

Assessment of therapeutic qualities of ten public parks in Bydgoszcz

Monika Trojanowska

*Department of Architecture and Urban Design, Faculty of Civil and Environmental Engineering
and Architecture, UTP University of Science and Technology in Bydgoszcz,
e-mail: monika.trojanowska@utp.edu.pl, ORCID: 0000-0001-8168-0746*

Abstract: This paper presents a binary rough assessment of ten public parks in Bydgoszcz, followed by a detailed assessment of one of them – Dolina Pięciu Stawów. The assessment was conducted using the universal pattern of design for health-affirming urban landscapes. The binary rough assessment results were satisfactory and similar for all parks. The results of the assessments indicated areas for possible improvement and can be used by the designers and inhabitants as justification for amendments. The major advantages of selected parks were qualities of space for mental and physical regeneration while the major deficiencies resulted from a lack of recreational equipment for various age groups and limited opportunities for social contacts. There were no major discrepancies and the fact that the rough assessment showed only little variation depending on the size of parks is proof of its limitation. This subjectivity of the rough evaluation was mitigated by a detailed assessment of Dolina Pięciu Stawów. This evaluation indicated further areas for improvement. The universal pattern of design for health-affirming urban places can be used as a ready-to-use tool.

Keywords: architecture, urban design, health-affirming urban places, health-affirming urban landscapes

1. Introduction

Living conditions in modern cities are indirectly linked to many lifestyle diseases. There is a direct link between the incidences of diseases and the distance from the place of residence to open green areas [1], [2]. Today, one of the key design problems is the creation of an urban environment that can promote the residents' health. Research evidence indicates that many factors have a positive impact on humans. One of them is architecture and urban design [3], [4]. Everyday contact with nature, the appropriate level of physical activity, the possibility of mental regeneration and satisfying social relations are linked to longevity and good health [5], [6]. It is a crucial challenge for the designers to create health-affirming places and urban landscapes. The definition of health-affirming landscapes implies that they unite the qualities of therapeutic landscapes, i.e. material aspects, social constructions, symbolic significances, and allegories of positive aspects of human health and well-being to influence people physical, mental and spiritual healing [7], [8]. A study by Japanese doctors demonstrated that senior's longevity relates to the frequency of park visits regardless. Neither gender differences nor social status discrepancies were observed [9]. Other studies evidenced the health impact of walking [10], [11].

The role of organized greenery is crucial for bringing people to nature. The natural areas and public parks can be used analogously, but the composed greenery has some advantages.

The first is of universal accessibility. The even surface of manmade pathways could facilitate navigation of park areas for people with reduced mobility and disabilities. The clear signage, benches, handrails, and ramps could embolden people who are scared of falling and prone to accidents due to any debilitating conditions. The organized forms of greenery can offer varied visual stimulation – invigorating or calming. Potential nuisances like poisonous, thorny or allergic plants could be avoided. Many of the therapeutic qualities could be enhanced by human intervention, e.g. framed views, long vistas, etc.

In this paper, the results of the study undertaken in the city of Bydgoszcz are presented. The city of Bydgoszcz was chosen because it is one of the greenest cities in Poland. There are numerous parks and green squares, therefore, there is plentiful material for comparison [12]. The public parks in Bydgoszcz are accessible and well maintained and therefore it was anticipated that the results would be relatively good.

2. Methods of assessment of health-affirming qualities

The health-affirming qualities were assessed using the author's original method – the universal pattern of design for health-affirming urban places (Tab. 1). This tool was developed using the triangulation of research evidence and field studies [13]. This tool can be used as an audit tool to determine the potential health affirming qualities of urban places. This pattern can be used to evaluate existing parks as well as a design tool to make improvements in open public green areas. In this study, the tool was expanded with the “access to park” category. This category is based on evidence which demonstrated that pleasant walkways to public parks are directly connected to increased frequency of visits to parks [14], [15], [16].

This tool was used to assess the therapeutic qualities of ten public parks in Bydgoszcz for a rough assessment, followed by a detailed assessment of one selected park – Dolina Pięciu Stawów. The selection of ten public parks was based on the criterion of accessibility, variety of size and functions and the pattern of the urban tissue. Ten popular parks with easy universal access either by foot or by bus were selected. The selection encompasses parks surrounded by a dense urban grid with high population density. The Balaton, Księżycowy and Dolina Pięciu Stawów could be treated as examples of urban regeneration projects.

Dolina Pięciu Stawów was chosen for detailed assessment because it is located in the center of the city and within close walking distance from numerous users. The health-affirming impact of this park design could be important. The size of this park is approx. 5 ha – it is an example of a pocket park. The other reason is that this park is a result of the successful urban regeneration project. It was created on a brownfield, which has an impact on soil and water quality [17], [18], [19].

Both the rough and detailed assessment was performed by one and the same researcher. Typically, one hour was spent in each park, more time was needed for larger parks with numerous equipment and garden features. All parks were visited between 01.06.2019 – 04.09.2019

Table 1. Universal pattern of design for health affirming urban places. Source: [13]

UNIVERSAL PATTERN OF DESIGN FOR HEALTH AFFIRMING URBAN PLACES					
1. UNIVERSAL DESIGN	2. PARK'S FUNCTIONAL PROGRAM	3. ORGANIZATION OF SPACE AND FUNCTIONS	4. PLACEMAKING	5. SUSTAINABILITY	6. ACCESS TO PARK
1.1 Place Area Location Surrounding urban pattern 1.2 Environmental characteristics Soil quality Water quality Air quality Noise level Biodiversity Forms of nature protection 1.3 Universal accessibility (addressing need of people with disabilities) 1.4 Access to park Distance to potential users Public transport stops Walkways to park	2.1. Psychological and physical regeneration Natural Landscapes Green open space Place to rest in the sun and in the shade Place to rest in silence and solitude Possibility to observe other people Possibility to observe animals 2.2. Social Contacts Enhancement Organization of events inside the park Gathering place for groups 2.3. Physical Activity Promotion Sports and recreational infrastructure Community gardens 2.4. Catering for basic needs Safety and security (presence of guards, cleanliness, maintenance, etc.) Places to sit and rest Shelter Restrooms Drinking water Food (possibility to buy food in the park or close vicinities)	3.1. The park spatial composition follows the surrounding urban pattern 3.2. Architectural variety of urban environment Focal points and landmarks Structure of interiors and connections Long vistas (Extent) Pathways with views Invisible fragments of the scene (Vista engaging the imagination) Framed views Human scale 3.3. Optimal level of complexity 3.4. Natural surfaces 3.5. Engaging features Risk/Peril Movement 3.6. Presence of Water 3.7. Sensory stimuli design Sensory stimuli: Sight Sensory stimuli: Hearing Sensory stimuli: Smell Sensory stimuli: Touch Sensory stimuli: Taste Sensory path	4.1. Works of Art 4.2. Monuments in the park 4.3. Historic places Culture and connection to the past 4.4. Thematic gardens 4.5. Personalization 4.6. Animation of place	5.1. Green Infrastructure 5.2. Parks of Second (New) Generation 5.3. Biodiversity protection Part of park not-available to visitors Native plants Native animals Natural maintenance methods 5.4. Sustainable water management Rainwater infiltration Irrigation with non-potable water Park in a flood risk zone 5.5. Urban metabolism 5.6. Ecological energy sources	6.1 Sidewalk Infrastructure Width of sidewalk Evenness of surface Lack of obstructions Slope Sufficient drainage 6.2 General conditions: Maintenance Overall aesthetics Street art Sufficient seating Perceived safety Buffering from traffic Street activities Vacant lots 6.3 Traffic Speed Volume Number and safety of crossings Stop signs On-street parking 6.4 User Experience Air quality Noise level Sufficient lighting Sunshine and shade Transparency of ground floors of building

2.1. The binary rough assessment of 10 public parks

Ten parks were chosen for assessment (Tab. 2). The size of selected parks ranged from 2 ha (Park Księżycowy) to 830 ha (Leśny Park Kultury i Wypoczynku Myślęcinek). The rough assessment was limited to therapeutic qualities of park area. The category “access to park” evaluation was limited to entrances to park.

Table 2. Parks chosen to analysis

1. Dolina Pięciu Stawów	6. Park Balaton
2. Botanical Garden	7. Park Załuskiego
3. Park Jana Kochanowskiego	8. Park nad starym kanałem
4. Park Henryka Dąbrowskiego	9. Park Księżycowy
5. Leśny Park Kultury i Wypoczynku Myślęcinek	10. Park Kazimierza Wielkiego

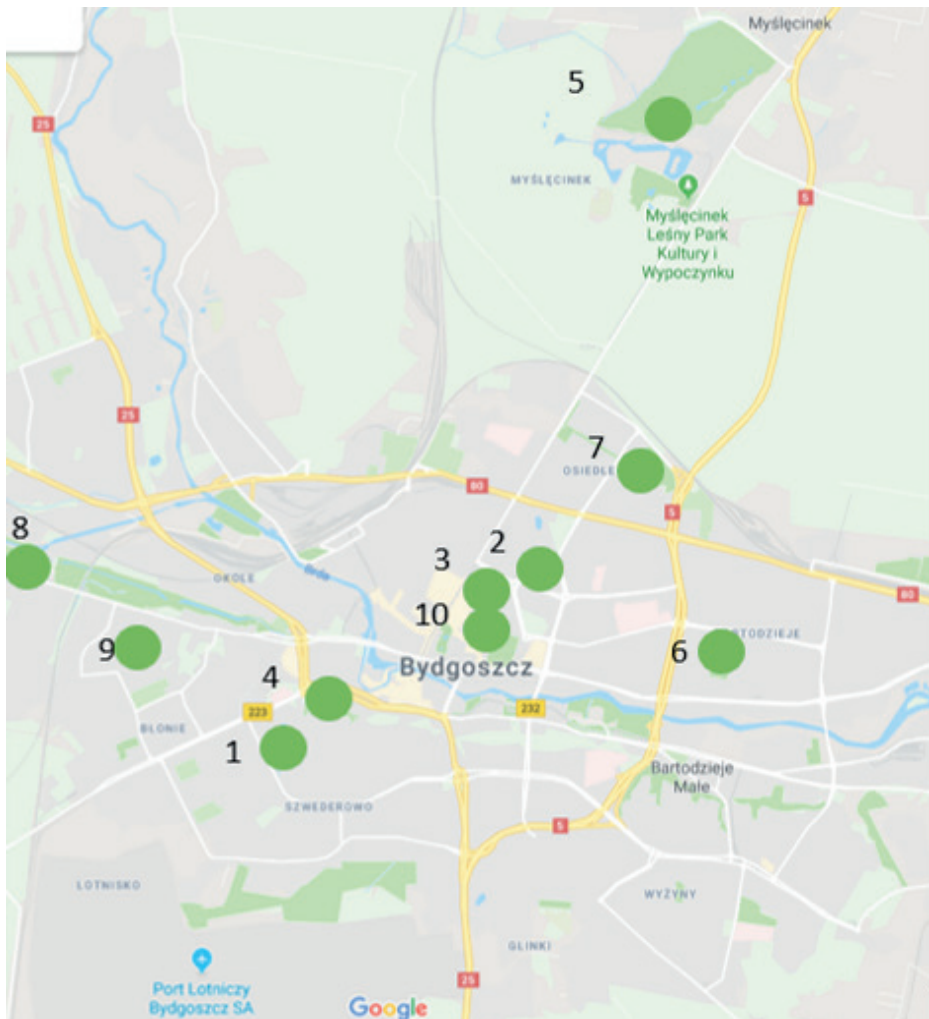


Fig. 1. Approximate location of studied parks in Bydgoszcz urban tissue. Map source: google maps, retrieved on: 09.09.2019

The binary assessment used 1 for presence and 0 for the absence of the given attribute. Therefore, it only allowed for notification if determined quality or equipment were present in the park. It was not possible to indicate that in larger parks there are multiple options, while in smaller parks they were limited to only one. For example, only one green open space to organize a group aerobics in a smaller park, and multiple open green spaces where simultaneous group aerobics for various age groups could be organized.

The results of this study demonstrated that the major advantages of selected parks were qualities of space for mental and physical regeneration, traditionally associated with public parks in Bydgoszcz.

At the same time, the major deficiencies resulted from a lack of recreational equipment for various age groups and opportunities for social contacts. It would be important to provide more seating alongside the pedestrian paths and moveable chairs for informal meetings. The basic needs of users could be satisfied better if there were public toilets, garden pavilions providing shelter, drinking fountains, and fruit-bearing plants and trees. Collective gardens could also be installed within public parks to increase opportunities for social contacts and therapeutic gardening.

As expected, the binary rough assessment results were satisfactory and similar for all 10 parks selected. There were no major discrepancies. The fact that the rough assessment showed little variation depending on the size of parks is proof of its limitation. Although the largest park in Myślęcinek scored 48 points, a bit more than smaller parks, the variation was not strongly pronounced. That may be also a proof that the parks studied were well-equipped and maintained.

Therefore in this study, after the binary rough assessment, one park was chosen for detailed assessment. This subjectivity of the rough evaluation was mitigated by a detailed assessment. The assessment also demonstrates the method of use of the universal pattern. The assessment could be repeated and performed for any public green space.

2.2. The detailed assessment of Dolina Pięciu Stawów public park



Fig. 2. Location and rough borders of Dolina Pięciu Stawów park in Bydgoszcz. Source of map: geoportal360.pl, retrieved on: 01.11.2019

Table 4. Assessment of health-affirming urban place – Dolina Pięciu Stawów public park.
Part 1. UNIVERSAL DESIGN

1. UNIVERSAL DESIGN	Rough assessment	Detailed assessment	Suggestions for improvement
1.1 Place			
Area, approximately	5 ha		
Location	city centre		
Surrounding urban pattern	dense urban tissue	Multifamily building blocks, townhouses, large surface commercial centre.	
1.2 Environmental characteristics			
Soil quality		Sufficient for recreational use. No visible tracks of pollution	
Water quality	historic retention ponds reconstructed from 2001-2003 and 2007 [17]	Non-potable water in the ponds. No swimming allowed	
Air quality	very good according to polish air quality standards	Good air circulation, plants and water improve local micro-climate.	
Noise level	moderate	Noise nuisance originates from traffic in streets adjacent to park	
Biodiversity	rich in species	Ponds have become a habitat for many species of insects and birds. Tables in the park explain the strive for biodiversity protection.	
Forms of nature protection	no		
1.3 Universal accessibility	accessible	Pathways are wide and even, majority of park's area is accessible.	Accessibility could be improved.
1.4 Access to park			
Distance to potential users	less than 500m	People who live in surrounding buildings, people who use public transport, clients from the commercial centre.	
Public transport stops	yes	Bus stops are located next to park's entrances.	

1. UNIVERSAL DESIGN	Rough assessment	Detailed assessment	Suggestions for improvement
Walkways to park	multiple, park is not fenced, therefore is easily accessible	Additional evaluation of streets leading to park presented below.	

The qualities evaluated in Table 1 are based on objective data retrieved from officially published data and subjective assessment by the researcher. The water quality measurements taken in the park was described by Marcin Gorączko in 2007 [19]. The ponds are located in close vicinity of a former chemical factory, therefore, the water included an excessive amount of silver compounds in 2007 [19]. However, the subjective observation of the phytoremediation process results in summer 2019 led to the conclusion that water in the ponds is inhabited by the biodiversity of plants. The colonies of mallards *Anas platyrhynchos* were observed in the ponds. Moreover, during the park visit, the practice of recreational fishing was observed. However, the ponds are not open to swimming and the water is marked as non-potable.

The air quality is measured by a station located in Plac Poznański in close distance to the park. The results on 31.10.2019 during the heating season in Poland were presented as very good (Fig. 2).

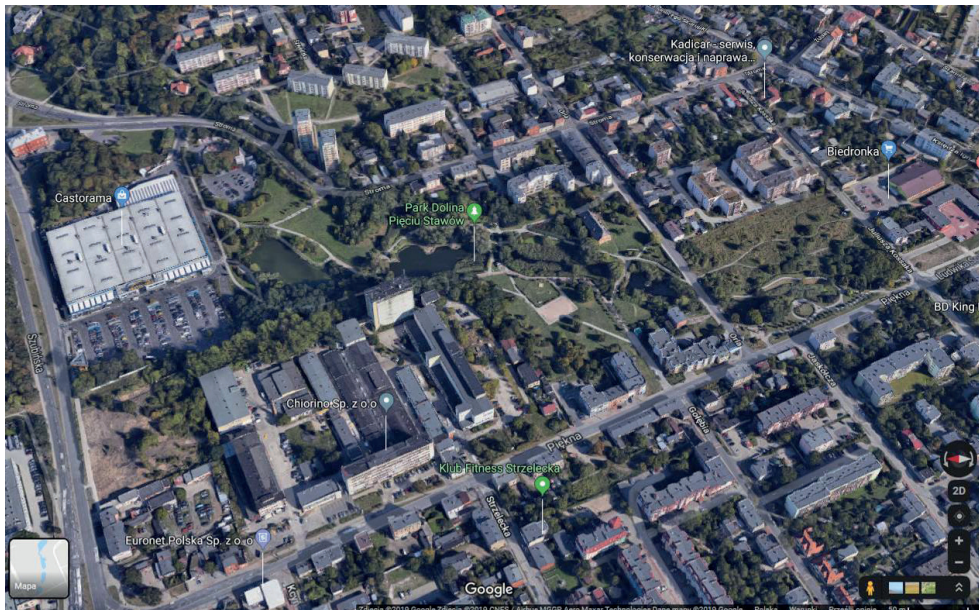


Fig. 3. Aerial photo of Dolina Pięciu Stawów park in Bydgoszcz presenting the surrounding urban tissue. Source: google maps, retrieved on: 09.09.2019

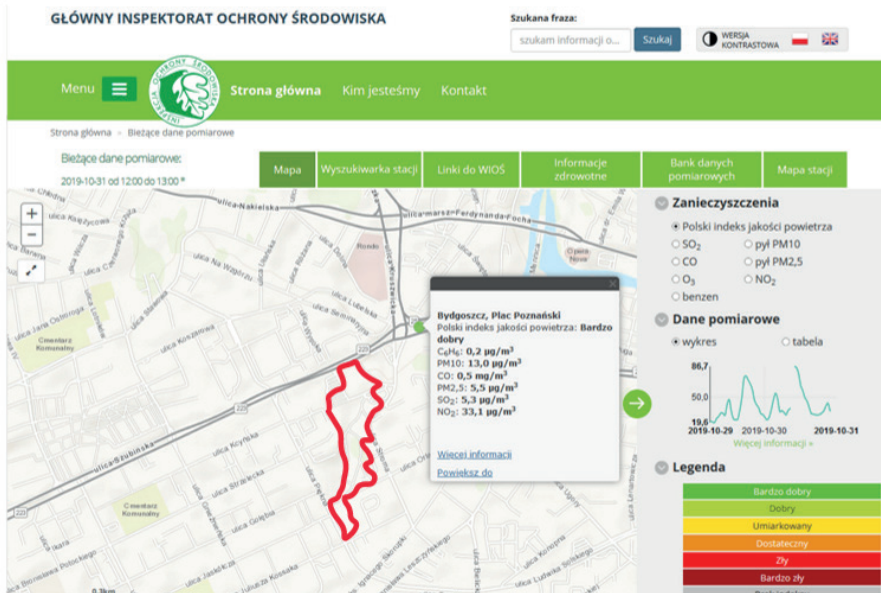


Fig. 4. Fragment of map representing air quality measurement system location near the Dolina Pięciu Stawów Park and air quality indicators on 31.10.2019 afternoon, Measurement station: Bydgoszcz, Plac Poznański, Polish air quality index: Very good, data source: <http://powietrze.gios.gov.pl/pjp/current>, retrieved on: 31/10/2019



Fig. 5. Fragment of road noise map LDWN prepared for the city of Bydgoszcz presenting the area of the Dolina Pięciu Stawów Park, source: <http://mapy.bydgoszcz.pl/VisMap/apps/Bydgoszcz/public/index.html>, retrieved on 31.10.2019

One of the minor nuisances present in the park was the traffic noise. The noise level was moderate close to the parking lots located near the large surface shopping center, but not disturbing inside the park. The incidences of noise level exceeding the permissible levels of noise did not concern the area of the park (Fig. 4). However on the streets leading to the park, the noise levels were exceeded on Szubińska and Piękna streets.

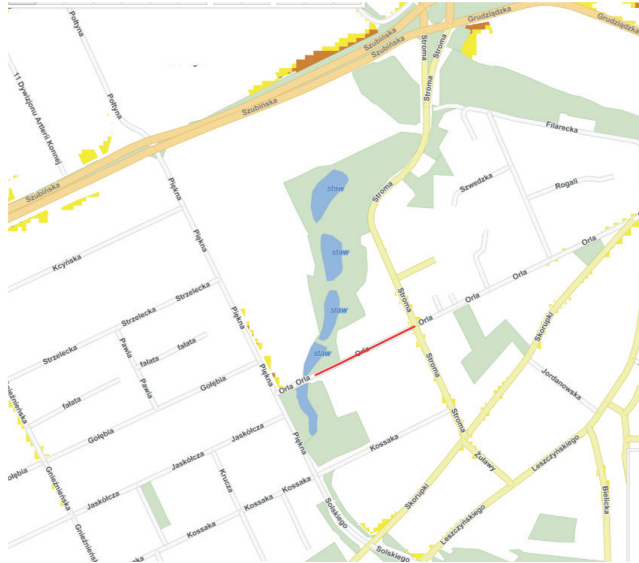


Fig. 6. Fragment from the map of exceedances of permissible levels of road noise LDWN in the city of Bydgoszcz presenting the area of the Dolina Pięciu Stawów Park, source: <http://mapy.bydgoszcz.pl/VisMap/apps/Bydgoszcz/public/index.html>, retrieved on 31.10.2019

The assessment of therapeutic qualities of public park determined following strong points of the park: natural scenic beauty which can be associated with lots of opportunities for physical and mental regeneration (Fig. 2), universal accessibility, well-defined connections to green infrastructure, protection of biodiversity and wildlife. These points are crucial and responsible for this park's popularity among users as they explained to the researcher during the study.

Table 5. Assessment of health-affirming urban place – Dolina Pięciu Stawów public park. Part 2. PARK'S FUNCTIONAL PROGRAM

2. Park's functional program	Rough Binary Assessment	Detailed Assessment	Suggestions for improvement
2.1. Psychological and physical regeneration			
Natural Landscapes	1	Natural borders created with maturing trees create parks interiors which give impression of pristine natural landscape.	
Green open space	1	Multiple	

2. Park's functional program	Rough Binary Assessment	Detailed Assessment	Suggestions for improvement
2.1. Psychological and physical regeneration			
Place to rest in the sun and in the shade	1	Multiple	The benches should have backrests and armrests.
Place to rest in silence and solitude	1	Numerous places.	
Possibility to observe other people	1	There are many places to observe activities of other people. It is a form of effortless social contact – emotional participation, required for psychological restoration [20].	
Possibility to observe animals	1	There are many places to observe wildlife (birds, i.e. colonies of mallards <i>Anas platyrhynchos</i>)	
2.2. Social Contacts Enhancement			
Organization of events inside the park	1	Open green areas can serve to organize events.	
Gathering place for groups	1	There are spatial possibilities to organize meetings.	
2.3. Physical Activity Promotion			
Sports and recreational infrastructure	1	Limited recreational infrastructure for children.	It would be beneficial to install new recreational infrastructure for various age groups.
Community gardens	0	There are no community gardens inside the park.	Park's space offers possibilities for organizing the community gardens.
2.4. Catering for basic needs			
Safety and security	1	Subjectively assessed by the researcher as safe place. Park is well maintained, clean and offers good visibility. Constant presence of park users was observed. Good visibility. Park space is monitored.	
Places to sit and rest	1	There are numerous benches.	It would be useful to build a garden pavilion with running potable water and electricity.
Shelter	0	There are no man made shelters in the park. Visitors can find provisional shelter under the canopies of trees.	It would be useful to install a garden pavilion.
Restrooms	0	Not in the park. However, there are toilets in the commercial centre nearby.	It would be useful to construct a public toilet in the park.
Drinking water	0	Not in the park. However, there is drinking water fountain in the commercial centre nearby.	It would be useful to install a drinking fountain in the park.

2. Park's functional program	Rough Binary Assessment	Detailed Assessment	Suggestions for improvement
2.1. Psychological and physical regeneration			
Food	0	Not in the park. However, there are food stands in the commercial centre nearby.	It would be useful to allow construction of a food stand in the park

On the other hand, the assessment helped to determine opportunities for improvement, which included: lack of comfortable seating for the elderly and disabled (with backrests and armrests), lack of recreational equipment for various age groups of children and adults, neither community gardens nor edible plants and no garden pavilions to provide shelter. Providing satisfactory infrastructure for various groups of users is crucial for placemaking efforts. However, various groups have different needs and careful design is needed to minimize possible conflicts of groups of users with different needs. Other points for improvement could be to install a table with a description of the history of this place, drinking fountains, improve orientation with better pronounced focal points and pockets of activities and install equipment to facilitate meetings and gatherings, e.g. open-air theatre.

Table 6. Assessment of health-affirming urban place – Dolina Pięciu Stawów public park.
Part 3. ORGANISATION OF SPACE AND FUNCTIONS

3. Organisation of space and functions	Rough Binary Assessment	Detailed Assessment	Suggestions for improvement
3.1. The park spatial composition follows the surrounding urban pattern	1	Park is well inscribed into surrounding urban tissue.	
3.2. Architectural variety of urban environment			
Focal points and landmarks	1	The sculptural forms at the crossroads of pedestrian paths	It would be useful to install focal points that would be more pronounced.
Structure of interiors and connections	1	Clear, legible structure of interiors and connections.	
Long vistas (Extent)	1	Yes, parks offers numerous picturesque long vistas	
Pathways with views	1	Yes.	
Invisible fragments of the scene (Vista engaging the imagination)	1	Yes, numerous designed vistas engaging the imagination	
Mystery, Fascination	1	Parks offers the feeling of mystery and fascination.	

3. Organisation of space and functions	Rough Binary Assessment	Detailed Assessment	Suggestions for improvement
Framed views	1	Numerous framed views.	
Human scale	1	Park is designed in human scale.	
3.3. Optimal level of complexity	1	Subjectively evaluated as satisfactory.	
3.4. Natural surfaces	1	Yes.	
3.5. Engaging features			
Risk/Peril	1	Multiple elements offer the subjective feeling of overcoming controlled risk.	
Movement	1	Water in the ponds and cascades, shimmering greenery.	
3.6. Presence of Water	1	Presence of water increases the recreational values of space.	
3.7. Sensory stimuli design			
Sensory stimuli: Sight	1	Numerous features, variety of visual stimuli, rich in details	
Sensory stimuli: Hearing	1	Shimmering water in the cascades	
Sensory stimuli: Smell	1	Groups of plants with strong and pleasant scent, water.	
Sensory stimuli: Touch	1	Groups of plants with various textures, water.	
Sensory stimuli: Taste	0	No.	It would be useful to plant edible plants, allow food trucks or food stands in the park
Sensory path	0	No	It is recommended to create a sensory path

The organization of space and functions of Dolina Pięciu Stawów was evaluated as satisfactory. The architectural structure is legible and well-organized. Parks offers various possibilities for physical and mental regeneration: engaging features, sensory stimuli and optimal level of complexity. The proposed suggestions for improvements included planting some edible plants (e.g. fruit trees), allowing food trucks or food stands in the park. It would be also recommended to create a sensory path.

Table 7. Assessment of health-affirming urban place – Dolina Pięciu Stawów public park.
Part 4. PLACEMAKING

4. Placemaking	Rough Binary Assessment	Detailed Assessment	Suggestions for improvement
4.1. Works of Art	0	No.	It could be interesting to organise temporary exhibitions of sculpture in the park.
4.2. Monuments in the park	0	House located next to park, at Orla 66 is inscribed in the register of national monuments. The building was for sale and required renovation [23]	It is recommended to renovate the historic house located at Orla 66 and remodel it to serve as shelter with restrooms, food and water. (e.g. café or restaurant)
4.3. Historic places			
Culture and connection to the past	1	Historic retention ponds and water reservoirs.	It could be interesting to install a table with this place history.
4.4. Thematic gardens	0	No.	It could be interesting to install thematic gardens in this park.
4.5. Personalization	1	During events organised by local government and associations	
4.6. Animation of place	1	During events organised by local government and associations	

The park visitors interviewed during this study emphasized the strong place identity of Dolina Pięciu Stawów public park. The open green area could be a place for the organization of local events like temporary exhibitions of sculptures or tables with the description of local history. Thematic gardens could also enrich the phenomenon of local identity.

Table 8. Assessment of health-affirming urban place – Dolina Pięciu Stawów public park. Part 5. PURSUIT OF -SUSTAINABLE DEVELOPMENT

5. Pursuit of -sustainable development	Rough Binary Assessment	Detailed Assessment	Suggestions for improvement
5.1. Green Infrastructure	1	Park is an important part of green and blue infrastructure.	
5.2. Parks of Second (New) Generation	1	Can be regarded as such.	

5. Pursuit of -sustainable development	Rough Binary Assessment	Detailed Assessment	Suggestions for improvement
5.3. Biodiversity protection			
Part of park not-available to visitors	1	Parts of ponds.	Provide enclosures for wildlife not available to visitors.
Native plants	1	Yes. Native plants were observed.	Increase the percentage of native plants.
Native animals	1	Yes. Native animals were observed.	
Natural maintenance methods	0	No data	
5.4. Sustainable water management			
Rainwater infiltration	1	Porous, permeable surfaces on some pathways	
Irrigation with non-potable water	Data n/a		It is recommended to use non-potable water for irrigation.
Park in a flood risk zone	yes	Partially [17, 18, 19]	
5.5. Urban metabolism			
	1	Waste segregation.	
5.6. Ecological energy sources			
	Data n/a		It is recommended to use ecological energy sources

The efforts for sustainable development were assessed as satisfactory. The suggestions included increasing the percentage of native plants and providing enclosures for wildlife not available to visitors. Another improvement could include using ecological energy sources (photovoltaic cells) for lighting or non-potable water for irrigation when necessary.



Fig. 7. The scenic beauty of Dolina Pięciu Stawów, 2019, author's photo

The results of the detailed evaluation of access to the park demonstrated that there were some deficiencies.

Nine streets were evaluated: Szubińska, Piekna, Orla, Stroma, Kossaka, Kcyńska, Strzelecka, Gołębia, and Jaskółcza. The traffic and noise level were important, but some deficiencies of sidewalks and drainage were also observed on Piekna, Orla, Stroma, and Kossaka streets. Lack of ramp for the disabled alongside the stairs was marked as a crucial deficiency of Szubińska street. Kcyńska, Strzelecka, Gołębia, and Jaskółcza were recently renovated and therefore the walking experience alongside those streets was evaluated as more pleasant. What was noted was lack of seating along all of the streets leading to the park which could hinder the frequency of park visits, especially among the elderly. Street greenery could also be improved and rain gardens installation could be beneficial.

3. Conclusions

This study confirmed that chosen parks in Bydgoszcz have numerous health-affirming qualities, but there are still possibilities for improvement. The detailed assessment of Dolina Pięciu Stawów indicated areas for possible improvements and facilitated the formulation of design recommendations.

Moreover, this study leads to the conclusion that the universal pattern of design for health-affirming urban places can be used as a ready-to-use tool. It is a useful addition to classic inventory of analyses commonly used in landscape architecture (such as functional

and spatial, nature, compositional, sensual analysis, etc.) It offers the possibility to assess both objective and subjective health-affirming qualities of landscapes. This tool was created to facilitate the Evidence-Based Design of public parks with therapeutic qualities. It can be used alongside other tools like SOPARC [21], [22] to evaluate the design and performance of public parks and justify the introduction of advisable changes. SOPARC can be used for the assessment of park users' physical activity, while the universal pattern is a tool for the evaluation of physical features and design qualities of public parks and their vicinities.

The main conclusion resulting from this study is the confirmation that the assessment of the therapeutic qualities of any public park should not be performed alone without the careful assessment of the urban tissue which surrounds it. The qualities of walkways to the park are as important as the qualities of the public park to create health affirming urban places. The results of a detailed assessment of Dolina Pięciu Stawów demonstrated that there could be numerous opportunities for improvement of the user experience and frequency of contacts with nature by improving the walkways to park. On the other hand lack of proper maintenance of sidewalks can hinder the health-affirming effects of any therapeutic park.

Volume	Important, main road crossings	important	little	little	little	little	little	little	little	little
Number and safety of crossings	Street lights, safe	One safe	One safe	no	no	no	no	no	no	no
Stop signs	no	no	no	no	no	no	no	no	no	no
On-street parking	prohibited	prohibited	yes	yes	yes	yes	yes	yes	no	no
6.4 User Experience										
Air quality	average	average	average	average	average	average	average	average	average	average
Noise level	important	average	average	average	average	average	average	average	average	average
Sufficient lighting	yes	yes	average	Requires renovation	Requires renovation	yes	yes	yes	yes	yes
Sunshine and shade	lack of trees providing shade on one side	Trees provide shade	Trees provide shade	Trees provide shade	Trees provide shade	Trees provide shade	Trees provide shade	Trees provide shade	Trees provide shade	Trees provide shade
Transparency of ground floors of building	Commercial centre – lack of transparency	Residential floors	Residential floors	Residential floors, individual parking	Residential floors, individual parking	Residential floors, individual parking	Residential floors, individual parking	Residential floors, individual parking	Residential floors, individual parking	Residential floors, walls, individual parking

References

- [1] World Health Organization, *Social determinants of health. The solid facts*. Second edition. 2003. ISBN 92-890-1371-0
- [2] Maas J., Verheij RA., "Morbidity is related to a Green living environment", *Journal of Epidemiology & Community Health*, vol. 63(12), 2009, pp. 967-973.
- [3] Cooper-Marcus C., Sachs N., "Theory, Research, and Design Implications", [in:] *Therapeutic Landscapes. An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces*. John Wiley & Sons, Inc., Hoboken, New Jersey (2014), pp 14-35.
- [4] Largo-Wight E., "Cultivating healthy places and communities: evidenced-based nature contact recommendations". *International Journal of Environmental Health Research*, Vol. 21, No. 1, February 2011, pp. 41–61.
- [5] Bernat S., „Terapeutyczne właściwości krajobrazu” in: *Krajobraz a zdrowie*, Bernat S. ed. Lublin, 2017, pp. 33 -51.
- [6] Lis A., *Struktura podłoża motywacyjnego zachowań użytkowników parków miejskich*. Wydawnictwo Akademii Rolniczej we Wrocławiu, 2005, Wrocław.
- [7] Trojanowska M., Sas-Bojarska A., "Health-affirming everyday landscapes in sustainable city. Theories and tools", *Architecture Civil Engineering Environment Journal*, vol. 11(3), 2018, pp. 53-61. <https://doi.org/10.21307/ACEE-2018-037>
- [8] Gesler W., "Therapeutic Landscapes: An evolving theme", *Health & Place*, vol. 11 (2005), pp. 295-297
- [9] Takano T, Nakamura K., Watanabe M., "Urban residential environments and senior citizens' longevity in megacity areas: the importance of walkable green spaces". *Journal of Epidemiology Community Health*; vo. 56 (2002), pp.913-918.
- [10] Rosenblatt Naderi J., "Landscape Design in the Clear Zone: The Effect of Landscape Variables on Pedestrian Health and Driver Safety", 2002. Available: swuc.tamu.edu/publications/papers/167425TP2.pdf [Accessed: 16 Apr 2014]
- [11] Rosenblatt Naderi J., "Design of walking environments for spirituals renewal Paper presented to Walk21-V Cities for people", in *The fifth International Conference on Walking in the 21st century*, June 9-11 (2004), Copenhagen, Denmark.
- [12] Oleś M., Harłodziński K., „Rola zieleni miejskiej w zrównoważonym rozwoju miasta Bydgoszczy/ The role of urban greenery in the sustainable development of the city Bydgoszcz". *Journal of Education, Health and Sport*, 6(13), 2016 , pp.349-412. <https://doi.org/10.5281/zenodo.570916>
- [13] Trojanowska M., *Parki i ogrody terapeutyczne*. Wydawnictwo Naukowe PWN, Warszawa 2017.
- [14] Van Herzele A. and Wiedemann T., "A Monitoring Tool for the Provision of Accessible and Attractive Urban Green Spaces", *Landscape and Urban Planning*, vol. 63, no. 2, 2003, pp. 109-126
- [15] Dannenberg, A.L., Cramer, T.W., & Gibson, C.J., "Assessing the Walkability of the Workplace: A New Audit Tool", *American Journal of Health Promotion*, 20 (1), 2005, pp. 39–44.
- [16] Frumkin H. et al., "Nature Contact and Human Health: A Research Agenda", *Environmental Health Perspectives*, vol. 125, no.7, 2017. CID: 075001, <https://doi.org/10.1289/EHP1663>
- [17] Gorączko M., „Antropogeniczne zbiorniki wodne na obszarze Bydgoszczy – wprowadzenie do badań limnologicznych”, in *Jeziora i sztuczne zbiorniki wodne – procesy przyrodnicze oraz znaczenie społeczno-gospodarcze*, Jankowski A.T., Rzętała M. ed., Uniwersytet Śląski, Polskie Towarzystwo Limnologiczne, Polskie Towarzystwo Geograficzne – Oddział Katowicki, Sosnowiec 2005.
- [18] Gorączko M., "Seasonal nad spatial variation in the specific conductivity in the waters of ponds in Bydgoszcz", *Limnological Review*, vol. 6 (2006), pp. 111-116.

- [19] Gorączko M., „Wybrane problemy funkcjonowania małych zbiorników wodnych na obszarach Zurbanizowanych”, *Nauka Przyroda Technologie, Dział: Melioracje i Inżynieria Środowiska*, vol. I, No.2, 2007.
- [20] Stigsdotter U., Grahn P., “What Makes a Garden a Healing Garden?”, *Journal of Therapeutic Horticulture*, vol. 13, 2002, pp. 60-69.
- [21] Han B., Cohen D., McKenzie T.L., “Quantifying the contribution of neighbourhood parks to physical activity”, National Recreation and Park Association Report.
- [22] Han B. et al., “How much neighbourhood parks contribute to local residents’ physical activity in the city of Los Angeles: a Meta-Analysis”, *Preventive Medicine*, vol. 69 Suppl, 2014, pp. S106-S110. <https://doi.org/10.1016/j.ypmed.2014.08.033>
- [23] Czajkowska M., „Zabytek w świetnej lokalizacji na sprzedaż. Chętnych na razie brak”. *Gazeta Wyborcza, Bydgoszcz*, 18.02.2019. Available: <https://bydgoszcz.wyborcza.pl/bydgoszcz/7,48722,24458139,zabytek-w-swietnej-lokalizacji-na-sprzedaz-chetnych-na-razie.html> [Accessed: 30 Oct 2019]

Ocena walorów terapeutycznych wybranych dziesięciu parków publicznych w Bydgoszczy

Monika Trojanowska

*Zakład Architektury i Urbanistyki, Wydział Budownictwa, Architektury i Inżynierii Środowiska,
Uniwersytet Technologiczno-Przyrodniczy w Bydgoszczy,
e-mail: monika.trojanowska@utp.edu.pl, ORCID: 0000-0001-8168-0746*

Streszczenie: W artykule przedstawiono ocenę walorów terapeutycznych 10 parków publicznych w Bydgoszczy. Ocena została przeprowadzona z wykorzystaniem narzędzia – Uniwersalnego wzorca projektowania miejsc sprzyjających promocji zdrowia. Przedstawione badanie obejmowało ogólną ocenę 10 wybranych parków publicznych w Bydgoszczy, a następnie szczegółową ocenę jednego z nich. Wyniki oceny walorów terapeutycznych wybranych parków miejskich wykazały obszary wymagające poprawy i mogą być wykorzystane przez projektantów i mieszkańców jako uzasadnienie wprowadzania zmian. Uniwersalny wzorzec projektowania miejsc sprzyjających promocji zdrowia może być wykorzystany jako gotowe narzędzie wspierające proces projektowy.

Słowa kluczowe: architektura, urbanistyka, krajobrazy miejskie sprzyjające promocji zdrowia

