprawl and improve access to services, aligning with national and EU planning principles. Residents frequently interpret these interventions as a loss of environmental quality and an imposed burden, even when projects include new greenery or social infrastructure. Long-term residents of cooperative estates often compare new developments unfavourably with the spatial standards of the past, while newer residents are framed as beneficiaries of public investment.

While local governance practices have improved, moving from formalistic consultations toward earlier, face-to-face engagement, significant gaps remain. Civic actors criticise the participatory budget for favouring institutional projects over neighbourhood-scale improvements, while activists point to cases where citizen-led initiatives were initially rejected and later reintroduced by authorities. These experiences undermine trust and contribute to perceptions that housing and green transition policies are insufficiently co-produced.

To conclude, housing justice and inequalities in Radomsko are defined by a combination of historical housing legacies, national policy constraints, selective green transition benefits, and contested urban densification. However, inequality persists in more subtle forms, particularly

affecting low-income households, elderly residents, and those living in the oldest parts of the housing stock. The critical challenge ahead is to better align green transition goals with inclusive housing policy, ensuring that sustainability does not become another axis along which existing inequalities are reproduced.

4.3 Concluding reflections

Radomsko aligns most closely with a medium-sized, post-industrial city experiencing demographic decline. In this setting, green transition interventions are incremental, largely publicly led, and strongly shaped by inherited housing structures. Unlike dynamic growth cities where greening may trigger rapid gentrification, Radomsko exhibits slow and uneven transformation, with selective improvements rather than systemic restructuring. The dominant types of intervention, energy retrofitting of public buildings, social rental housing (SIM/TBS), and small-scale nature-based solutions, produce differentiated outcomes depending on tenure, building age, and location. Overall, the green transition in Radomsko tends to mitigate existing vulnerabilities rather than generate new market-driven housing inequalities.

The primary stressor shaping housing inequalities in Radomsko is housing affordability, particularly rents and entry costs, rather than tourism, which plays virtually no role in the local housing market. Instead, stress emerges from rising construction costs, energy prices, and a national housing system oriented toward ownership. External shocks, such as the war in Ukraine, intensified rental demand and price pressure, deepening the “rent gap” between municipal housing and private ownership. Green transition measures act both as a buffer (through reduced energy costs) and as a stress multiplier (through higher upfront costs in energy-efficient housing), reinforcing selective access rather than universal relief.

Neighbourhood-level inequalities are strongly shaped by historical development paths. Cooperative housing estates from the socialist period benefit from generous green spaces and relatively good environmental conditions but face technical obsolescence. Inner-city tenement areas concentrate multiple disadvantages: ageing populations, poor energy performance, accessibility barriers, and limited high-quality green space. Newer developments, often built under SIM or by private developers, offer higher standards and energy efficiency but at the cost of higher financial thresholds. These contrasts generate relational perceptions of injustice between “old” and “new” residents and reinforce spatially embedded inequalities rooted in the city’s historical growth patterns.

Housing and green transition dynamics in Radomsko involve a hybrid constellation of actors. The municipality plays a central coordinating role, working through municipal housing companies (TBS) and Social Housing Initiatives (SIM). National institutions shape outcomes indirectly through funding rules, energy standards, and housing policy frameworks. Civil society actors, particularly environmental activists and housing cooperative representatives, act as watchdogs and agenda-setters, influencing air quality policy and green space protection.

Green transition measures, such as thermomodernisation, renewable energy installations, and new SIM/TBS developments, generate clear distributive benefits in the form of lower energy consumption, reduced operating costs, and improved living standards. However, access to

these benefits is socially differentiated. For example, entry requirements in SIM housing (including a 25–30% upfront contribution) structurally exclude the lowest-income households, even though the scheme targets affordability. Similarly, energy retrofits have progressed most effectively in public buildings and newly constructed social housing, whereas residents of pre-war tenements and fragmented private ownership structures face regulatory and financial barriers that delay modernization. Nature-based solutions and densification projects also produce uneven spatial effects: while some neighbourhoods gain improved green amenities and microclimatic comfort, others experience perceived loss of informal green space or increased density without proportionate compensatory benefits. As a result, green investments in Radomsko function simultaneously as instruments of social protection (through energy cost reduction and regulated rents).

5 Bibliography

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Appendix 1 – Glossary

Abbreviations

BGK	Polish Development Bank (pl. *Bank Gospodarstwa Krajowego*)
BIP	Bulletin of Public Information (pl. *Biuletyn Informacji Publicznej*)
DNSH	"Do No Significant Harm" principle
EU	European Union
KPO	National Recovery Plan (pl. *Krajowy Plan Odbudowy*)
KZN	National Real Estate Resources (pl. *Krajowy Zasób Nieruchomości*)
NBS	Nature-Based Solutions
NGO	Non-Governmental Organization
NIMBY	"Not In My Back Yard" phenomenon
PLN	Polish Złoty
RAS	Radomsko Smog Alert (p. *Radomszczański Alarm Smogowy*)
RSM	Radomsko Housing Cooperative (pl. *Radomszczańska Spółdzielnia Mieszkaniowa*)
SIM	Social Housing Initiative (pl. *Społeczna Inicjatywa Mieszkaniowa*)
TBS	Social Housing Association (pl. *Towarzystwo Budownictwa Społecznego*)

Terms and Concepts

National Real Estate Resources	National Real Estate Resources (KZN) is a state-owned institution in Poland responsible for managing public land and property assets for the purpose of supporting housing policy, particularly the development of affordable and social housing.
Radomsko Housing Cooperative:	Radomsko Housing Cooperative (RSM) refers to a member-based, non-profit housing organisation operating at the local level in Radomsko. It is responsible for the development, management, and maintenance of multi-family residential buildings owned collectively by its members.
Radomsko Smog Alert	Radomsko Smog Alert (RAS) is a local grassroots civil society organisation focused on air quality protection and environmental health in the city of Radomsko. It emerged as a bottom-up initiative of

	residents responding to growing awareness that air pollution and smog are significant problems not only in large metropolitan areas but also in smaller towns.
Social Housing Association:	A non-profit or limited-profit housing entity (TBS) in Poland responsible for the development and management of rental housing with regulated rents, targeted primarily at middle- and lower-income households that do not qualify for municipal housing but cannot afford market prices. TBS operates within a public policy framework, often in cooperation with local governments, and plays a role in improving housing affordability and stability.
Social Housing Initiative:	A publicly supported housing scheme (SIM) in Poland introduced after 2021, aimed at increasing the supply of affordable rental housing with moderate rents. SIMs are typically established by municipalities, often in partnership with the state and other local actors, and target households that exceed municipal housing income thresholds but are excluded from the commercial housing market.
The Polish Development Bank:	A state development bank, responsible for financial support for the implementation of public policies, including housing policy, through the management of financial instruments and government programs.

Appendix 2 – Key interview data and transcripts

#	Position of Interviewee	Sector/company	Date of interview	Media
1	Representative of public housing agency	SIM Łódzkie	24.09.2025	MS Teams
2	City official	The City Office of Radosmko	25.09.2025	MS Teams
3	Representative of housing cooperative / councillor	Councillor of the Radomsko city council	6.10.2025	MS Teams
4	Local activists	Smog Alert	6.10.2025	MS Teams
5	Researcher/Expert	SGH Warsaw School of Economics	12.10.2025	MS Teams

Appendix 3 – Visuals

Glinianki Park in Radomsko, Source: https://radomsko.pl/images/aktualnosci/inwestycje/glinianki/3.jpg

Vertical garden in Radomsko Centere, Source: https://ogrodwertykalny.pl/ogrod-wertykalny-w-radomsku/