

Sustainable urban green network concept for the city of Gdynia, Poland

Introduction

Why to undertake such an initiative? Main goals of the concept study

Sustainable urban green network concept for the city of Gdynia, Poland is a practical implementation of an ongoing own work on the PhD thesis entitled '*Role of urban green networks in sustainable development of contemporary urban areas*'. It provides knowledge transfer, which is a good, innovative practice in Polish planning.

Presented concept study, inspired by international case studies (including twin city of Gdynia – Kiel, Germany), defines the urban green network of the city in terms of space and public functions, although it is not a standard element of institutionalized spatial planning in Poland. This initiative was undertaken independently by the Municipality of Gdynia in order to respond to the current ecological and social challenges. Facing them, urban open space and greenery has to be planned and governed with the same care as the built space, and the way it is managed has to be redefined. Gdynia Green Network concept's main goal is to create a tool, that would provide a planning and organizational basis for further design and management, and comply standards of development for specific types of green areas in the city.

Defining standards for specific areas, phasing and flagship projects, study will serve as an operational masterplan. It's realization will influence positively the quality of city life and help to diminish social exclusion and divide, as well as to revitalize poor districts that need to be enriched in terms of public services.

Why is it so important?

Network solutions of the green areas based on the ecological core of the city stabilize urban structures, promote co-functioning of the built environment and green zones, and provide accessibility for the users. Accessibility of well-designed and maintained green areas within a walking distance from home, school or workplace is therefore one of the most important factors, that influence the quality of city life. And, quality of the urban environment depends on it's coherence and interconnectivity, which can be provided only by system solutions at a city scale. Actually, clear delimitation of an urban green network, protected by law regulations and well managed, can enhance the relationships between the natural landscape and urbanization. Green areas and built areas are equal components of and urban space and this is how they should be treated. This leads to the conclusion, that urban planning, design and management integrating human needs with the potential of the environment is absolutely necessary for sustainable development.

Brief characteristics of the site***Location***

Fig. 1. Location of Gdynia on the maps of Europe and Poland.

Sources:

<http://commons.wikimedia.org/wiki/File:EU-Poland.svg?uselang=pl>

<http://pl.wikipedia.org/wiki/Gdynia>

The city of Gdynia is 85 years old and contains about 250K people. It covers an area of 13 514 ha. It is the 12th largest city in terms of population in Poland, and 16th in terms of the

area, divided into 22 administrative districts. Together with Gdańsk and Sopot, it forms Tri-City. It is an important node for the whole Gdańsk Agglomeration (1M people), as well as one of the largest sea-ports on the Baltic coast. The average population density is 1 841 person per square km. Nowadays, high attention is given to attracting metropolitan functions and cultural and sports events as well as creating a business district and a technology park that will altogether help the city to build an European brand.

Gdynia exhibits a clear structure of the basic land use pattern established before WW2, although it is filled with a variety of post-war development patterns. It contains coherent historical urban fabric of the city center and the closest surrounding districts, large port and industrial areas, elements of social realism planning, new gated residential developments, and some garden type settlements. As the development potential of the city center is nearly exploited and socialist multifamily housing is not easily adaptable for changes, the city develops west, overtaking its rural land reserves.



Fig. 2. Gdynia waterfront and city center.

Photo: Sławomir Kitowski

In terms of geographical conditions, Gdynia is located on the border of two geographical units: Kaszuby Lakelands and Baltic coast. The geomorphology of the area was shaped by two processes: glacial accumulation and water erosion. The highest glacial hills in the city reach up to 205 m above the sea level. The steep edge of the upland as well as the cliff sea shore is the main landscape features of the city. Sea shore is 14 km long, and the city has 5 public beaches of various width because of a steep cliff sea shore. Problem is that reduces recreational potential of the city is water pollution in the Bay of Gdansk.

The ecological core of the city is formed mostly by the FSC certified forests, representing a highly productive landscape. These forests make 45% of the city area and remain in either protected areas (Tri-City Landscape Park, several small nature reserves) or are linked to them. Together, natural and semi natural greenery covers nearly 49% of the city area.

Due to the past and ongoing urbanization processes, upland forests are isolated from the coastal zone, and possibilities of creating ecological connections are limited to a few corridors of river or stream valleys. Forests are increasingly influenced by anthropogenic

changes as the city develops west. The forests that in the past used to frame the city located on the coast, now become internal urban forests, crossed with roads and infrastructure, surrounded by growing residential developments, and visited by more and more people. There are bicycle trails and foot paths in the forests, but, as protected productive landscapes, they are not the right places for other kinds of leisure activities. Public greenery is represented by just a few parks and squares, mostly in poor condition, so, while having total 261 sqm of greenery per person, well developed space for recreation is scarce in the city.

Contemporary structure of green areas

Ecological core of Gdynia is formed by areas excluded from urban development, and it creates a base for sustainable urban green network:

- forests (6 155 ha);
- allotments (250 ha) and cemeteries;
- urban greenery including a few historical parks (altogether nearly 187 ha);
- existing and designed protected areas: Tri-City Landscape Park, nature reserves, Natura 2000 areas, and other local forms of nature protection;
- beaches and cliff sea shores;
- water areas (creeks and small lakes);
- rural areas: meadows, groves, fields;
- land reserves for greenery and recreational functions;
- landscaped areas within urban developments.

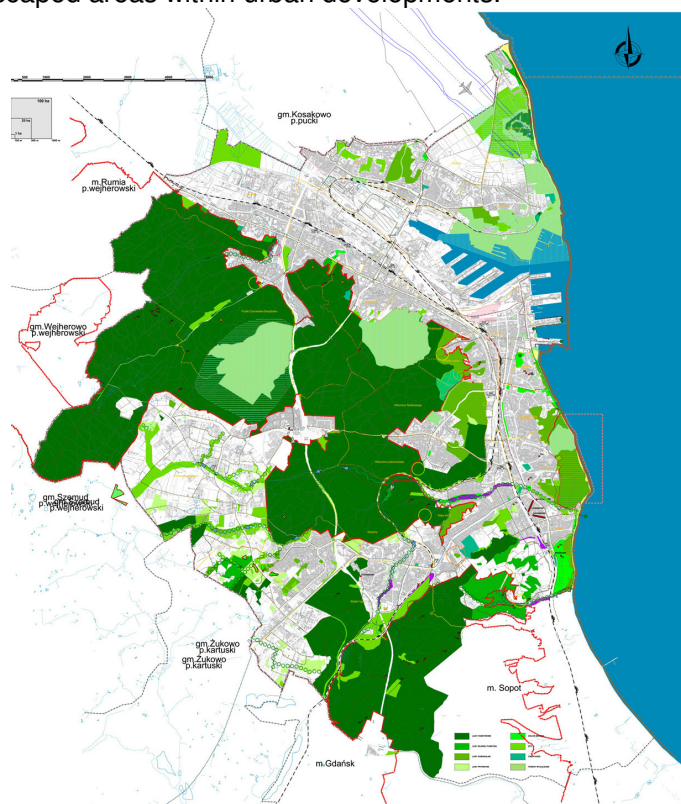


Fig. 3. Existing green areas in Gdynia.

Source: own work based on the *Study of conditions and directions of spatial development*, Gdynia Urban Planning Office, 2009

Abovementioned green areas are now managed by many independent institutions in Gdynia, as two Forestry Departments, several departments at the Municipality, Tri-City Landscape Park Management Board, Polish Army and housing cooperatives. That needs to be integrated, and cooperation between the involved parties needs to be enhanced. Coherent

green areas' planning can also help to diminish social exclusion and divide, as well as to revitalize poor districts that need to be enriched in terms of public services.

Concept outline: greenery at a doorstep

Ecological core of Gdynia is perceived as one of key areas, important for the identity of the city and its uniqueness. Anyway, it is endangered by urbanization and spontaneous recreation dispersed all over the forest areas.

The *Concept study* is aimed at solving both ecological and social problems, specifically at the need of protection of natural landscape and the social need of recreation in a close surrounding of places where people live. The project is to define an urban green network in terms of space and to plan how it should function to promote cohesion and interconnectivity between the diverse components: the built environment and unbuilt green zones.

Zoning

In order to create a framework for the concept, four zones of green areas with different characteristics and standards of development are defined:

- *Urban zone (A)* – public spaces within the urban fabric, multifunctional and highly developed for intensive use, with access provided for the disabled; this includes sports fields, playgrounds, skateparks, paved paths, urban furniture, lighting, sculptures and other artwork, fountains, lawns, flower-beds and other decorative landscaping, possible use of foreign species, and watering systems. Within Urban Zone there is a smaller *Prestige Zone (A+)*, including waterfront and key public spaces in the city center, with the highest development standards.
- *Forest zone and river/stream valleys (B)* – areas banned on building; recreational walking/cycling/jogging trails with arranged stops (access for the disabled where it is possible, wooden sheds, benches, tables, bins, bicycle stands, ground or gravel pavements or wooden decks); natural landscaping with local species; extensive use in the productive forests and intensive on their edges – programmed and developed individually, depending on the local conditions;
- *Coastal zone (C)* – arranged beaches with toilets, gastronomy, rental of recreational equipment and walking/cycling/jogging trails along the seaside; possible art events/happenings; seasonal use.
- *Protected zone (D)* – areas of nature protection, limited possibilities of recreational use due to the local conditions.

Zones will be connected by pedestrian and bicycle paths, that will form 'recreational loops' in the city.

Flagship projects

Flagship projects and initiatives are defined for each zone:

Zone A+:

- Gdynia waterfront: redevelopment of the key public spaces in the city center: Kościuszki Square, Southern Quay and the Seaside Boulevard with a possible location of a new Summer Theatre/outdoor cinema;
- further development of existing Marina (the largest sea marina in Poland);

- redevelopment, extension and adaptation of the Boulevard in Orłowo district for the disabled;
- Green Gdynia from the Backyard – an ongoing public participation programme of backyards' redevelopment and landscaping in the city center;

Zone A:

- Green Gdynia from the Backyard – planned expansion of the programme for other multifamily housing neighborhoods;
- two new, big parks in the city:
 - an about 20 ha family recreational park with educative and cultural functions (Kolibki East: place for the Globaltica Music Festival, and new Seaside Botanical Garden with Gardens of the Baltic Sea – an international network project of the coastal cities located in the Baltic Region);
 - a sports' and recreational park located on the highest hill in Gdynia called Donas Mountain, with winter sports option;
- pocket parks in the districts as places of social integration in the densely built, often run-down neighborhoods, with playgrounds/small sports fields for teenagers, water features, arbours, places of rest for the elderly/mothers with babies – programmed individually, depending on the local conditions; each having a different character provided by choice of plant species;
- redevelopment of school gardens – an architectural education programme for children;
- dog parks and/or dog toilets, depending on the local conditions;

Zone B:

- big cycling loop around the city, and smaller recreational walking/cycling loops linked to the public transport (train stations, trolleybus and bus terminals);
- forest parks - green, recreational buffer zones on the forest edges. Key example: Kolibki West – an extreme sports' park, camping and dog training center; stables and golf driving range; in other forest parks, there will be fitness trails, recreational walking/cycling/jogging paths.
- green walking/cycling ecocorridors in river and stream valleys intertwining the urban fabric, that would allow everyone to get to a landscaped recreational area within a walking distance from home. Key example: ecocorridor of Kacza River, the longest and biggest river in Gdynia, coming from the upland to the sea.

Zone C:

- Orłowo Beach – redevelopment of a historical seaside resort;
- seaside walking/cycling trail from Orłowo to Sopot, with Summer Seaside Theatre on the way,
- dog beach in Oksywie;
- water tram linking southern and northern districts of the city divided by the port area;

Zone D:

- Kępa Redłowska nature reserve - project of educational and recreational paths in the most precious of Gdynia forests, located right next to the city center and residential districts.

For other areas located in specified zones, but not mentioned as flagship projects, Green Network concept will provide guidelines for further development. For rural areas, where local plans are not worked out yet, Green Network concept study will provide general outlines.

There are also several initiatives that belong to Green Network, but do not belong to any zone:

- Gdynia viewpoints trail – a pedestrian trail linking places with the most beautiful views in the city;
- Green Gdynia without barriers – a programme intended for the disabled, in order to provide them with access to the green areas and encourage to spend time outdoors, in an active way, integrating with other people;
- Monuments of Nature programme - protective and educational programme dedicated to the old trees, which often are older than the city itself;
- White Waves – a programme that creates a coherent image of the public greenery in the city, with a choice of plant species for the streets, steep escarpments and public spaces.

Green Network concept will be implemented in phases divided into three periods: 2011-2012 (chosen flagship projects), 2012-14, and later. Implementation will be supported by monitoring, and the concept will be revised if needed – as it is to create a flexible management and design tool for the future.

Envisaged end results of the concept:

- Thanks to the complexity and system approach of the general concept, Green Network will contribute to the sustainable development of the city;
- Study itself will be an operational document – an urban greenery masterplan, complying standards of development for specific types of areas, such as protected areas, forests, forest parks, urban parks or squares, and defining the pilot projects and actions that need to be undertaken at these areas. That will help to manage the development and organize public participation;
- Green Network will make for higher quality of public spaces and city life, improve the accessibility for all inhabitants, regardless their social status or physical ability, and including the disabled, elderly, as well as teenagers and families with small children,
- Small business in the sector of tourism and recreation will gain from Green Network and will be able to create new jobs.

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