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CONFERENCE PROCEEDINGS

Editors: Dr. Hourakhsh Ahmad Nia and Dr. Rokhsaneh Rahbarianyazd

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Introduction

The *1st International Conference on Contemporary Affairs in Architecture and Urbanism* is organized by Anglo-American Publications LLC with the collaboration of International Journal of Contemporary Urban Affairs. ICCAUA 2018's mission is to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results about all aspects of the contemporary concerns, methods and approaches to architecture and urbanism. It also provides the premier interdisciplinary forum for researchers, practitioners and educators to present and discuss the most recent innovations, trends, concerns, practical challenges encountered and the solutions adopted in the field of Architecture and Urbanism.

Accordingly, the conference brings together all the theories, manifestos and methodologies on contemporary architecture and urban spaces to raise the understanding for the future of architectural and urban planning. Overall, the Conference aimed to establish a bridge between theory and practice in the built environment. Thus, it reports on the latest research findings and innovative approaches, methodologies for creating, assessing, and understanding of contemporary built environments.

A broad outline of the conference's scope includes: peer-reviewed original research articles, case and technical reports, reviews and analyzed, papers, short communications. This conference proceeding is the combination of scholars, practitioners, professionals, researchers and policymakers with a common interest in the field of architecture and urban design from different disciplines, such as Art, Architecture, Landscape, Urban Plane and Urban Design. The Scopes of this conference proceeding includes:

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Table of Contents

Innovative Planned Unit Redevelopment: A Legal Review.....	1
Learning from Resilience: Cities towards a Self-Organizing System.....	27
The Impact Of Globalization On Cities.....	74
Concomitant Recital of a Prolonged Reign: Dilation of the Dutch Empire and Enticement of Ascendency, Delineating Batavia, Victim and Valedictorian.....	85
A Theoretical Evaluation in the Context of Actor-Network Theory (ANT) Approaches of Urban Regeneration Implementations: Case Study of Bağcılar District, Istanbul.....	119
Architectural Facade Design Proposal for Water Production via Air Content.....	155
Establishment of Space syntax to read and analyze urban network; the case of study, Famagusta city of Cyprus.....	181
Adaptive Use of Passive Shading Devices in Public Buildings: A Case of Famagusta.....	196
Analyzing the Energy Usage and Carbon Emission in Office Administrative Block: A Case Study of KTG Linton University Administrative Block, Malaysia.....	217
The Use of Textile-Based Materials in Shell System Design in Architecture and an Evaluation in Terms of Sustainability.....	240
An Actor-Network Theory (ANT) Research in the Context of Building Production: Istanbul International Financial Center BDDK Building.....	256
Analysis of the Extent of Red Light Running in Minna, North-Central Nigeria.....	287
Investigating the Synergy of Integrated Project Delivery and Building Information Modeling in the Conservation of the Architectural Heritage.....	319
The Coordination Of Actors In Urban Regeneration Projects: Fikirtepe, Istanbul, Turkey.....	344
Effects of Architectural and Urban Design Project Competitions on Built Environment and New Discourses Brought Thereby	367
Factors Influencing the Perception of Urban Space.....	392
Cultural landscape devastation as a consequence of poor Sustainable Urban Development practice.....	403
Exploring Design Principles of Bioclimatic Architecture and Double Skin Facades as A Convincing Tool for Energy Saving.....	429
The Role of Advance Composite material In Contemporary Buildings.....	445
Impact of A Community Place in Regards to Sustainable Design towards Decreasing Social Crime.....	462

The Substrate and Urban Transformation.Rome: The Formative Process of the Pompeo Theater Area.....	475
Computer and traditional tools in design activity: Experimental study on students of architecture.....	491
The phenomenon of mobility, a development challenge for the city of Algiers.....	512
Managing a Project as Part of an Urban Renewal Program.....	532
Planning, management and strategies for the light rail transit, Case of the tramway of Constantine Algeria.....	551
Urban rights and sustainability in Latin-America. First steps towards urban justice operationalization.....	579
Catching Up With BIM: A Curriculum Re-Design Strategy.....	602
Keeping the Pulse of Heritage Awareness in Ankara: Two Historic Sites, Two Interventions.....	624
Vernacular Architectural Preservation of Material and Spiritual Interconnected Cultural Heritage.....	646
A Comparative Analysis On User Satisfaction In Closed And Open Office Buildings: Case Study Of Some Selected Buildings In Abuja.....	673
Embracing today’s economic and technological reality: What it means for design professionals.....	684
Re-visiting the Park: Reviving the “Cultural Park for Children” in Sayyeda Zeinab in the shadows of Social Sustainability.....	695
Towards a sustainable environment of the metropolis Algiers, case: project “Great Winds Park-Dounya Park-Algiers”.....	720
Towards Reviving the Missing Noble Characteristics of Traditional Habitual Social Life: “Al-Farej “In Kingdom of Bahrain.....	741
Optimization Of Urban Street Lighting Conditions Focusing On Energy Saving, Safety And Users’ Needs.....	763
Evaluation of the Thermal Comfort in the Design of the Museum Routes: The Thermal Topology.....	786
Access to Land Influencing the Urban Development of Egypt.....	811
Tafilelt, the neo traditional model of ksour in Algeria: Assessment of the multifunctionality of urban spaces.....	834
Reformation of Slums.....	870
Non-Quality Cost Effect on an Architectural Project.....	879
Transformation of Berber Traditional Planning and Living Spaces.....	936

The Landscape Quality of Community Spaces in Collective Housing.....	953
Visual pollution phenomena and sensitivity of residences in heritage city centers.....	974
Understanding the Negative Impacts of Rigid Institutional Framework on Community Development Projects: A Case From Bangladesh.....	1002
Empowering the urban poor through participatory planning process: a case from Jhenaidah, Bangladesh.....	1026
An Initial Study of Soundscape of Visually Impaired People in Urban Parks.....	1046
Multifunctionality of the oasis ecosystem. Case study: Biskra Oasis, Algeria.....	1057
Renewable Energy Management In Urban Projects In Algeria.....	1076
A Short Glimpse to the Urban Development of Tabriz during the History.....	1101
An Industrial Heritage Case Study in Ayvalık: Ertem Olive Oil Factory.....	1127
A Discussion on Affordable Housing Projects; Case Study Mehr Housing, Iran.....	1151
The Rise of Crime in Affordable Housing in Suburbs, Case of Iran.....	1172
Gentrification within the Law of Transformation of Areas at Disaster Risks in Turkey Sulukule, Istanbul Example.....	1187
Shaping the City that Decreases Overweight and Obesity through Healthy Built Environment.....	1215
Study of Light Pollution in Urban Lighting in Nisantasi Example.....	1243
Evaluation of Çanakkale Kilitbahir Castle in the Context of Refunctioning.....	1262
Representing Iranian-Islamic Identity in Iranian Contemporary Cities Structure.....	1278
Evaluating Gender Based Behavior in Historical Urban Public Place.....	1296

An Initial Study of Soundscape of Visually Impaired People in Urban Parks

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Abstract

Urban parks in a developing country hardly accommodate people with disability. The objective of this study is to investigate the possibility of improving urban parks using the perception of visually impaired people of urban parks' sonic environment. This study was conducted off-site the urban park using a questionnaire survey with two groups of participants: sighted people (35 participants) and visually impaired people (35 participants). The analysis was conducted using semantic analysis from the word used for explaining the sonic environment. This study shows that the visually impaired participants explained the sonic environment with more terminology (56 terminologies for visually impaired participants and 32 terminologies for sighted participants). It indicates the engagement with the sonic environment is higher for the visually impaired participants compared to the sighted participants. Further analysis using semantic categorization also shows that the visually impaired participants have broader perception compared to the sighted participants. The sighted participants use the terminology related to the perception of comfort, dynamic of the sound source, and other perceptions (visual and thermal). The visually impaired participant answers also represent the same aspect, but with more perception: safety, directivity, and space.

Keyword: Soundscape; urban park; visually impaired people.

1. Introduction

An urban park is ideally a place with relaxing atmosphere surrounded by fresh air and calming environment. It is a place where rainwater is absorbed for water conservation. It is also a place where urban communities may escape from the stressful urban activities, a place where the natural soundscape is present. A study showed that people like to hear the natural soundscape as it comforts and calms heart and mind (Yan and Kang, 2005). In Indonesia, urban population grows rapidly and results in the excessive development of buildings and infrastructures to accommodate the population needs. For movement, Indonesians are now assisted by the ease of ownership of motorized vehicles, which increases the number of motorized vehicles significantly. It directly triggers more noise in the surrounding area. In the end, it creates a totally different urban soundscape compared to that of the earlier decades. The rapid turnover causes a significant degradation of the built environment (Schulte-Fortkamp et al, 2006; Ge, 2009; Semidor, 2006).

A soundscape is a surrounding sound experienced by a person in a particular location. In the early decades, the soundscape was a hi-fi (high fidelity) soundscape. It is when the background sounds around us is at a low-pressure level so that people easily hear the type of sounds around them. In the past, natural soundscape was dominant. Nowadays, the urban soundscape has dramatically changed to lo-fi (low fidelity). In the lo-fi soundscape, the masking of sound is very strong caused by a quite loud background noise. In the lo-fi soundscape, people are difficult to recognize sounds, especially when machinery sounds are dominant. Dubois et al (2006) described that people can tolerate the sound of people activities than machinery sound. The unrecognizable urban soundscape caused by machinery sounds may create an uncomfortable and unsafe environment for people. Visually impaired people may be positioned as the most vulnerable here, due to the inability to see the surrounding. The lo-fi soundscape causes visually impaired people difficult to recognize the surrounding.

This condition happens also in urban public areas such as urban parks, where all urban communities gather for calming and soothing. Surabaya is a second metropolitan city in Indonesia with better quality and more percentage of urban parks compared to other cities in Indonesia. Surabaya's urban parks have become a role model for other Indonesia cities. The rapid development of urban parks in Surabaya started approximately the last 10 years when the current mayor was the head of Cleanliness and Landscape Office Surabaya. From only one to three parks, now it is more than 30 active urban parks in Surabaya. The rigorous development of urban parks in Surabaya was highly appreciated by the communities. However, with so many parks, the ideal condition of urban parks in Surabaya has not been fully perceived. Most urban parks in Surabaya are located adjacent to major streets condensed with motorized vehicles with the potentiality of traffic noise dispersion to the park area. It creates lo-fi soundscape within the parks, where natural sounds are difficult to be perceived.

Sighted people commonly mark and enjoy the surrounding visually. It includes the way how sighted people enjoy the urban parks. We mostly slide aside the need for a community with a visual disability who use hearing sense to mark, locate and enjoy the environment. Apart from the audio features that are barely experienced by the urban park visitors, safe and comfortable access to the parks are also an issue of most Surabaya urban parks. There are parks where safe access is unavailable, especially for those with disabilities. Taman Pelangi Surabaya, for example, is surrounded by streets for U-turn. No bridge or underground pathways for pedestrians to access the parks. Even a city park designed specifically for the elderly, namely Taman Lansia is surrounded by major streets where there is no safe access for people to go into (Figure 1 and Figure 2). The use of the soundscape of the visually impaired is interesting since there was soundscape research, but none of them had particularly examined the soundscape of visually impaired people, not even to utilize visually impaired person's capability in soundscaping. Several related soundscape studies were by Botteldooren, et al, 2006; De

Coensel, et al, 2005; Dubois, et al, 2006; Evensen, et al, 2016; Lynch, et al, 2011; Miller, 2008; Nilsson, et al, 2006; Raimbult and Dubois, 2005.

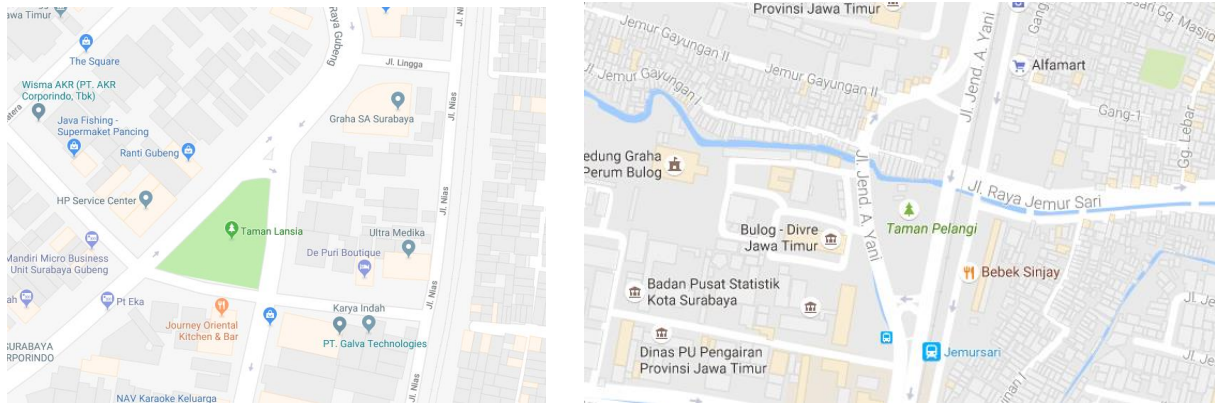


Figure 1. City map of two urban parks in Surabaya namely Taman Lansia (Senior Garden) and Taman Pelangi (Rainbow Garden) that are surrounded by major streets but without appropriate access.



Figure 2. Bird's eye view of Taman Persahabatan (Friendship Garden) surrounded by streets and insufficient access.

Concerning this condition, a project was programmed to invite visually impaired people to participate in soundscape surveys both off-site and on-site (for the later stage). The project focuses on Taman Bungkul, the most popular and most visited park in Surabaya. The soundscape experienced by the visually impaired respondents will be utilized as a tool to map the comfort and safety perception of visually impaired people toward an urban park. The desired environment of an urban park may also be described by their soundscape. Using this approach,

at the end of the project, a recommendation for more habitable urban parks may be borne-out; i.e. a more habitable park for both sighted and visually impaired communities.

2. Methods

At the very first stage, the aim of the project was to collect people's perception of an urban park without necessarily being on-site. This stage was deliberately designed to be off-site to investigate participants' perception of the sonic environment that they have experienced before, for those who already have a chance to visit a park; and to purely collect people's imagination or expectation of an urban park, for those who do not have a chance to visit a park. This stage was conducted using both qualitative and quantitative methods. The qualitative was employed in the first stage using focused group discussion of 2 sighted persons and 2 visually impaired persons. The finding of the focused group discussion was then used as a reference to develop questionnaires for the later quantitative stage. The questionnaire was developed simply in the structure for the ease of the visually impaired to elaborate the question before answering. The visually impaired participants answered the questionnaire assisted by sighted participants who were also respondents in this project (Figure 5). There were two groups of respondents, i.e. group of sighted people and group of visually impaired, and each consists of 35 persons, thus 70 respondents in total. All respondents are within school-age and college-age between 14 to 22 years old. Prior to the questionnaire survey, all respondents were examined of their hearing ability, assuring that they normally perceive sound around them (Figure 3). The hearing test result declared that all respondents are in a normal hearing condition.



Figure 3. Hearing test for both sighted participant (left) and visually impaired participant (right).



Figure 4. The first stage of the project was focused group discussion.

3. Finding and discussion

At the first stage, the focused group discussion was carried out to collect the general perception of urban parks among participants consist of two visually impaired persons and two sighted persons (Figure 4). The focused discussion was led by a question on what comes across the participants' mind when people talk about urban parks. They may describe the park in a word or a sentence or even a paragraph. Both type of participants also expressed the reason for visiting parks or gardens in the city because it is free-entry. They also have a linked activity

prior or after visiting a park, i.e. shopping either for food or other daily needs. From the focused group discussion, some terminologies were borne-out. At this stage, the visually impaired described both “visual” and sonic environment of urban parks with more terminologies that the sighted ones. The findings from the focused group discussion were to be strengthened by the questionnaire stage.



Figure 5. The visually impaired participant (right) was assisted by the sighted participant (left) to describe their perception of urban parks off-site.

At the quantitative stage, the data collected from questionnaires were elaborated using word clouds (Figure 6 and Figure 7). Word clouds were selected due to the capability to identify trends and patterns that would otherwise be unclear or difficult to see in a tabular format.



Figure 6. The terminologies of sonic environment of urban parks by the visually impaired participants in Bahasa Indonesia (left) and in English (right).



Figure 7. The terminologies of sonic environment of urban parks by the sighted participants in Bahasa Indonesia (left) and in English (right).

By the word clouds, we may learn that visually impaired participants described the urban parks’ soundscape with more terminologies compared to the sighted ones (compare Figure 6 and Figure 7). The visually impaired participants explained the sonic environment with 56 terminologies, whilst the sighted respondents explained it with 32 terminologies. It indicates the engagement with the sonic environment is higher for the visually impaired participants compared to the non-visually impaired participants. More interestingly, there are terminologies

of the visually impaired relates to safety, directivity, and space, which are not borne- out from the sighted participants. The terminologies that relate to safety are confused, afraid, dangerous, safe, and worry (5 terminologies). The terminologies that relate to directivity are position, important, near, directed, and confused (5 terminologies). The terminologies that relate to space are oversized, opened, wide, too small, big, full, and few (7 terminologies). The terminology “confused” may be plotted to the sonic environment of both safety and directivity. Interestingly, there was also terminology of “contaminated” which seems not belong to either safety, directivity, or space.

The nearly equal ratio of terminologies (5:5:7) of safety, space and directivity indicate that for the visually impaired participants, the aspects of safety, space, and directivity in an urban park are equally important. With the safety, space, and directivity aspects are 1/3 of the total terminologies perceived by the visually impaired participants, we ideally consider these aspects while improving urban park facilities.

4. Conclusion and Recommendation

The initial study of the soundscape of visually impaired shown that visually impaired person perceived the sonic environment more detail than the sighted person. They perceived sound surround them as a guide to their activities. It indicates and strengthens the finding of the earlier research that sighted people perceived their surroundings more visually rather than auditory (Nilsson et al., 2012 and Jeon et al., 2012). It is an indication that safety, space, and directivity are all similarly important aspects of an urban park for the visually impaired to explore and enjoy the park. Further research to explore the visually impaired person’s perception of an on-site survey is recommended to obtain more data for detailed design recommendation for urban parks improvement.

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