



THE CHALLENGES OF URBAN SPACE REVITALISATION. REVITALISATION OF A SELECTED AREA OF THE SŁONECZNE WZGÓRZE HOUSING ESTATE IN KIELCE BASED ON THE EXAMPLE OF A STUDENT PROJECT

WYZWANIA REWITALIZACYJNE PRZESTRZENI MIEJSKIEJ. REWITALIZACJA WYBRANEGO OBSZARU OSIEDLA SŁONECZNE WZGÓRZE W KIELCACH NA PRZYKŁADZIE PROJEKTU STUDENCKIEGO

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Abstract

The revitalisation of degraded areas is a multi-stage process that requires the involvement of the public, local authorities and often large financial resources. In Poland's large cities, the revitalisation process mainly focuses on revitalising deserted inner cities and the city's main representative spaces, while other smaller spaces, marginalised areas or spaces in housing estates remain forgotten. The problem of revitalisation is shaping up similarly in smaller urban centres. The paper shows a selected student revitalisation project, carried out as part of the Revitalisation of the Urbanised Environment course by students of Architecture at the Kielce University of Technology.

Keywords: revitalisation, space, Kielce, housing estate.

Streszczenie

Rewitalizacja obszarów zdegradowanych jest wielostopniowym procesem wymagającym zaangażowania społecznego, władz lokalnych oraz często dużych środków finansowych. W dużych miastach w Polsce proces rewitalizacji skupia się głównie na ożywieniu opustoszałych śródmieść i głównych przestrzeni reprezentacyjnych miasta, natomiast pozostałe mniejsze przestrzenie, obszary zmarginalizowane czy przestrzenie na osiedlach mieszkaniowych pozostają zapomniane. Podobnie problem rewitalizacji kształtuje się w mniejszych ośrodkach miejskich. W opracowaniu pokazano wybrany studencki projekt rewitalizacyjny, realizowany w ramach przedmiotu rewitalizacja środowiska zurbanizowanego przez studentów kierunku architektura Politechniki Świętokrzyskiej.

Słowa kluczowe: rewitalizacja, przestrzeń, Kielce, osiedle mieszkaniowe.

1. INTRODUCTION

Today, cities are the epicentre of social, economic and cultural life. However, as the urban population

continues to grow, cities face increasing challenges in space management. In the context of urbanisation and changing social and economic needs, there is an

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increasingly urgent need to revitalise urban spaces. The topic of this article was developed based on a student revitalisation project carried out as part of the Urban Environment Revitalisation course by students of Architecture at the Kielce University of Technology. The project presents potential solutions that address the challenges of revitalising the space of a multi-family housing estate, aiming to create the "cities of tomorrow"—places that are designed to be responsive to the needs of residents, but also functional, aesthetically pleasing and environmentally friendly.

Revitalisation is the process of bringing degraded areas out of crisis, carried out in a comprehensive manner through integrated actions for the benefit of the local community, space and economy. These actions should be territorially concentrated, led by the revitalisation stakeholders on the basis of the municipal revitalisation programme.

Revitalisation is the process of improving the situation of degraded areas, which involves a wide range of activities aimed at bringing them back to life. This comprehensive process involves the local community and various aspects of social, economic and spatial life [1].

The word revitalisation literally means 'returning to life' and encompasses a variety of activities such as repairs, modernisations, improvements of infrastructure and transport, introduction of new functions as well as economic and social support. In the context of degraded urban neighbourhoods, neighbourhood spaces or historic areas, revitalisation aims to restore their functional, artistic, cultural and historical values by adapting them to modern needs, eliminating elements that do not fit their character or restoring their original form on the basis of scientific research. It is also intended to respond to the contemporary needs of residents, making them able to live, spend their leisure time or work in a better way.

The first stage important for determining on which area the activities within the revitalisation process will be undertaken is the designation of the degraded area. A degraded area is one that is disadvantaged by the concentration of a number of unfavourable social phenomena, such as unemployment, poverty, crime, poor quality of education or lack of social capital. In addition, it can be characterised by low social and cultural engagement. The second stage of urban revitalisation planning is the designation of the revitalisation area. A revitalisation area is an area covering all or part of a degraded area, characterised by a particular concentration of negative phenomena,

in which, due to its significance for local development, the municipality intends to carry out revitalisation [1].

The revitalisation of degraded areas is a multi-stage process that requires the involvement of the public, local authorities and often large financial resources. In large cities in Poland, the revitalisation process mainly focuses on revitalising deserted inner cities and the city's main representative spaces, while other smaller spaces, marginalised areas or spaces in housing estates remain forgotten and deteriorate over time. The problem of revitalisation is shaping up similarly in smaller urban centres [2].

There are good examples of revitalization designs. For almost 10 years this subject had been actively developed at the Faculty of Civil Engineering and Architecture at the Kielce University of Technology. Every year students successfully perform such designs and studies concerning development of urban areas, as well revitalisation of historic towns in the Kielce region [2-5].

The student project responds to the problems of forgotten parts of the city of Kielce and focuses on revitalising an area of a housing estate that the community no longer uses due to neglect.

"Housing estates are the place of residence of 1/5 of the population of Polish cities, which translates to 7-8 million citizens. Those created in the post-war period, but also those from the 1970s and 1980s are subject to an ageing process associated with increasing adverse spatial and functional changes" [6]. Due to a major problem with the neglect of smaller areas of cities or settlement areas, the 'large-panel housing estates', some growing families are looking for their place outside the city, at the expense of inferior access to services and infrastructure. For many years, housing estates have ceased to cope with meeting the original needs of their residents, and many of their functions have been displaced by the increasing demand for space for cars and neglect of the maintenance of the space between buildings. For this reason, older estates are associated with lots of paved areas with old infrastructure and playground equipment, or as being overgrown with untidy and neglected vegetation.

The tidying up of the traffic space is not sufficient to restore the usability of the estate space. A full revitalisation is needed, including public spaces, semi-private spaces or the aesthetic appearance of the housing itself. It is important to rationally use the available spaces, ensure their proper functionality and with all this restore the balance between vehicular, cycling and pedestrian traffic. An important aspect is

the restoration of the pedestrianised city model, where the most important places can be reached on foot.

In a residential environment, it is important to provide a variety of opportunities for interaction and different forms of human contact. It is therefore important to provide a variety of spaces, enabling a wealth of experiences for residents [7]. The enrichment of housing estate spaces with features such as playgrounds, structured green areas, small-scale retail, leisure and entertainment venues will increase the attractiveness of housing on the estate in the eyes of residents.

The key to success in the revitalisation aspect of a housing estate space is to understand the needs of the community, involve them in the process of change and ensure that it is effective. People will be more willing to participate in each stage of revitalisation, knowing what they are aiming for, that they are doing it for themselves and their children, to seize the opportunity to improve their lives [8]. As the research¹ shows, the formation of neighbourhood ties is influenced by social participation in the shaping of the neighbourhood space, the joint establishment and furnishing of semi-private and social spaces. Therefore, carrying out revitalisation in residential environments on neglected estates is particularly important for residents, as they need spaces on two levels – private, as housing, and social, as social, integral spaces [9].

This allows the public to feel more comfortable in their surroundings and to express a desire to deepen neighbourly relations, and it is possible to observe a reduction in residents' desire to move, which has a positive impact on the future of the estate.

2. URBAN PLANNING OF POLISH HOUSING ESTATES FROM 1950-1980 – REVITALISATION OF THE “LARGE-PANEL” ESTATES.

“The shaping of housing complexes, as well as the entire structure of the city, faces various problems that are natural consequences of urbanisation” [10]. These were the problems faced by the Polish housing estates built in the so-called ‘large-panel’ technology, designed in the 1950s and 1980s. The extensive large-plate housing estates that began to spring up in European cities after the Second World War were a reaction to the housing shortage at the time. In addition, the mass migration of people from rural to urban areas in search of work has contributed to the housing shortage. To remedy this,

an innovative solution was proposed in the form of the construction of multi-storey residential buildings from prefabricated reinforced concrete. The standardisation of technology allowed for faster construction, which was extremely beneficial at the time due to the urgent need for more housing (Fig. 1). The first such building was constructed in 1957 in Warsaw’s Jelonki² district. Currently in Poland, the landscape of “large-panel” estates accompanies every major city and, according to statistics, an estimated one in three Poles lives in such an block of flats. These estates are characterised by architectural repetition, simple form, lack of detail and are often not accompanied by an interesting urban layout.

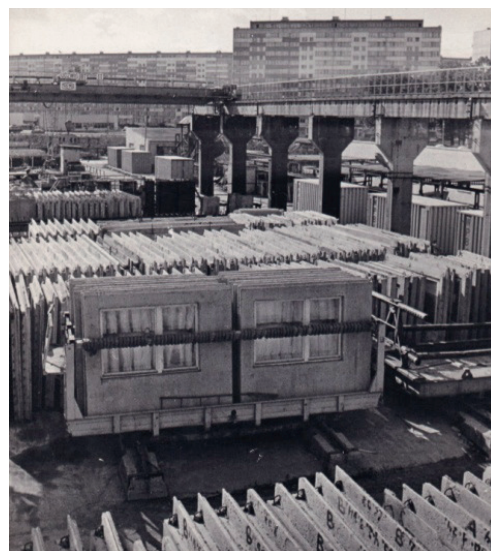
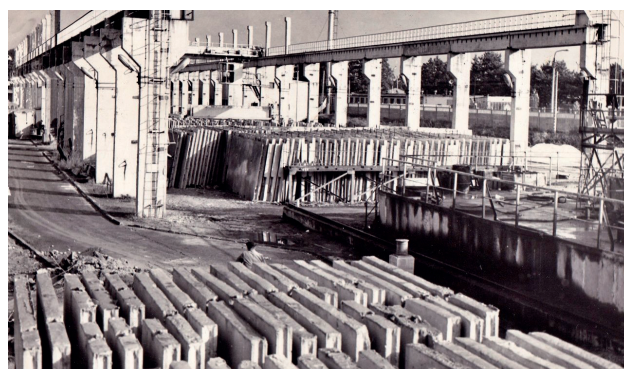


Fig. 1. Large panels factory in Popowice, 1984. Source: <https://gazetawroclawska.pl/tak-budowano-w-prl-bloki-z-wielkiej-plyty-mieszkamy-w-nich-do-dzis-postoja-jeszcze-kilka-dekad-archiwalne-zdjecia/ga/c9-17339259/zd/65319899>

Large-panel blocks of flats were initially designed to last 50 years. However, it is currently known that they

¹ Based on research conducted in 2007-2009 in 4 different housing estates, published by B. J. Gawryszewska in the article *Landscape of housing estates and building neighbourhood ties in revitalisation programmes*.

² <https://twojahistoria.pl/2018/02/13/bloki-z-wielkiej-plyty-najwazniejsze-daty-liczby-i-fakty/>.

will last much longer. Because of how many people still live in such estates in Poland, they are being modernised and revitalised, compared to Western Europe, where these buildings are being demolished. The main issue with large-panel housing estates is that they do not meet current housing standards and residents' expectations. Because of the prefabricated elements, the flats are not flexible in any way and it is difficult to change anything about them. In Poland, the modernisation of large-panel housing estates is limited to thermal efficiency upgrades and façade aesthetic improvements (colours). The buildings were initially designed in shades of grey and white, and over time the façade colours began to change to intense and vibrant colours. The buildings have lost their aesthetic value as the colours have faded over time, the façades have deteriorated through graffiti and staining and damage caused to the plasterwork, i.e. cracks, flaking. Currently, the urban space on the estate is being upgraded by replacing paving slabs on footpaths, repairing pavement defects in asphalt, replacing playground equipment, creating outdoor gyms or renovating sports fields.

The problem of a lack of parking spaces affects most Polish housing estates built decades ago. In the past, due to the economic conditions of the country and the limited financial possibilities of the residents, a relatively low ratio of parking spaces of around 0.5 per flat was considered sufficient. However, now that there are 1-2 vehicles per flat, the shortage of parking spaces is becoming a problem. As a result, drivers are often forced to park their cars on pavements or lawns, which impedes pedestrian traffic and negatively affects the appearance of the surrounding area [11]. This reduces the feeling of safety on the estate, increases pollution and worsens air quality. When revitalising estate spaces, this problem should be taken into account and underground car parks or parking spaces with vegetation should be designed.

Estates often lack public, semi-private and private spaces. The spaces between buildings are often neglected, overgrown with untidy, haphazard greenery. Unattractive playgrounds are appearing near the buildings, there is a lack of cycle paths and well-defined pedestrian routes. Shared spaces, if any, do not have an assigned manager, but also a recipient. There are no functional divisions in the spaces for particular groups: young people, parents

with children, seniors or people with disabilities. The result is the neglect of these areas because no one feels they belong.

The appearance of the façades of large-panel buildings is a consequence of the applied technology. The architecture of these residential buildings is monotonous, uniform, with no green roofs, terraces or other green forms, making the architecture unattractive. Some of these buildings have small flats with "dark" kitchens, which does not correspond to today's housing standards. The estates deviate from the principles of sustainability, which is extremely important in the design of contemporary spaces. The main problem of the unchanging situation of the large-panel estates is the lack of finances and the problems of ownership of co-operative resources. Co-operatives are focusing on improving the conditions of housing units and, consequently, the revitalisation of estate spaces is receding into the background [10].

Despite the many disadvantages of large-panel housing estates, there are also room for a few advantages. Their attractiveness is due to their convenient location, good access to the city centre thanks to extensive communication and a comprehensive accompanying infrastructure equipped with all basic services, including a school, kindergarten or clinic. At the time of their construction, there was a strong emphasis on creating space not only for housing, but also to provide residents with comprehensive service and recreational facilities on a daily basis. Large-panel estates also contain significant green areas.

In terms of urban design, the estates in question may be good examples worth following, but they are in need of modernisation and revitalisation. Three areas of action are highlighted, which should be pursued simultaneously in order for the modernisation of this type of development to be successful. The macro scale, which includes urban and architectural transformations of entire housing estates, the meso scale, which includes transformations concerning so-called neighbourhood spaces, and the micro scale – functional and spatial changes to individual flats³. Macro-scale measures should include: the introduction of modern playgrounds, sports areas, cycle paths and new leisure spaces/facilities. On a meso scale, the activities should include: reorganising existing urban interiors, courtyards, systematising greenery, introducing

³ Gronostajska B., *Modernisation of public spaces in large-panel housing estates/ Modernizacja przestrzeni publicznej w osiedlach mieszkalnych z wielkiej płyty*; Czasopismo techniczne 2-A/2010, zeszyt 5

various functions, small architecture, lighting or water elements. Interiors should blend coherently with their surroundings. Measures on the micro scale should include changes to the interiors of flats – rearranging dwellings where possible or changing their function from residential to commercial. The façades of the buildings should also be modernised.

Public participation is extremely important in reshaping the estate. Residents should be encouraged to look after the revitalised area together in order to strengthen their belonging to the community and neighbourhood. Home gardens for ground floor residents are a good way of doing this, making it a semi-private zone and making them feel more responsible for it. They can also act as a buffer between building windows and playgrounds or recreation areas. The estate space should be a zone where social relationships are built and provide a place for all ages. There should be playgrounds, recreation areas with small architecture, but also rest areas for the elderly. In summary, it is intended to be a green space that divides from a large monotonous area into smaller areas targeted for a particular age group [11].

3. HISTORY OF THE SŁONECZNE WZGÓRZE HOUSING ESTATE IN KIELCE

The Słoneczne Wzgórze housing estate is located in the north-eastern part of Kielce (Fig. 2), in the vicinity of the Adolf Dygasiński Park. It is situated on a hill at the foot of which lies Kielce, surrounded by the Świętokrzyskie Mountains range. Its construction began in the first half of the 1980s (Fig. 3). The development consists of two-storey and four-storey residential buildings as well as high-rise buildings of seven to eleven storeys and, like most housing estates of the period, was built using large-panel technology⁴.

The estate has a primary school, kindergarten, health centre and shopping pavilions. Right next door, in the area of the Świętokrzyskie estate, is the church of St. Jadwiga the Queen. The Słoneczne Wzgórze estate is bordered by housing estates: Świętokrzyskie (to the north), Uroczysko (to the west), Nowy Folwark (to the east) and Bocianek (to the south). The streets were named in 1997, but took effect in April 2001. The introduced street names, i.e.: Elizy Orzeszkowej, Florentyny Małskiej, Marii Krzyżanowskiej, Emilii Znojkiwiczowej, Mieczysławy

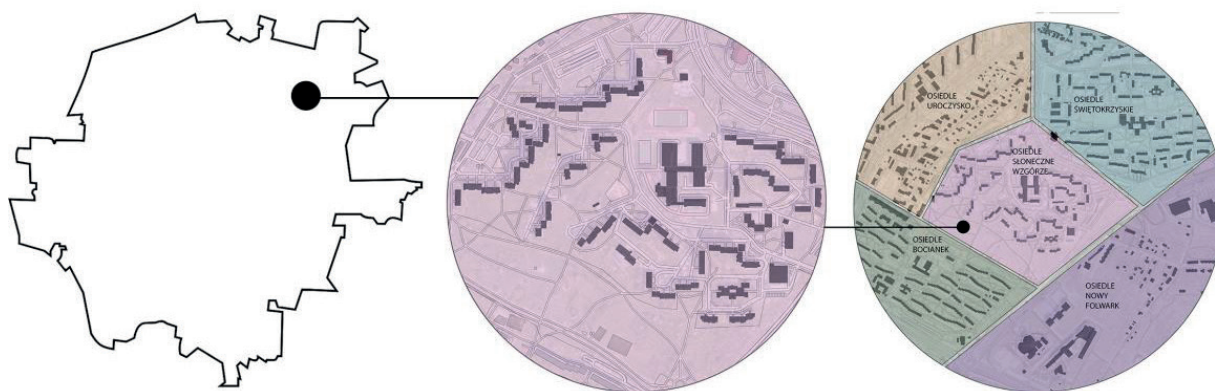


Fig. 2. Location of the Słoneczne Wzgórze estate within the city of Kielce and in relation to neighbouring estates [12]

Fig. 3. Słoneczne Wzgórze large-panel housing estate in Kielce, 1986. Source: <https://kielce.naszemiasto.pl/takie-bylo-kieleckie-osiedle-sloneczne-wzgorze-tak/ga/c1-9466395/zd/84991619>



⁴ <https://kielce.naszemiasto.pl/tak-40-lat-temu-wygladalo-sloneczne-wzgorze-w-kielcach/ar/c1-8977021>.

Ćwiklińskiej, Aleksandry Dobrowolskiej, Gabrieli Zapolskiej are still in use today. At the same time, the building numbers, assigned according to the order in which the blocks were built, were changed to ascending numbers for a specific street. For the first few years, old numbers could be seen painted on the buildings, as well as plaques with new numbers. As the façades of the buildings were upgraded, the old building numbers faded away⁵.

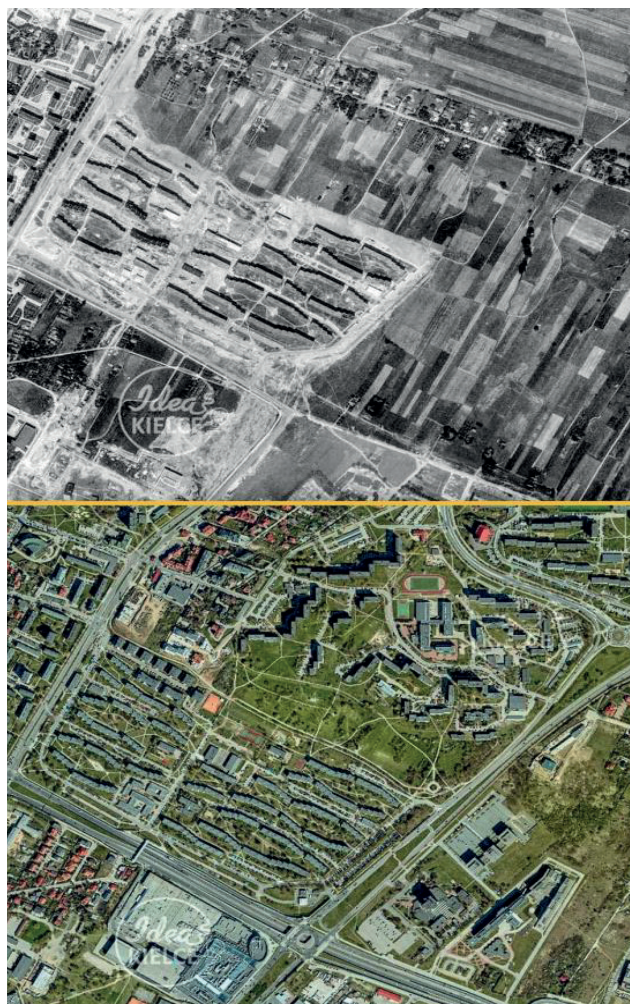


Fig. 4. Comparison of the 1977 and 2019 maps. Source: <https://www.facebook.com/groups/330329694123904/>

According to information provided by the Housing Association⁶, the Słoneczne Wzgórze estate is inhabited by almost 5,000 people, while the usable area of the flats is approximately 86,000 m².

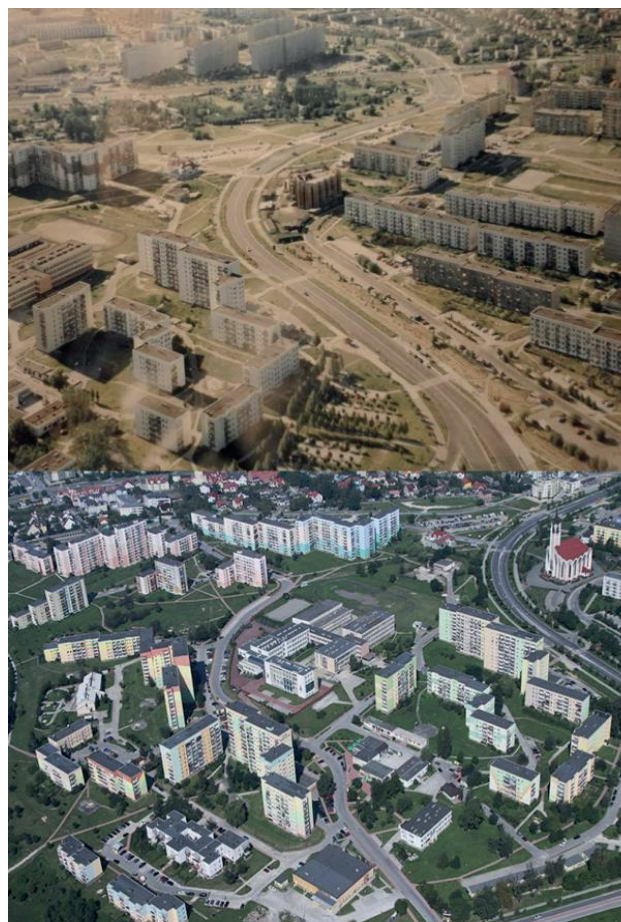


Fig. 5. Aerial view of the estate from 1990 i 2012. Source: <https://www.facebook.com/groups/330329694123904/>
<https://www.facebook.com/Slwzgz>

4. ANALYSIS OF THE CURRENT STATE – SELECTED AREA OF THE SŁONECZNE WZGÓRZE HOUSING ESTATE IN KIELCE

The first stage of work prior to developing a concept and design for the revitalisation of the selected area on the Słoneczne Wzgórze estate was for the students to carry out an analysis of the estate's existing condition – from the general to the specific. The area selected for revitalisation is the courtyard area between the blocks of flats on Marii Krzyżanowskiej Street, which is bordered to the north, east and west by large-panel multifamily residential buildings (5-8 storeys), and to the south by a single-storey commercial building. Revitalisation in the student project was carried out in two areas of action – meso and micro scale⁷. The revitalisation area includes the courtyard with the

⁵ https://pl.wikipedia.org/wiki/S%C5%82oneczne_Wzg%C3%B3rze

⁶ <https://www.sloneczne-wzgorze.pl/>

⁷ meso scale – neighbourhood spaces; micro scale – individual transformations involving functional and spatial changes to e.g. flats – Gronostajska B., *Modernisation of public... op. cit.*

surrounding residential buildings, the service building, car parks and traffic routes.

Three general analyses of the estate were carried out – building function, communication and green space. An analysis of the function of the development showed that the area surrounding the proposed redevelopment area is an estate of multi-family residential buildings with small services. There are 5 storey buildings to the north and east on the site and an 8 storey building to the west. A single-storey service building with a pizzeria, a grocery shop, a beautician and a hairdresser is located to the south. The estate also has several grocery shops, a vegetable shop, a medical clinic, a pharmacy and a centre for people with disabilities. The analysis showed that the area lacks a leisure area for seniors, which could be designed in the ground floor of one of the blocks of flats and part of the courtyard could be used to introduce such a function. A garden space for a restaurant (pizzeria) can also be proposed in the area. Other important services are available in the immediate vicinity.

The transport analysis showed that the neighbourhood is very well connected through easy access to public transport and public bikes, making it easy to access the city centre. A cycle path runs along Solidarności Avenue and Jaworskiego Street. There are several car parks located directly next to the residential buildings and there are also dedicated larger guarded car parks. A residential street runs around the revitalisation area. In this area, the existing car parks under the residential buildings should be tidied up and a dozen additional parking spaces should be designed on the south side.

The green analysis showed that the area around the Słoneczne Wzgórze estate is very green. Almost everywhere there is low greenery – grasses, medium greenery – shrubs and high greenery – trees, but unfortunately mostly untidy and neglected. The largest concentration of greenery stands out to the south of the plot – the location of the Adolf Dygasiński Park. There are several playgrounds on the Słoneczne Wzgórze estate, including one that is currently disused and unattractive to children in the study area. However, the one in the redevelopment phase will be removed and replaced with a new, larger, safer and more attractive one for children. The greenery on the plot should be systematised, some neglected plants should be cut down and replaced with new greenery that is visually attractive and tidy. There are no bodies of water in the area – it is worth introducing them into the project for their aesthetic and compositional qualities, as well as having a calming effect on people.

An analysis of archival photographs of the area and a photographic analysis of the existing state shows how the area has changed. The change in the colour scheme of the buildings, the space occupied by surrounding greenery and the number of cars and parking spaces is noticeable (Fig. 6, Fig. 7).



Fig. 6. Revitalisation area of 1986 and 2022. Source: <https://www.facebook.com/groups/330329694123904/>



Fig. 7. Revitalisation area from a bird's eye view of 1986 and 2023. Source: <https://www.facebook.com/groups/330329694123904/>

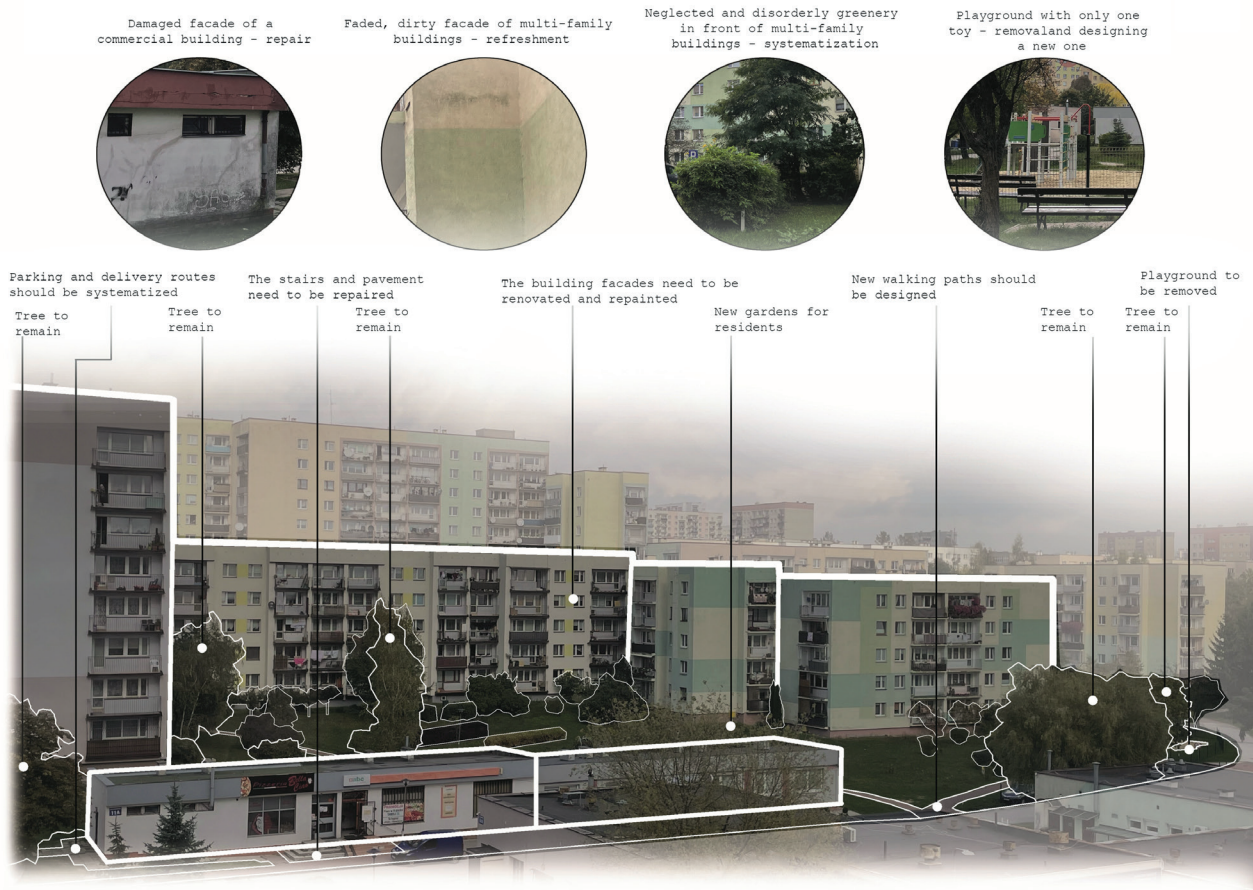


Fig. 8. Analysis of the revitalisation area [12]

The students also carried out a detailed analysis of the entire revitalisation area including the surrounding buildings. The façades of the buildings are in a poor state of repair – the colours have faded, damp patches and dirt are visible. The buildings have recently been thermally upgraded and such work is currently underway again and the colours are returning to neutrals (white and grey). The service building also has visible damage – cracks in the walls, plaster coming off and numerous stains. The stairs leading to the pizzeria and shop are dilapidated. There is a playground in the study area with only one piece of equipment, which is reluctantly used by children. There is a lot of neglected and haphazard greenery in the courtyard and around the blocks. Some of these are shrubs and others are larger trees. There are only 2 footpaths, a few benches and street lamps in this area.

The car parks are mostly made of openwork slabs, but vegetation does not grow there. The delivery route to the pizzeria is in poor repair. The paving has cavities and bulges in some areas. Grass and weeds are growing out of the kerbs and between the pavement blocks. The courtyard area has differences

in height – it slopes evenly downwards from the residential buildings.

In summary, the analyses showed that this area needs to be revitalised in order to make it attractive and usable again by local residents. Currently, there are no leisure activities for any age group available. Carrying out the revitalisation process in the area will help to improve the lives of the estate's residents, encourage them to tighten their neighbourhood ties and look after the new areas as if they were their own (Fig. 8).

5. SOCIAL STUDIES AND REVITALISATION PROGRAMME

An important element of the revitalisation process, through which the success of the process is guaranteed, is social research. Consultation with residents, the main stakeholders, aims to find out their opinions and to introduce solutions that satisfy the majority of residents. The research carried out will make it possible to propose a tailored revitalisation programme that meets the needs of the main users, i.e. the residents of the estate.

Social studies carried out on the Słoneczne Wzgórze estate has shown that the people living there are mainly families with children and senior

citizens. Understanding the needs of the community, involving them in the process of change and ensuring effectiveness is an extremely important issue in the revitalisation process. This area is the local "hub", so the residents should be able to spend their leisure time there. The aim of revitalising the area is to make it suitable for the needs of the residents – seniors, parents with children and young people – and to improve the condition of the buildings and pavement.

Discussions with residents revealed the need to locate a new and safe children's playground and recreation and meeting places for parents in the area. Interviews with the elderly residents revealed the need to provide a senior-focused area. Residents on the ground floor suggested developing spaces for gardens accessible directly from the flats, while a large group of respondents would request the design of more parking spaces and the replacement of the surface of existing spaces. The study also highlighted the development of a summer zone with tables for customers of local services – pizzeria.

Taking into account the needs of the residents and the results of the analyses carried out, the students developed a revitalisation programme for the Słoneczne Wzgórze estate space, in which they propose, among other things:

- decommissioning of the existing playground, which is not well-equipped, in order to design a new one with a sensory path and various safe equipment,
- design of flower/vegetable gardens accessible to residents directly from the flats located on the ground floor; separate garden area from the public area,
- designing an outdoor area with tables for the restaurant;
- tidying up of existing surface car parks, design of a dozen additional spaces in the southern part; replacement of paving with openwork slabs with space for vegetation;
- modernisation of the façade of residential buildings – repair of cracked plaster, thermal upgrades with change to neutral colours (white/grey);
- in the ground floor of the residential building (in the western part), designing a Senior Citizens' Club with access to the courtyard and a separate area for seniors in the courtyard space with gazebos and a meeting place;
- design of new greenery planting and walking paths with seating in the area;
- design of water reservoirs with fountains;
- design of recreation and relaxation areas for adults and young people with small architectural elements, i.e. benches, deckchairs, gazebos;
- cutting back neglected greenery and planting new shade vegetation in pots with seating; planting lower, tidy greenery near building entrances;
- maintaining and matching the function of the site to the tallest and oldest trees;
- design of low greenery (flowers) around the recreation areas for visual purposes;
- replacement of the pavement leading to the residential blocks with large concrete slabs;
- replacing pavement and repairing stairs near services;
- proposal for free-standing lighting and small waste bins.

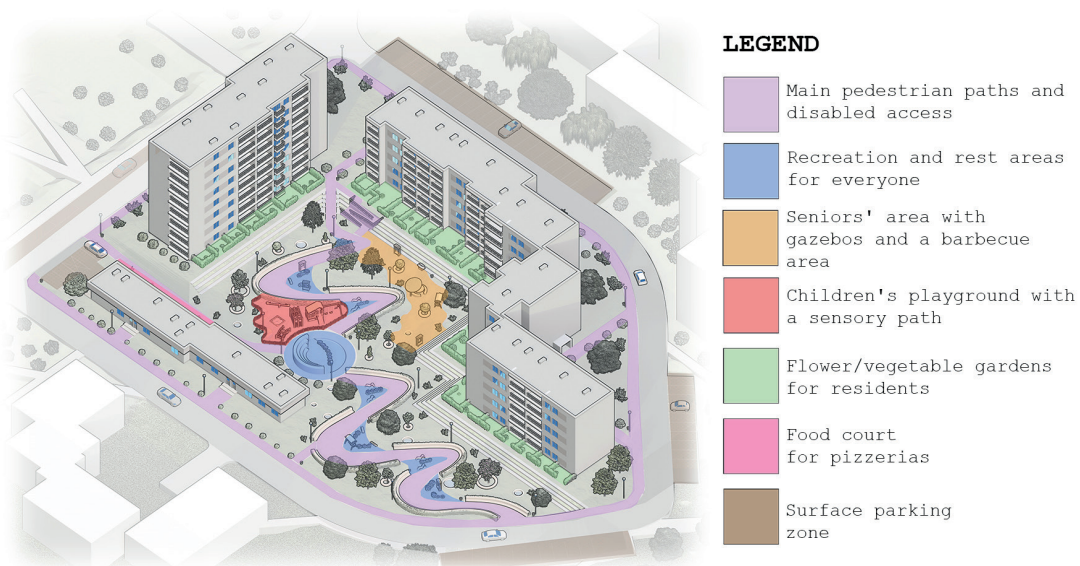


Fig. 9. Functional and spatial diagram [12]

The proposed revitalisation programme for the Słoneczne Wzgórze estate space is not only suitable for the residents, but also fits in perfectly with current architectural trends. The analysed needs of the community, taken into account in the developed programme (Fig. 9), focus on creating a space that is attractive and functional for all age groups. An important aspect of the programme is the involvement of the estate's residents in the planning process for change, ensuring that they are happy and feel part of where they live. Improving the condition of buildings and infrastructure, taking into account everyone's needs, is key to creating a welcoming and harmonious space. In addition, the inclusion of landscaping elements, water retention ponds and vegetation adds to the aesthetic and functional aspect of the revitalisation.

6. A PROPOSAL FOR THE REVITALISATION OF A SELECTED AREA OF THE SŁONECZNE WZGÓRZE HOUSING ESTATE IN KIELCE BASED ON THE EXAMPLE OF A STUDENT PROJECT

The students' proposal for the revitalisation of the estate space is in line with modern design trends and responds to the problems of the local community arising from analysis and research. Changes have been made on a meso scale by completely changing the courtyard area and associated elements, and on a micro scale by changing the function of one of the flats (Fig. 10).

All the tenets of the revitalisation programme have been introduced, while retaining the visually interesting ribbon urban layout to extend the walking

time. A green staircase has evened out the difference in height and so gardens have been designed for residents, which also act as a buffer zone. The large area is divided into smaller zones, each tailored for a specific age group. As a result, everyone can feel comfortable there. Systematically arranging the greenery will provide an easier opportunity to residents to look after it. The space has no barriers as a disabled exit has been designed and there are no height differences in the pavement level. A path with seating runs from north-west to south-east. A connection was also made next to the pizzeria. A circular leisure area with a pond and green steps connects the middle of the path (Fig. 11, Fig. 12). The main pedestrian routes are designed with concrete slabs, while the relaxation and senior-focused areas are distinguished by wooden pavement. The playground is located close to the refreshment area so that parents can see their children playing from it. Trees and gazebos have been proposed in the senior-focused area to provide shade. From the main path it is possible to step down from time to time onto the lawn, where seating under the trees has been designed. Water reservoirs serve an aesthetic function, cooling the air in summer, and water can also be used to water vegetation. All this is accompanied by flower beds with a variety of plant species. The surface parking spaces are designed with openwork slabs with space for vegetation. The biologically active area occupies more than 60%. The façades of the buildings during the revitalisation process have been refreshed and look more attractive. Such a proposed space could definitely improve the daily life of the residents of the Słoneczne Wzgórze estate.

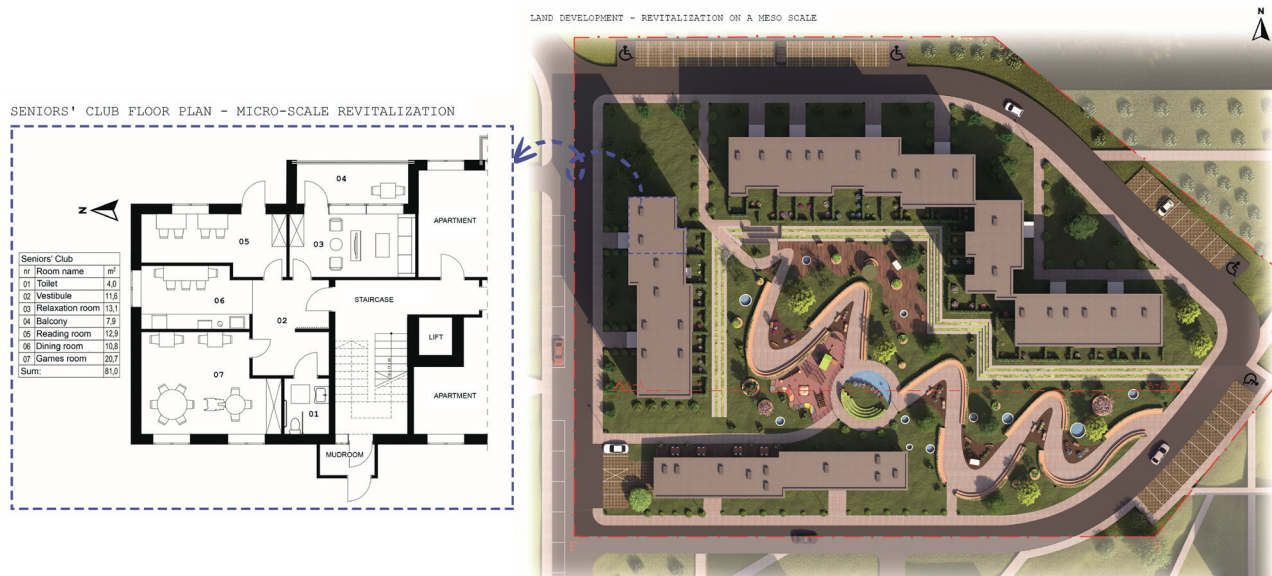


Fig. 10. Meso scale – land development and micro scale – Senior Citizens' Club [12]



Fig. 11. Photograph showing the current state, 2023, photo by author. Revitalisation project – visualisation [12]



Fig. 12. Photograph showing the current state, 2023, photo by author. Revitalisation project – visualisation [12]

7. SUMMARY AND CONCLUSIONS

Today, the issue of urban revitalisation is becoming increasingly important in the context of changing social, economic and environmental needs. Cities are the epicentre of social, economic and cultural life, which requires space to be properly managed and adapted to the needs of the inhabitants. The revitalisation project, carried out by architecture students at the Kielce University of Technology, is a valuable example of an initiative to improve the quality of life on the estate through sustainable, functional and aesthetically pleasing transformation of the estate space. The following findings show that the student project fitted into the general guidelines of urban revitalisation. Through a comprehensive approach to the revitalisation process, taking into account meso- and micro-scale aspects, this project represents a significant step towards improving the quality of life on the estate. The conclusions analyse the different areas of action, the proposed solutions and the advantages and challenges of the student revitalisation project, such as:

- Improving the quality of life for the residents: The student project to revitalise the estate fits in with the need to improve the quality of life for residents by adapting the space to their needs and expectations. Analyses carried out by the students

showed that existing large-panel housing estates are characterised by neglect, lack of attractive recreational places and inadequate landscaping.

- Public participation: An important element of the project is the involvement of the local community in the revitalisation process. By involving residents in shaping the space, the project can better respond to their needs, leading to a greater sense of belonging to the community and creating neighbourhood bonds.
- Diversity of space functions: The focus of the student project is to create a space that caters to the diverse needs of local residents, encompassing recreational spaces for children, leisure areas for adults and the elderly, as well as summer zones for customers of local services.
- Infrastructure modernisation: By upgrading infrastructure, including building façades, paving or car parks, the project aims not only to improve aesthetics, but also to increase functionality and convenience for residents.
- Sustainable development: In designing the new estate space, the students were guided by the principles of sustainability, taking into account the needs of current residents and future generations. The space will be more human and environmentally friendly through the use of modern urban and ecological solutions.

- Adaptation to modern standards: The student project aims to bring the existing estate space up to contemporary housing standards, eliminating the inconvenience of lack of parking spaces, inadequate recreational infrastructure or inadequate green space.
- Functional balance: The estate space of the project is intended to provide a balance between different functions, such as housing, services, recreational spaces and green areas, to contribute to the better functioning of the estate as a whole.
- Efficiency of measures: Through a comprehensive revitalisation programme, the project aims to achieve outcomes that will bring real benefits to residents, such as improved aesthetics, improved accessibility to recreational and service spaces and an increased sense of safety and social belonging.
- Support for different age groups: The project takes into account the needs of different age groups of

residents, from children to young people, adults to the elderly, to contribute to a more sustainable and versatile use of the estate space.

- Strengthening social ties: By creating a space that encourages interaction and joint activities between residents, the project aims to strengthen social ties, which contributes to building a more integrated and harmonious local community.

In conclusion, the student revitalisation project, makes a significant contribution to improving the quality of life on the Słoneczne Wzgórze estate. Through an appropriate approach to the revitalisation process, this project demonstrates that successful revitalisation requires close cooperation between different stakeholders. Any revitalisation project should be tailored to the needs of local residents, taking into account the results of the public consultation carried out, while not adversely affecting the environment.

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