

# Pocket parks in Łódź as an element of improving urban resilience in the city centre



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Urban resilience is one of the main challenges for the European cities, especially in densely built-up central areas. Crucial problems occurring in urbanized areas include air pollution, environmental degradation, insufficient number of recreational areas, flooding, and heavy heat. Greenery is one of the factors that can contribute to the improvement of the urban resilience.

Greenery is one of the factors that can contribute to the improvement of the urban resilience. In order to enhance living conditions in cities, solutions such as pocket parks, are introduced more and more frequently. Parks that form a spatially coherent network turn out to be the most valuable for intensively developed city structures [1–8]. They improve the microclimate, provide comfort, and improve the aesthetics of the place. Methods used in the study include literature research, secondary data analysis, area inventory, archival study analysis and plot ownership analysis. The aim of the research is to present the possibility of introducing greenery in densely built-up districts of Lodz.

## Pocket park

Pocket park, also known as minipark, is a public green space located on small plots, usually in densely built-up downtown areas.

These are mini-parks dedicated to the closest community, which should be easily accessible and can have many functions: supplementing the green network in cities, improving the microclimate, being a place for local events, sport and recreation. It is a small place for meetings, activities for children and teenagers, where you can take relax from the city noise [9, 10].

Compared to traditional city parks, small pocket parks are little green area in the neighbourhood and it can be easily dedicated to new functions, according to the needs of the local community [11]. This variability of functions and arrangements allows the use of pocket parks by the many groups of local community, at different times of the day or year [12, 13]. This use flexibility distinguishes pocket parks from traditional public parks, where the arrangement and composition of the place is permanent and clearly defined.

## Location of studied area

The analysed area is located in downtown district of Lodz, it is delimited by the following streets: Północna, Źródłowa, Uniwersytecka, Narutowicza and Wschodnia (fig. 1).

The analysed area is located within the historic Ogrody Sukiennicze. During the industrial development of Lodz, the area performed agricultural functions for the needs of the inhabitants of the New Town. The second half of the 19th century brought technological advances that led to the development of industry. Technological growth manifested itself also in the gardens of the New Town. The role of industry in the downtown zone of Lodz was diminishing in the interwar period. Nevertheless, the influence of the industrial period is still visible in this area, which is reflected in the preserved post-industrial buildings [14–15]. Some of the former factories have been revitalized and adapted to fulfil new functions.

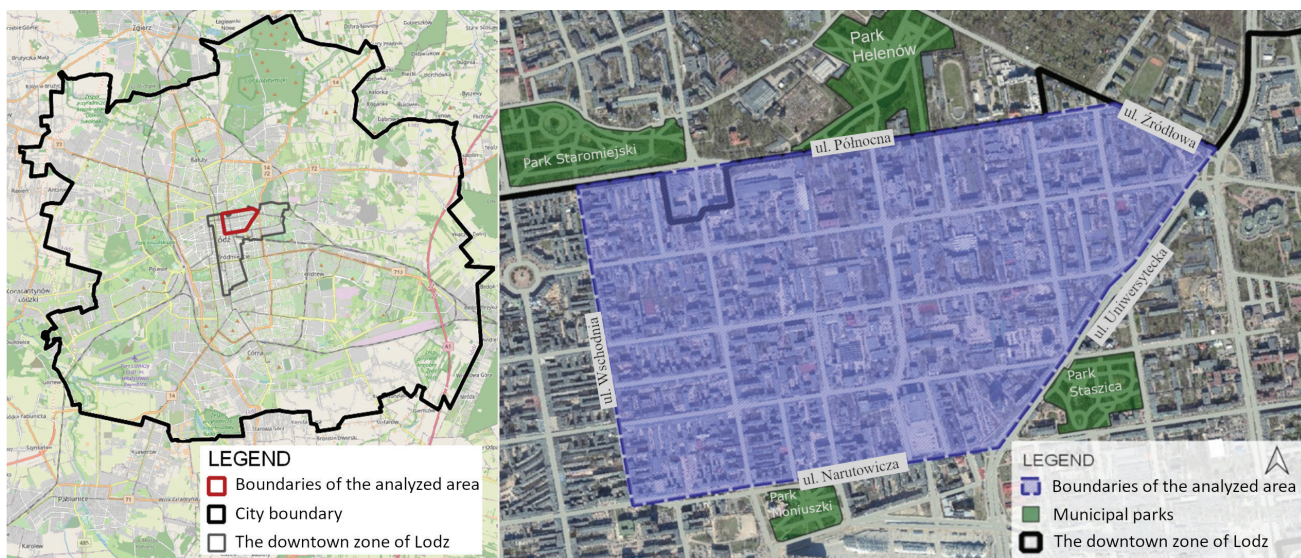


Fig. 1. Location of the studying area; source: own elaboration based on: <https://www.openstreetmap.org/>, <https://www.geoportal.gov.pl/dane/ortofotomapa>



Fig. 2. Analysis of existing conditions; source: own elaboration based on: <https://www.geoportal.gov.pl/>, <https://mapa.lodz.pl/>

### Project assumptions

The project aims to improve the resilience of city quarters by implementing a network of pocket parks in intensively built-up areas. The location of new green areas will be defined by a detailed analysis of existing greenery and an inventory of urban wasteland. The implementation of a spatially coherent network of green infrastructure ensure improved the microclimate and resilience to climate change. Design solutions should take into account the introduction of greenery in various forms like: new tree planting, green walls, green roofs and solutions in terms of local water retention, use of permeable paving, rain gardens.

### Methodology

The research methodology includes data analysis and archival research were carried in order to analyse the conditions of the area. Data provided by geoinformation portals (Intersit, Geoportal) were used to create the analysis of the existing land use conditions (fig.1.). An area inventory was carried out.

The Quantitative-statistical method was used to present the structure of the surface of the analysed quarters. The study examined the share of biologically active areas in the analysed urban quarters, as well as the indicator of development intensity and indicator of area use (fig. 3.).

Finally, a project of a network of pocket parks was created. Design concepts of previously indicated locations for pocket parks were made, along with a visualized model for one of them.

### Analysis

In order to identify suitable locations for new pocket parks, activities were carried out, which consisted of several stages. In the first step, the areas with the lowest access to public green areas were diagnosed. Subsequently, undeveloped plots of land were found, and an ownership analysis was carried out. The next step was to present the possibility of introducing green elements linking individual areas of newly designed urban greenery with existing one. Finally, the accessibility of the green network available for pedestrians was assessed by examining the coverage of isochrones. The created map made it possible to identify potential users of the newly designed areas. Most sources indicate that the adequate distribution of green areas in urban structures should provide their residents with access zones within the range of 300–400 meters. The motivation to visit such place decreases for a greater distance [15–16].

### Results

The map shows the pedestrian accessibility of green spaces after the introduction of planned

pocket parks (fig. 4.). The presented method of indicating predisposed locations for the miniature parks gives the possibility of increasing access to green areas in the analysed city structure. The designed layout of miniature parks provides residents with the proximity of recreational areas for majority of the studied area. In order to facilitate the processes of introducing changes and to reduce the costs related to the implementation of the network of pocket parks, mainly areas owned by the Lodz commune were selected. The implementation of projects on municipal land does not require the purchase of plots and does not require usually long-time negotiations with owners.

In order to create a coherent system of green areas, the project involves ensuring connection between the designed mini parks and existing city parks, by introducing woonerfs and green streets (fig. 5.). Creating a coherent system of urban greenery allows for the preservation of migration paths for animals and plants, which contributes to the maintenance of biodiversity in the city. Woonerfs, green streets and passages inside the quarters are conducive to increasing the comfort of pedestrians and increase their safety as well.

### Conclusion

The described project shows how a network of green areas can be realised in intensively

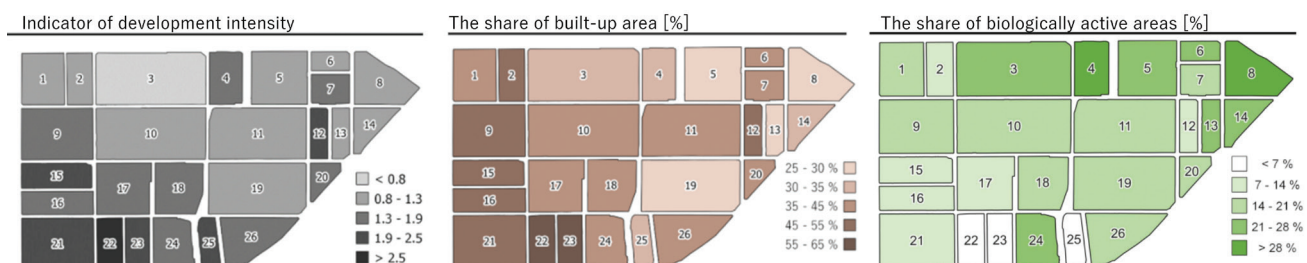


Fig. 3. Analysed indicators: indicator of development intensity, the share of built-up area, biologically active areas; source: own elaboration

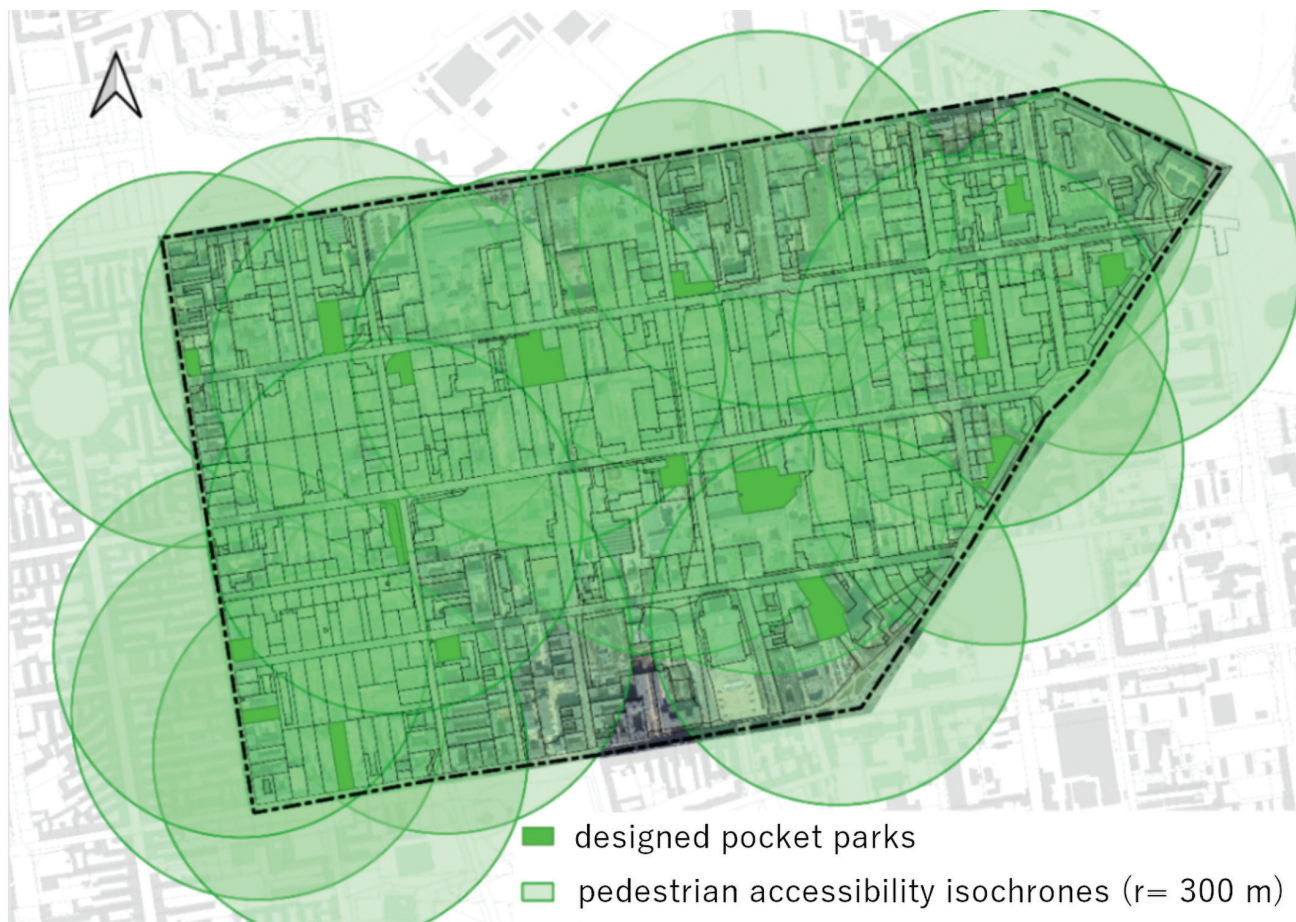


Fig. 4. Pedestrian accessibility of the designed pocket parks; source: own elaboration

built-up quarters. Pocket parks, due to their small size, can be realised on urban wasteland or on plots which are difficult to develop in any other way. The described project assumes the implementation of 14 pocket parks as a complement to the coherent network of green areas in the city, which will result in an almost tenfold increase in the area of public greenery. It will result in an increase in biologically active areas, the implementation of local retention, the construction of rain gardens or the improving of the green network's capacity.

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PRAWIDŁOWY SPOSÓB CYTOWANIA  
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**Abstract:** Urban resilience is one of the main challenges for the European cities, especially in densely built-up central areas. Crucial problems occurring in urbanized areas include air pollution, environmental degradation, insufficient number of recreational areas, flooding, and heavy heat. Greenery is one of the factors that can contribute to the improvement of the urban resilience. City centres are especially exposed to the problem of inadequate number of natural areas. In order to improve living conditions in cities, green infrastructure solutions, such as pocket parks, are introduced more and more frequently. They improve the microclimate, provide comfort, and improve the aesthetics of the place. Parks that form a spatially coherent network turn out to be the most valuable for intensively developed city structures. Methods used in the study include literature research, secondary data analysis, area inventory, archival study analysis and plot ownership analysis. The studied area borders with four city parks, however, there is not enough public green space fulfilling recreational functions. The particular issue refers to how to ensure the adequate amount of greenery in densely built-up areas. The aim of the research is to present the possibility of introducing greenery in densely built-up districts of Łódź. The project of the pocket parks network



## PROPOSED LOCATIONS FOR POCKET PARKS

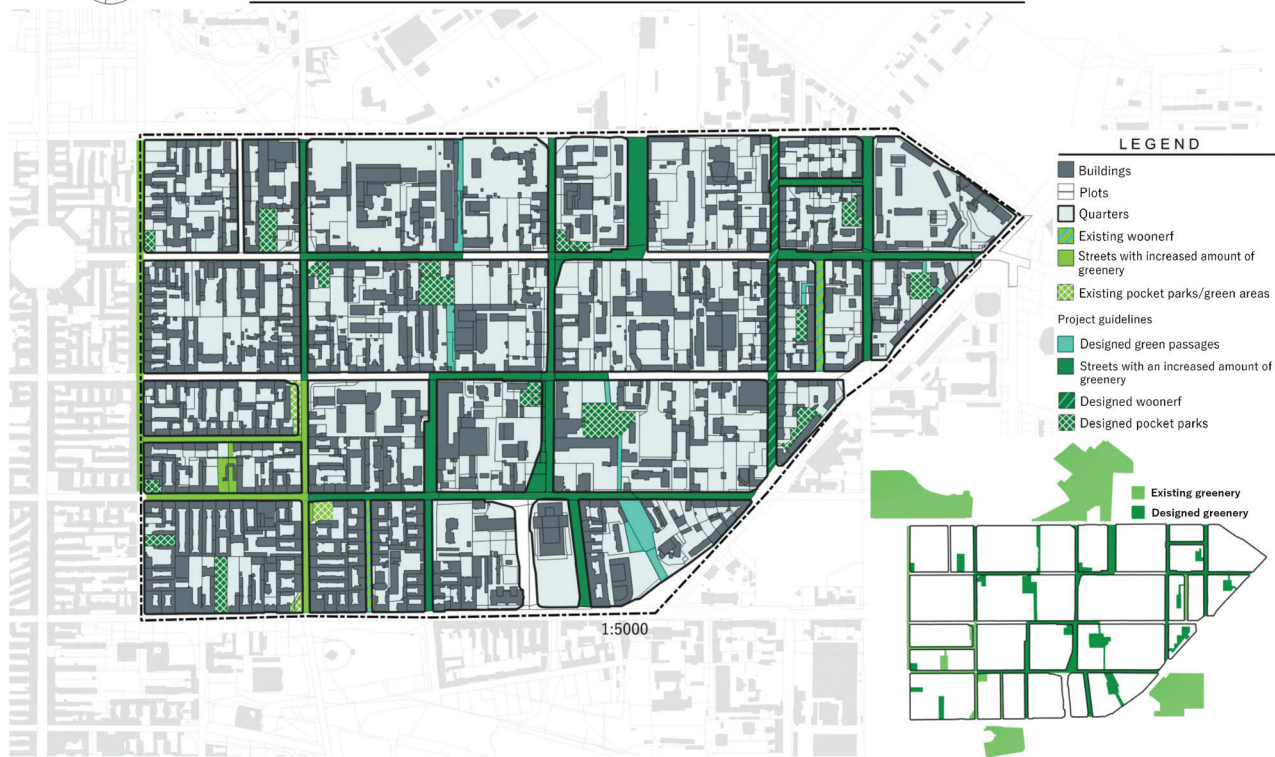


Fig. 5. Designed network of pocket parks for analysed fragment of the downtown area of Lodz; source: own elaboration

for the analysed area was presented and method of green infrastructure implementation proposed.

**Keywords:** pocket parks, urban resilience, green areas, Lodz

**Streszczenie:** PARKI KIESZONKOWE W ŁODZI JAKO ELEMENT POPRAWY ODPORNOŚCI MIEJSKIEJ W CENTRUM MIASTA. Poprawa odporności na zmiany klimatu to obecnie jedno z głównych wyzwań dla planowania przestrzennego, szczególnie na obszarach intensywnie zurbanizowanych, gdzie dokuczliwe stały się: zanieczyszczenie powietrza, degradacja środowiska, niewystarczająca liczba terenów rekreacyjnych, efekt miejskiej wyspy ciepła. Jako jedno z rozwiązań dla poprawy odporności miast zostało wskazane tworzenie spójnej prze-

strzennie sieci terenów zieleni. W artykule została opisana metoda definiowania lokalizacji dla sieci parków kieszonkowych, na przykładzie części strefy wielkomiejskiej Łodzi, w granicach dawnych Ogrodów Sukienniczych. W ramach badań przeprowadzono analizę lokalnych uwarunkowań oraz kwerendę archiwalną. Wykonano inwentaryzację stanu zagospodarowania i analizę bazy danych z portali geoinformacyjnych. Badania składały się z kilku etapów: wskazane zostały obszary o najniższym dostępie do publicznych terenów zielonych, wykonana została inwentaryzacja nieużytków miejskich oraz analiza własnościowa. Zweryfikowana została także dostępność sieci zieleni dla pieszych. Wyniki zostały przeanalizowane przy użyciu metody ilościowo-statystycznej. Opisana metoda badań pozwoliła na wska-

zanie predysponowanych lokalizacji dla miniaturowych parków. W celu usprawnienia procesów realizacji parków oraz obniżenia kosztów ich wykonania wybrano głównie tereny będące własnością gminy Łódź. Przedstawione w artykule założenia zostały opracowane w sposób zgodny z polityką miejską Łodzi, w której jednym z głównych celów jest poprawa odporności miasta. Cele koncepcji są zgodne z założeniami programu „Ogrody Sukiennicze”, który proponuje zwiększenie liczby ogólnodostępnej zieleni rekreacyjnej oraz zapewnienie nowych przestrzeni publicznych na tym historycznym obszarze.

**Słowa kluczowe:** parki kieszonkowe, odporność miejska, tereny zieleni, infrastruktura zielona, Łódź