

ACTION PLAN FOR UEA OF CHORZÓW, RUDA ŚLĄSKA AND ŚWIĘTOCHŁOWICE SUMMARY IN ENGLISH

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1. Introduction

1.1 Concept of the Action Plan in the context of SALUTE4CE project

The main idea of the project SALUTE4CE is the utilization of small urban areas for planting greenery. The project's main objective is to protect and develop natural resources by means of integrated environmental management of green and blue infrastructure, namely by planting native species of plants and plants resistant to climatic conditions, in selected functional urban areas (FUA). The project offers a potential solution for urban areas by means of urban environmental acupuncture (UEA). The aim of the application of the idea of urban acupuncture abroad is rapid and efficient revitalization of cities and land resulting in positive long-term changes in the quality of urban environment. The Action Plan is one of the outputs of the SALUTE4CE international project, describing the purpose of the project and presenting the philosophy of urban acupuncture, on which the Action Plan is based.

1.2 Objectives of the Action Plan

The aim of the Action Plan is to identify intervention sites and the specific tasks, activities and resources needed to implement the proposed urban green acupuncture activities within the urban functional area of Chorzów, Ruda Śląska and Świętochłowice. The Action Plan summarizes information on the current status of green areas in the functional area, describes the vision and objectives for the creation of green acupuncture sites, the procedure for initial site selection and assessment and selection of proposed sites and planning of individual activities. Identification of measures for future development and maintenance of the proposed activities. Part of the action plan is the description of the participation of stakeholders, including residents in the preparation and selection of the proposed activities.

In the functional urban area of Chorzów, Ruda Śląska and Świętochłowice, urban green acupuncture can be used for different purposes: providing greenery in existing public spaces, providing greenery in residential areas, creating new public spaces within abandoned and neglected areas, etc. Green acupuncture also offers the possibility of increasing the environmental, functional and aesthetic value of neglected places which have potential for improvement: areas in the central parts of districts, squares, inner courtyards of residential quarters, building facades, areas of service facilities e.g. schools, neglected strips of land along streets, pedestrian routes and cycle paths, in the vicinity of public transport stops etc.

2. Creation of an Action Plan for the City/FUA

2.1 Challenges (initial situation)

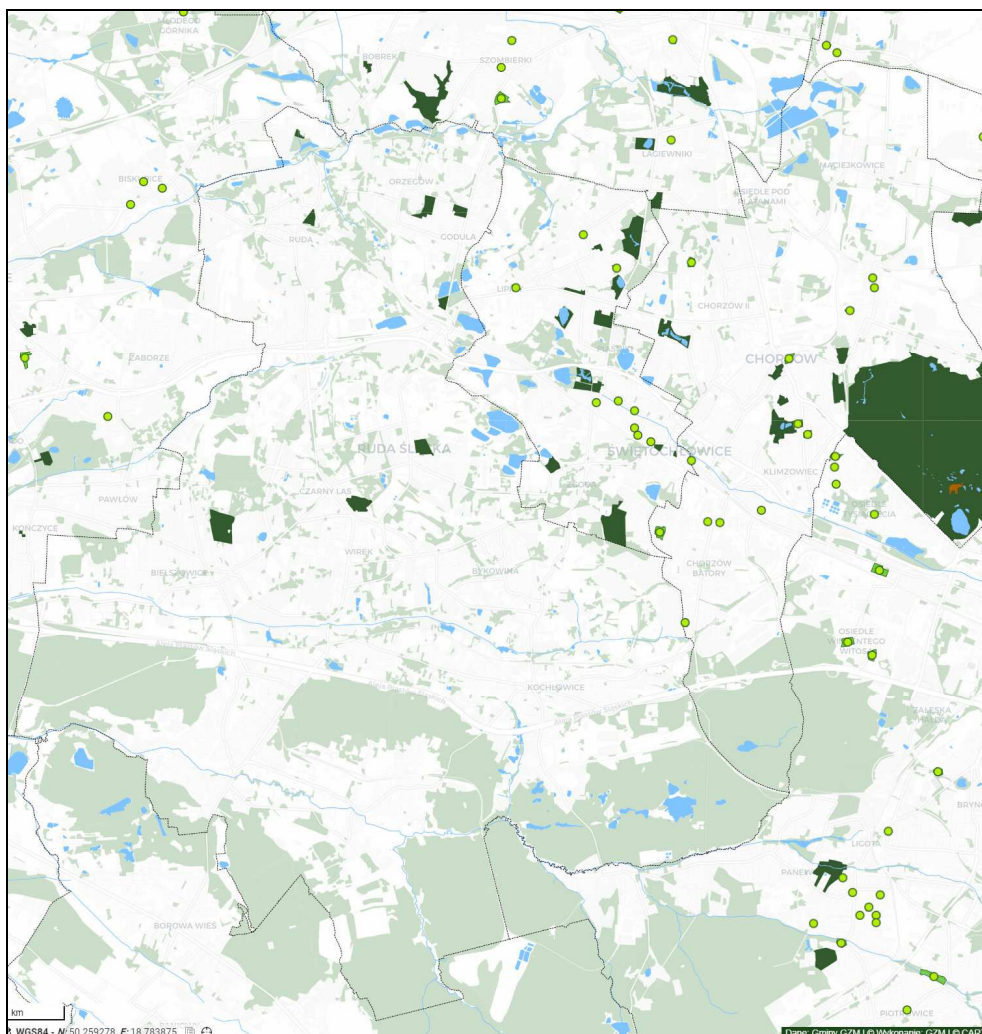
The Functional Urban Area of Chorzów, Ruda Śląska and Świętochłowice covers an area of 124.19 km². In Chorzów green areas constitute 22.4% of the city area, in Świętochłowice 13.7%, and in Ruda Śląska 13.8%. Such a large share of green areas in the city area positively influences its recreational potential and quality of life. The Functional Urban Area is set within the regional context of the Upper Silesian and Zagłębie Metropolis (Metropolis GZM), established on the basis of the Ordinance of the Council of Ministers in 2017. The Metropolis consists of 41 cities and communes with a total area of over 2500 sq km, where 2.3 million residents live. The area is a



dynamic economic centre, with over 240 thousand companies and enterprises, generating approx. 8 percent of our country's GDP (metropoliagzm.pl).

The three cities within the Functional Urban Area have risen and developed based on heavy industry, mainly coal mining and iron and non-ferrous metals metallurgy. The spatial structure of these cities is a mixture areas of different functions, defined primarily by the development and long-term functioning of industrial plants. Industrial and post-industrial sites and areas, such as heaps and dumps, are located in the vicinity of urban centres. Post-industrial sites are a characteristic environmental resource, valuable also due to the succession of vegetation. The share of anthropogenic sites reaches 55.71% of the total area of the FUA.

In terms of natural resources, contrary to common stereotypes related to the industrial past of several of the communes of the Metropolis, natural areas constitute in total more than ¼ of the entire area of the Metropolis, with forests accounting for approx. 25% and public green areas under the responsibility of self-governments - parks and green areas - accounting for approx. 1%. The area is exceptional due to the occurrence of numerous water reservoirs of anthropogenic origin, resulting from mining activity, as well as the presence of several areas covered by natural succession.



Green GZM - elements of green and blue infrastructure - zoom in to the FUA of Chorzów, Ruda Śląska and Świętochłowice, infogzm.metropoliagzm.pl/mapy/green/green_mapa.html (2021)



In **Chorzów**, the natural system consists of urban green areas and watercourses and reservoirs. According to the Chorzów Climate Change Adaptation Plan 2030, the functioning of biologically active areas in the city is connected with the degree of soil sealing, which is high as a result of intensive industrialisation processes and the accompanying urbanisation. The share of green areas in the area of the city of Chorzów amounts to 34.5%, which is about 1,108 ha (including the Provincial Park of Culture and Recreation with an area of about 630 ha, in which the area of green areas is 324 ha). The areas of high intensity residential development are characterised by high population density (e.g. Centrum district - 9,064.3 os/km², Chorzów II district - 4,677.4 os/km², Batory district 3,786.6 os/km², Chorzów Stary district 1,248.3 os/km²), and thus are vulnerable to negative climatic phenomena such as heat waves, urban heat island, heavy rainfall. The availability of green space varies considerably between neighbourhoods and parts of the city.

Ruda Śląska is a polycentric city consisting of separate districts with undeveloped areas in between. The natural system of Ruda Śląska consists of biologically active areas, forests, urban greenery and unmanaged areas, watercourses and water reservoirs. Areas of high natural value are mainly: rivers, river valleys, streams, ponds with adjacent areas (rushes), meadows, forests. Forest land covers a total area of approx. 1640 ha (approx. 20% of the city area) and is located in the southern part of the city, mainly in districts: Halemba and Kochłowice. There are 7 parks and 55 green areas in different parts of the city, with an area of about 72 ha. In addition, there are 26 family allotment gardens in the city with a total area of 188 ha. The functioning of biologically active areas in the city is related to the degree of land sealing. The decrease of biologically active areas is visible in the development areas in the centres of districts, in transport areas and housing estates. In recent years, Ruda Śląska has carried out numerous actions to improve the quality, accessibility and environmental value of green areas, including revitalisation of post-industrial areas and linking green areas within the idea of "Trakt Rudzki" and LUMAT project.

In **Świętochłowice**, the natural system has been significantly transformed by various human activities, mainly connected with the development of industry and urbanization. Plant communities are represented almost exclusively by anthropogenic systems, without high natural value. The city lacks forest areas, but there are forest-like communities and artificially created afforestations. In total, the groups of trees and bushes in the above-mentioned areas cover approx. 133 ha. The structure of communal green areas in Świętochłowice (total area of ca. 300 ha) includes: walking and recreation parks (5 sites, area ca. 46 ha); green areas (70 sites, area ca. 116 ha); residential green areas (area ca. 139 ha). Other urban greenery facilities include street greenery with groups of old trees, as well as formal and informal hedges.

2.2 Visions and aims of the City/FUA

In the context of considering the legitimacy of joint development of green acupuncture sites, the provisions of the Integrated Development Strategy of the Functional Area of Chorzów, Ruda Śląska and Świętochłowice until 2030 are important:

- Strategic goal 1: High level of quality of life of the inhabitants of the Functional Urban Area. Priority 1.1. Raising the standard of living in the Functional Urban Area



- Strategic goal 4: High level of development of social, technical and transport infrastructure of the Functional Urban Area. Priority - 4.3. Revitalisation of degraded areas of the Functional Urban Area
- Strategic goal 6: Increase in the quality of the environment in the area of the Functional Urban Area. Priority 6.1. Improving the condition of the environment in the FUA

The long-term vision of public green space for the functional urban area of Chorzów, Ruda Śląska and Świętochłowice in relation to the functions assigned to "green spots" (formulated at the SALUTE4CE project meeting in Erfurt in December 2019 and subsequently refined by project participants) was formulated as follows:

VISION FOR URBAN GREEN IN YOUR FUA IN 2050: Adaptation to climate change, NBS in urban policy, continuation of green infrastructure development

FUNCTION OF UEA SITES PLAY IN THE VISION: Integration of local communities, increasing of urban biodiversity, reduction of climate threats and improving of local urban landscape

THE PURPOSE OF THE ACTION PLAN CREATED IN SALUTE4CE: Awareness of eco-system services, cross-sector cooperation, various stakeholders, integrated environmental management by FUA authorities, input to local policies and strategies

2.3 Involvement of stakeholders and inhabitants

In the process of developing the action plan, stakeholder and resident representatives had the opportunity to participate in the formulation phase of the action plan, the initial selection of areas and potential green acupuncture sites, and the verification of sites through the methodology adopted by the project. Participatory activities included public consultations, discussions, meetings, workshops and research walks. As part of the initial phase of preparing the action plan - searching for potential locations of green acupuncture sites in the functional urban area of Chorzów, Ruda Śląska and Świętochłowice, a consultation point for residents was held in October 2020 at the market square in Chorzów, with representatives of the IETU, Chorzów City Hall and the Silesian Botanical Garden. In the phase of assessing the suitability of individual sites and the need for their adaptation to green acupuncture sites, research walks and workshops were conducted in individual cities of the functional area, attended by representatives of city halls, local institutions and organizations, IETU, Silesian Botanical Garden and the person drawing up the action plan.

2.4 Work program and schedule

- Phase 1: Preparatory phase (preliminary activities), including commissioning of the SALUTE4CE Action Plan - October 2020
- Phase 2: Analytical phase (collection and analysis of information). Collection and analysis of plans, documents (knowledge on framework conditions and local situation). Search for potential locations for green acupuncture sites in the urban functional area, including a consultation point for residents - October 2020 - December 2020
- Phase 3: Development phase (formulation of action plan). Selection of sites for UEA; outlining the plan of undertakings (intentions, objectives). Definition of actions; recommendations for the future; action plan for FUA January 2021 - August 2021
- Formulating and editing of the Action Plan text - September 2021



3. Urban Environmental Acupuncture sites in the FUA of Chorzów, Ruda Śląska and Świętochłowice

3.1 Selection of Urban Environmental Acupuncture UEA sites

3.1.1 Site analyses

The study area consists of three autonomous administrative units: Chorzów, Ruda Śląska and Świętochłowice, which in total cover an area of 124.19 km², representing 10.19% of the area of the Upper Silesian agglomeration understood as a functional urban area with metropolitan characteristics. The main element that links Chorzów, Ruda Śląska and Świętochłowice is the industrial history of the origin of these cities, and their development on the basis of heavy industry functions, mainly hard coal mining and metallurgy of iron, steel and non-ferrous metals. The second factor, no less important, is the central location within the metropolitan area as the analysed area borders with Katowice on its eastern border and, what is more, two main communication axes - A4 motorway and Drogowa Trasa Średnicowa (DTŚ) run parallel through it.

One of the main spatial features of the area is the mixture of residential and service areas (inner city buildings, housing estates and single family houses) with production or post-industrial areas. The urban-industrial character of the area is not changed even by a rather significant share of greenery, which is located within its borders and occupies almost 50% of the whole area.

Demography

There are approximately 294,000 inhabitants in the study area, with 106,000 inhabitants in Chorzów, 136,000 in Ruda Śląska and 49,000 in Świętochłowice (2020). The neighbouring cities of Chorzów, Ruda Śląska and Świętochłowice together have a population potential size of a large city. The total population of the three cities is less than 300 000, which makes the area of the three cities comparable to the capital of the voivodeship - Katowice.

Physical conditions

The share of anthropogenic areas in the total area is one of the most important morphological characteristics of the inner structure of urban areas. The anthropogenic areas include: residential buildings, industrial buildings, technical and communication infrastructure, wastelands and post-industrial areas, arranged greenery, recreational and sport areas. The share of all these areas is 55.71% of the total area, which means a very high degree of anthropogenic land transformation. For individual communes these values are: Chorzów- 71.33%, Ruda Śląska- 47.08% , Świętochłowice- 67.21%

The degree of land sealing belongs to indicators monitoring unfavourable changes connected with investment pressure on undeveloped areas - often of natural value. This indicator is also used to assess sub-urbanisation processes which occur in large urban agglomerations. In order to calculate it, available map resources presenting various forms of land use in the three cities were used, and the areas occupied by different forms of development and natural areas, i.e. agricultural land, semi-natural areas and wetlands, forests and water reservoirs, were balanced. The average sealing of the whole area in the three municipalities is 30.77%, with the best situation in Ruda Śląska (27.18%) and about 37% in Chorzów and Świętochłowice. A detailed analysis is presented in the table below.



Planning framework

The planning framework and the planning and legal context (policies, strategies or programmes) for the creation of "green spots" of individual cities of the functional urban area and for the functional urban area as a whole are contained in documents such as: National Strategy for Regional Development (KSRR), Development Strategy of Silesian Voivodeship "Silesia 2020+", Silesian Voivodeship Spatial Development Plan 2020+, Strategy of Integrated Territorial Investments of the Central Subregion of the Silesian Voivodeship for 2014-2020, Development Strategy of Upper Silesian and Zagłębie Metropolis "Silesia" until 2025. local strategic documents include local development strategies for each city, Study of Conditions and Directions for Spatial Development for each city, Integrated Development Strategy of the Functional Area of Chorzów, Ruda Śląska and Świętochłowice till 2030 (IETU 2014), Integrated Revitalisation Programme of the Functional Area (ZPROF) of Chorzów, Ruda Śląska and Świętochłowice till 2030, as well as Climate Change Adaptation Plans elaborated for Chorzów and Ruda Śląska.

Organisational structure (competences) of departments related to green infrastructure

Chorzów: Municipal Services and Ecology Department of the Municipal Office

Ruda Śląska: The City Development Department of the Municipal Office

Świętochłowice: Ecology Office of the Municipal Office

Financial and economic circumstances

It is assumed that the basic possibility of financing undertakings in the field of municipal green acupuncture is financing from own resources, i.e. from the public budgets of the individual cities of the functional area involved. Four pilot projects were financed through the SALUTE4CE project. The ecological, environmental and social value of urban green acupuncture sites allow us to assume the potential possibility of financing tasks also from external sources, such as, for example: Regional: Regional Operational Programme of the Silesia Voivodeship; Provincial Fund for Environmental Protection and Water Management; National: National Fund for Environmental Protection and Water Management; Funds of Civic Initiatives Fund; EU: European Regional Development Fund; Technical Assistance Programme; Cohesion Fund; Fair Transition Fund.

In addition to the above sources of funding, it would be advisable to involve the residents and local institutions neighbouring with individual green acupuncture sites in the revitalisation process and to organise certain investments on the basis of inspiration, support and co-financing of bottom-up activities of the residents (this applies to semi-private space - backyards; and selected activities in public space - squares, greens, playgrounds, etc.).

3.1.2 Preselection and assessment of sites (using the WP T1 assessment matrix)

The preliminary site selection was carried out taking into account the key factor of considering the suggestions of stakeholders and residents of the functional area of Chorzów, Ruda Śląska and Świętochłowice. The selection was carried out on the basis of:

- The collected suggestions of the employees of the Municipal Offices of Chorzów, Ruda Śląska and Świętochłowice;
- Recognition of potential sites within the framework of analyses of the cities, strategic documents and materials and conclusions obtained from previously conducted projects concerning the public space of the functional area of Chorzów, Ruda Śląska and Świętochłowice;



- Collected suggestions from the group of participants of the workshop meetings on the selection and evaluation of places for the possibility of applying urban environmental acupuncture (directly and via online meetings and e-mail communication);
- Discussions in a "living laboratory" (face-to-face meetings, presentations, online meetings);
- Conclusions from research walks carried out in individual cities.

Collection of suggestions and information gathering took place between April and June 2021.

The evaluation of the sites was carried out on the basis of an initial analysis of exclusionary circumstances and admissibility criteria, followed by a scoring of necessity and suitability.

3.1.3 Specification of implementation sites

Chorzów

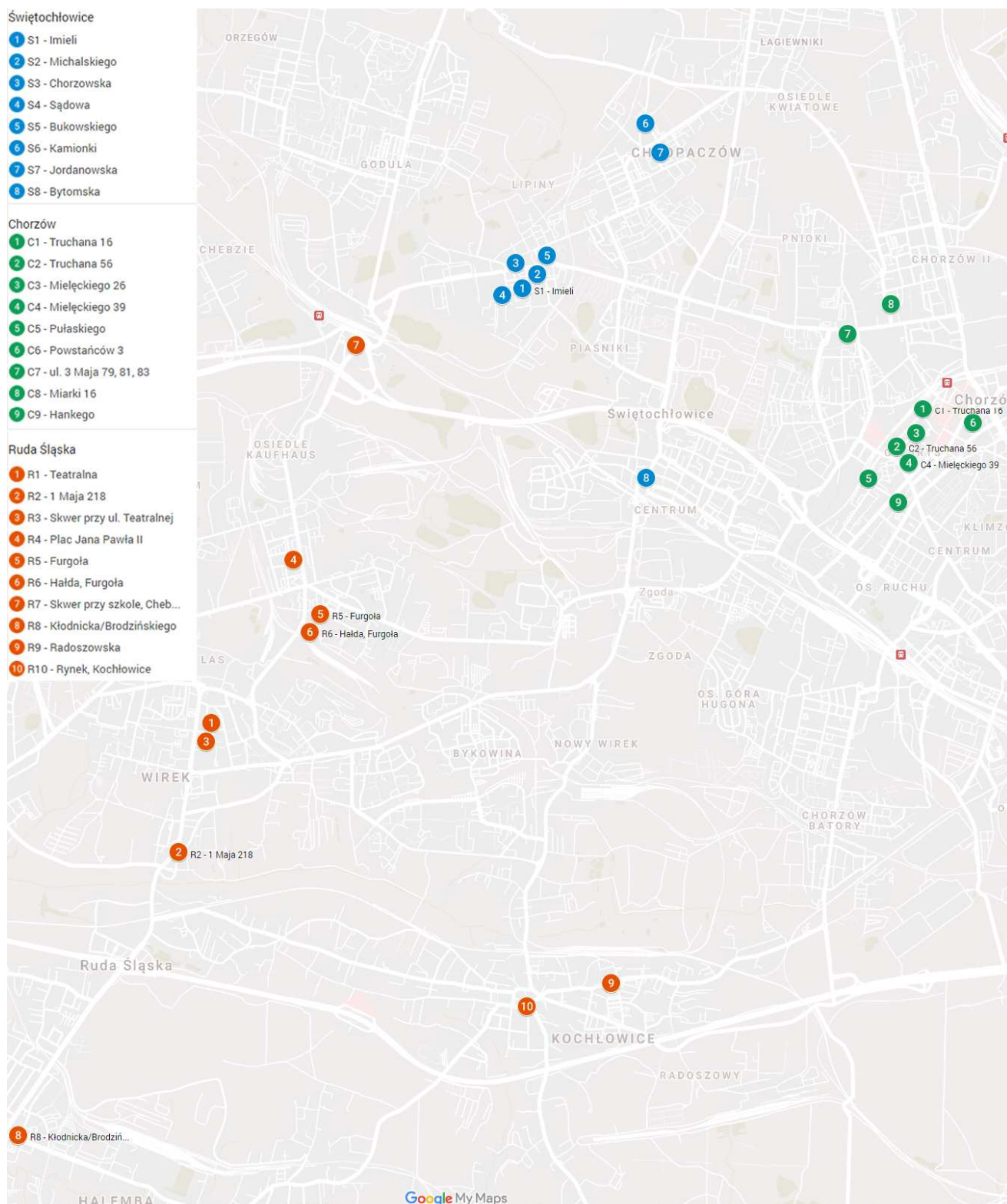
Out of 36 considered sites, 9 sites were selected for potential locations of green urban acupuncture. The selected sites are mainly located in the city centre district. These are mainly neglected yards and courtyards of multi-family housing developments, which are sealed (paved) and deprived of sufficient greenery. Two neglected squares with potential for significant improvement of environmental and utility values and one car park with potential for transformation into a green square were also selected.

Ruda Śląska

Out of 20 considered sites, 10 sites were selected for potential locations of green urban acupuncture. They are located in different districts, as the city structure in Ruda is polycentric and there are no large areas devoid of greenery, and greenery deficits were identified locally. The chosen places are mainly existing green areas (squares, greens), but they are neglected, insufficiently developed, lacking high greenery and not providing sufficient comfort to people staying there. Three sites were designated in the Wirek district; three sites in the Nowy Bytom district, including Jana Pawła II Square which is the main public space of the city, mostly sealed and in need of de-sealing and supplementing with greenery. The remaining sites are located in the districts of: Hebzkie, Halemba and Kochłowice.

Świętochłowice

Out of 11 considered sites, 8 sites were selected for potential locations of green urban acupuncture. The sites are located mainly in Lipiny district. These are courtyards inside quarters and one courtyard of a municipal housing building. One site was rejected due to existing, recently completed comprehensive development. In the district of Chropaczów two sites were indicated which both meet the required criteria. In the centre three sites were preliminarily identified, one of which meets the criteria for green urban acupuncture, and two were rejected at the pre-selection stage due to existing landscaping in the surrounding area or due to other plans.



Selected locations for the creation of green infrastructure sites, described in chapter 3.2.3.

Source: own elaboration using Google Maps

(<https://www.google.com/maps/d/u/0/edit?hl=pl&mid=1gTiKh1kQscF90mkN2ljgsR3wvk5o5l9x&ll=50.28055590724601%2C18.900795449999986&z=13>)



3.2 Planning single actions

3.2.1 Identification of measures and approaches

Measures and approaches suitable for the selected green acupuncture sites in the functional urban area of Chorzów, Ruda Śląska and Świętochłowice were identified according to the list of possible Nature-Based Solutions (ROoP), developed within the SALUTE4CE project methodology. For the green acupuncture sites recommendations were made for complementary development elements such as urban furniture for sitting (benches, seats, walls), street art, elements of artistic design, lighting, visual information, green bus stop, elements for children's play, botanical educational boards. In addition, for the green acupuncture sites, information such as:

- Potential beneficiaries and partners (e.g. residents, schools, institutions, public transport passengers, etc.);
- The institutions responsible for maintenance, which are generally the Municipal Offices, but potentially other institutions and organisations could also be partners;
- Financial resources for maintenance, which should generally be provided by the Municipality, but in some cases could potentially be shared by other institutions and organisations;
- Other remarks, e.g. regarding the neighbourhood or other studies, conceptual and design works already carried out for the areas in question (not realised within separate tasks).

3.2.2 Living lab discussion (public feedback)

In the SALUTE4CE project, representatives of the local community, stakeholders and different types of institutions and organisations were invited to participate in the discussions within the so-called living labs, which include public presentations, discussions, meetings, workshops. The living labs were organised on a local level together with project partners, citizens and relevant experts. The aim of the living labs was to gain knowledge from local stakeholders (inhabitants, civic associations, experts), to identify priorities and to obtain bottom-up knowledge about needs and opportunities, in line with the ideas of public participation.

As part of the initial phase of the preparation of the action plan - searching for potential locations of green acupuncture sites in the functional urban area of Chorzów, Ruda Śląska and Świętochłowice, a consultation point for residents was held in October 2020 at the market square in Chorzów, with representatives of the IETU, Chorzów City Hall and the Silesian Botanical Garden.

As part of the phase of analysing individual sites, assessing their usefulness and necessity, and formulating a list of possible Nature-Based Solutions (NBS), a series of research walks and workshop meetings were held in individual cities of the functional area, with representatives of city halls, the IETU, the Silesian Botanical Garden and representatives of local institutions and organisations dealing with issues of green areas and urban public space (Due to dynamically changing restrictions resulting from the pandemic situation, the meetings took different forms: outdoor meetings, online meetings or meetings in a café with sanitary requirements).

3.2.3 Specification of measures and approaches

For the selected green acupuncture spots the Action Plan in Polish version includes a table with the Specification of measures and approaches, a map of the spot, as well as aerial or site photos. In the cases where prior materials of conceptual design was available, in line with the goals of SALUTE4CE project, samples of such designs were included too. Presented below are 3 samples of specification of measures and approaches for particular sites.

Ruda Śląska R1 - Empty space on Teatralna street within existing service functions

Geodetic plots, ownership:	Part of the plot no. 2254/116, City of Ruda Śląska
Type of green space to be created:	Greened pedestrian street for recreation Greened recreational space
Recommended Nature Based Solutions (NBS):	Urban flower meadows Flowerbeds with native perennials Lawns Green paving Roadside trees Rain gardens with drainage into the ground Vegetated slope enhancement with green fences Green pergolas / arbours Green façades with climbing plants Green roofs / roof terraces Light green canopies
Recommended complementary development elements	Neighbourhood space (benches, tables) Street art
Potential beneficiaries and partners	Residents, local business owners
Institution responsible for maintenance:	Municipal Office
Financial resources for maintenance:	Municipal Office
Other comments:	Preliminary concept created by a students team led by the author; (2021) with acknowledgement of the city revitalization committee



Site map



Site photo (may 2021)

Chorzów C3 - Backyard, 26-28 Mielęckiego street

Geodetic plots, ownership:	Plot no. 1776/199, City of Chorzów
Type of green space to be created:	Green courtyard / yard
Recommended Nature Based Solutions (NBS):	Trees Green pergolas and arbours Flowerbeds with native perennials Green wall (climbing plants)
Recommended complementary development elements	Neighborhood space (benches, tables)
Potential beneficiaries and partners	Residents
Institution responsible for maintenance:	Municipal Office
Financial resources for maintenance:	Municipal Office
Other comments:	Preliminary concept from the Programme for the renovation of Chorzow's backyards until 2030 (2015)



Site map, geoportal.chorzow.eu



Site photo (may 2021)



Preliminary concept from the Programme for the renovation of Chorzow's backyards until 2030 (IRM 2015)

Świętochłowice - S4 - An area at 8 Sądowa street, behind a multi family house

Geodetic plots, ownership:	Part of the plot no. 1018/6, state owned, perpetual usufruct: commune of Świętochłowice
Type of green space to be created:	Green recreational space Greenery in the vicinity of office or industrial buildings
Recommended Nature Based Solutions (NBS):	Lawns Trees Rain gardens with drainage into the ground Green pergolas and arbours Flowerbeds with native perennials
Recommended complementary development elements	Neighborhood space (benches, tables) Playground or sports area
Potential beneficiaries and partners	Residents
Institution responsible for maintenance:	Municipal Office
Financial resources for maintenance:	Municipal Office
Other comments:	Maintaining the functionality of the car park on a section of the site



Location



Site photos (May 2021)



3.3 Recommendations

3.3.1 Management and maintenance planning

It is important that the urban green spaces (green areas and green infrastructure elements) included in the action plan are not only created, but also maintained for future use. Without proper care, green spaces, especially those in high demand, will show signs of wear and tear. It would be a shame for the well-thought-out design of each UEA site to deteriorate soon after implementation. We define the management of green acupuncture sites as the sum total of all activities necessary for the planning, establishment and maintenance of urban green spaces, aiming at the optimal use of available green space resources. Proposed basic principles for the management of green acupuncture sites are as follows:

- High quality planning and design - emphasis on the selection of planting sites, protection of native species, protection of vegetation and use of vegetation for energy conservation;
- Soil quality - a need to protect and improve soil through the use of organic fertilizers;
- Appropriate plant selection, determined by the minimum requirements for supplementary irrigation. It is recommended to promote biodiversity and purchase plants from local retailers;
- Selection of practical size of grass area due to irrigation and maintenance requirements;
- Effective irrigation - emphasis on natural irrigation. If technical elements are used, local water sources should be used (e.g. rainwater harvesting);
- Appropriate care and maintenance of greenery;
- Where possible, an appropriate share of on-site composting;
- Appropriate and correct choice of mowing intensity (depending on the plant species selected) and use of non-toxic pest control products;
- Planting trees that serve as protection from adverse weather conditions and provide protection from solar radiation and excessive heating of surfaces and buildings;
- Providing quality green acupuncture sites, through a conceptual approach combining the environmental values and functions offered by urban greenery to residents and enriching their local living environment.

The full text of the Action Plan includes detailed recommendations on issues such as:

- Recommendations for shaping green neighborhood spaces at residential developments / green courtyards and backyards
- Recommendations for shaping green public squares
- Recommendations on plant species
- Recommendations on financing
- Recommendations on public participation
- Recommendations on plant care

3.3.2 Controlling (Monitoring)

Monitoring the effects of measures for green acupuncture sites is crucial to determine whether the measures are delivering the intended benefits (i.e. the functional aspect) and to examine whether certain groups in society may benefit more or less from urban greenery (i.e. the social equity aspect). Information related to resident satisfaction, indicators or land use can be collected through paper surveys during site visits, e.g. inspections of pilot projects,



environmental indicators based on appropriate methods and standards according to project objectives. Monitoring may vary depending on the desired impact of the green acupuncture sites and be carried out by representatives of municipal offices of conservation specialists, biologists, arborists, naturalists or trained volunteers. After the implementation of the green infrastructure sites, indicators, expressed as numerically as possible, should be defined, which will provide important information to project leaders and decision makers. The areas of the city and municipalities involved in the project are the subject of monitoring. General sustainability indicators for monitoring:

- visual assessment of the vitality of green areas (trees, shrubs, flowerbeds, etc.),
- assessment of the visual aspect and functionality of urban furniture,
- assessment of the use of the site (site visit, use of elements,
- assessment of the safety of the site,
- assessment of the accessibility of the site for children, elderly and disabled people,
- biodiversity monitoring (presence of native species, elimination of invasive species).

The frequency of monitoring the current state of the site will be carried out in two stages:

- Stage 1 - completion of landscaping and handover to the community
- Stage 2 - completion of final maintenance by the municipality

3.3.3 Outlook and future prospects

The processes of creation of green acupuncture places initiated in the project should be implemented and continued, according to the guidelines and recommendations included in the Action Plan, and monitoring should contribute to drawing appropriate conclusions from the implementation, promoting the idea of green acupuncture and encouraging the development of further actions in line with this idea. The idea of using small areas of the city to create places of green acupuncture, initiated in the SALUTE4CE project, should be promoted, implemented and developed in the cities of the functional urban area of Chorzów, Ruda Śląska and Świętochłowice in the future in various activities aimed at adaptation and mitigation of climate change.

In the following years, the idea of creating green acupuncture places should be adapted through various other activities and references in strategic and operational documents of particular cities. In addition, the idea of green acupuncture sites could be promoted through urban spatial information systems, expanding them with thematic layers such as a detailed map of low green cover, a detailed map of urban trees, the possibility of showing the extent and access to green areas, etc.

The idea of creating green acupuncture sites for integrated enhancement of environmental and climatic values and functionality of sites, with positive effects on the local quality of life may be particularly important in the future for increasing environmental awareness of residents and education in pro-ecological behaviour and actions on a local scale, in the context of global and European challenges, and in line with European Union's guidelines for action in cities to adapt to and mitigate climate change.