

Scientific Report

date: 05/07/2022

Type of scholarship:	Postdoctoral	Application ID:	165681
Duration:	07/05/2022 to 06/06/2022 (1 month)		
Title:	New trends in the processes of adapting public greenery to the current needs of users, as well as their development following the idea of sustainability		
Name:	Dr. Kinga Kimic		
Home institution:	Warsaw University of Life Sciences – SGGW, Department of Landscape Architecture, Institute of Environmental Engineering, Nowoursynowska Street 166, 02-787 Warsaw, Poland		
Supervisor:	Prof. Albert Fekete		
Host institution:	Hungarian University of Agriculture and Life Science – MATE, Faculty of Landscape Architecture and Urbanism, Villányi út 29-43, 1118 Budapest, Hungary		

The main purpose of the scholarship was to recognize main trends in development of small urban green areas in Budapest as a result of their revitalization processes towards enhancement of environmental and social values initiated in recent years.

The cases selected for the study based on review of both new designs (realizations) and literature, and included six public green squares and gardens – the representatives of the so-called 'good practices' implemented in different locations in the city of Budapest in the 21st century.

Description of main works carried out during the scholarship:

The scholarship has been conducted in relation to stages according to the work plan.

Realization of work plan:

WEEK	STAGE	SCOPE	RESULTS
week 1	THEORETICAL FRAMEWORK	<ul style="list-style-type: none"> - literature review based on published and online accessible sources related to revitalization processes of urban green areas in Budapest, focused on small green squares and gardens developed as part of green regeneration of the city following environmental and social aspects 	<ul style="list-style-type: none"> - the most representative sources (scientific publications, popularizing articles, information from Budapest web pages, design offices, social media, etc.) have been reviewed to collect information, prepare theoretical framework and background for the study; the collected data was fundamental for the selection of cases for further detailed research focused on 2 main aspects: environmental and social
	CASES SELECTION	<ul style="list-style-type: none"> - defining the main criteria for case selection; - the number of cases selected for detailed study was limited to six small green areas 	<ul style="list-style-type: none"> - the selection of cases based on the main criteria as follow: a modern small public green areas (green squares and/or gardens) built or rebuilt after 2000; location in different areas (districts) of the city and connected to multifunctional residential and service areas; landscape architecture objects revitalized in the process of social, spatial and functional renewal of the city focused on a sustainable approach; an important criterion was the completion of the green area construction process in the period preceding the <i>in situ</i> study; - the six cases selected for the study include: 5 green squares (Teleki László tér, József nádor tér, Honvéd tér, Március 15. tér, Etele tér) and 1 public garden (Ottlik-kert)
week 2 and 3	CASE STUDIES	<ul style="list-style-type: none"> - investigation focused on two main aspects: environmental and social development of green areas; - research based on an in situ methods - site visits and data collection (general inventory of sustainable elements and features, identification of recreational programme, observation of social behaviors, photographic documentation) 	<p>ENVIRONMENTAL ASPECT:</p> <ul style="list-style-type: none"> - identification of sustainable solutions: greenery (including green roofs), permeable pavement, water elements, recycling, materials and technologies supported sustainable development, etc. - identification of natural elements (main plant structures and their diversity) <p>SOCIAL ASPECT:</p> <ul style="list-style-type: none"> - identification and analyses of recreational program of cases, sanitary facilities, security level, accessibility for people with disabilities and older adults, cultural programme and relation to site history, educational programme, etc.)

week 3	ANALYSES	- multidirectional data analyses divided into environmental and social aspects	- evaluation based on 3 level scale describing the scope of implementation of sustainable solutions and the diversity / attractiveness of social functions
week 4	SYNTHESIS OF COLLECTED DATA	- assessment of the studied cases and their recognized features - elaboration of results; - defining leading trends in revitalization of small public green areas in Budapest in the context of their environmental and social development and values	<p>ENVIRONMENTAL ASPECT: Main advantages are related to increasing the share of biologically vital areas supported by systems of water retention and other innovative technologies for plants; the care of biodiversity, also diversity and quality of natural elements; The field for further activities is related to implementation of recycling, increasing the scope of waste segregation, and supporting representatives of local fauna. The detailed results are presented in Table 1.</p> <p>SOCIAL ASPECT: Main advantages are related to increasing the multifunctional recreational program and accessibility of small green areas, development of education and promotion of culture, more popular implementation of placemaking processes for local communities' activation, new forms of interpretation of site history, the presence of sanitary facilities and use of security tools increasing quality of space. The detailed results are presented in Table 2.</p>

Table 1. The assessment of green squares and gardens – environmental aspect – results

No.	Name of green area	Biologically Vital Area	Permeable pavements	Innovative systems and/or constructions supporting sustainability	Natural elements				Biodiversity	Houses for insects and birds	Recycling	Waste segregation
					Trees	Shrubs and cover plants	Perennials and ornamental grasses	Lawns				
1.	Teleki László tér	xx	xx	x	xx	xx	xx	xx	xx	xx	xx	xx
2.	József nádor tér	x	-	xx	x	x	x	xx	x	-	-	-
3.	Honvéd tér	xx	xx	x	xx	xx	xx	xx	xx	xx	-	x
4.	Március 15 tér	xx	-	x	xx	x	x	xx	xx	x	-	xx
5.	Etele tér	xx	x	x	x	x	xx	xx	x	-	-	-
6.	Ottlik-kert	xx	x	x	xx	x	x	xx	x	-	-	-

Degree of implementation: - = none, x = medium, xx = high

Table 2. The assessment of green squares and gardens – social aspect – results

No.	Name of green area	Social participation in planning and/or building green area	Rest and recreational offer			Accessibility for people with disabilities and older adults	Connection to bicycle paths / bicycle stations	Education facilities	Cultural and/or historical facilities	Sanitary facilities	Security
			adults	children and youth	dog area						
1.	Teleki László tér	xx	xx	xx	xx	x	x	xx	x	xx	x
2.	József nádor tér	x	x	-	-	xx	x	x	xx	xx	xx
3.	Honvéd tér	x	xx	xx	xx	xx	x	xx	xx	xx	xx
4.	Március 15 tér	-	xx	x	x	x	xx	xx	xx	x	x
5.	Etele tér	-	x	-	-	xx	xx	-	-	x	x
6.	Ottlik-kert	-	x	x	-	x	-	xx	xx	-	xx

Degree of implementation: - = none, x = medium, xx = high

The results on studied green squares and gardens in Budapest confirm that **environmental and social aspects** become very important in the processes of their rehabilitation and revitalization implemented in the 21st century. Sustainable solutions and community-based reinvention become a leading trend in creation of those small green areas making them valuable representatives of modern development of the city.

The results show that the **environmental approach** is related to increasing the share of biologically vital areas which are supported in many cases by systems of water retention (diverse elements of blue infrastructure) and innovative technologies used for vegetation. Activities aimed at increasing biodiversity concern protection and adaptation of old trees recognized as the most valuable plants of the site, and implementation of diversity of plants including compositions of shrubs, perennials and ornamental grasses, lawns. The increasing care of diversity and quality of natural elements is visible in all studied realizations – this is evident in most naturally arranged Teleki László tér, and even in the design of Etele tér which transformed the former concrete plaza into an organic space. However, some further activities related to implementation of recycling, increasing the scope of waste segregation and supporting representatives of local fauna are still needed.

The results related to the **social context** show the growing role of local actors and their participation to the processes of inclusive community-based planning and designing of small green areas – e.g. an implementation of this approach was crucial for the success of Teleki László tér. The main recognized advantages of studied cases are related to their development towards multifunctional public spaces by development of recreational program for all age users.

Implementation of an *universal design* solutions observed on medium or high level in all studied green areas is also crucial for increasing their accessibility for people with disabilities and older adults. At the same time the development of cultural context and proposed diverse form of education may raise the rank and uniqueness of the place and help to bring out its “genius loci” – connect the past and present, visualize historical values and contribute to the dissemination of local and even national values of the site such as in Ottlik-kert or Március 15 tér.

The main purpose of the research has been achieved. The results of presented pilot study conducted in Budapest confirmed that the combination of environmental and social aspects define the leading trend in creation of small urban green squares and gardens which is in line with the approach promoted in current landscape architecture. The simple methods based on in situ study – general inventory of sustainable elements and features, and identification of main recreational program – are an initial stage of assessment of those types of green areas towards defining the way of their contemporary transformation. The recognized trend related to community-based approach and spatial revitalization towards more socially and naturally rich areas may help to understand how important is to implement this idea in creation of valuable and attractive green squares and gardens as a response to the deficit of green spaces in highly urbanized areas. The proposed study design may be also applied to other types of urban green areas as well as urban public spaces.



Dr. Kinga Kimic