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III. INTERNATIONAL CITY PLANNING AND URBAN DESIGN CONFERENCE

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THE SOCIAL SIGNIFICANCE OF THE SUSTAINABLE URBAN MOBILITY PLANS AND THE DEVELOPMENT OF CONSULTATIVE DEMOCRACY IN CITIES

EFTHIMIOS BAKOGIANNIS, CHARALAMPOS KYRIAKIDIS

Efthimios Bakogiannis

Dr. Urban and Transport Planner – Surveyor

National Technical University of Athens

School of Rural and Surveying Engineering

Department of Geography and Regional Planning

Sustainable Mobility Unit

Charalampos Kyriakidis

c.Ph.D. Urban Design and Planning, M.Sc., Und.Dipl.

National Technical University of Athens

School of Rural and Surveying Engineering

Department of Geography and Regional Planning

Sustainable Mobility Unit

Abstract

The strategy of a city that targets on sustainable mobility is usually related to the global objective for environmental protection or with the aesthetic objective for regeneration of the local urban environment. However, there is an extremely important dimension of the policies for sustainable mobility that hasn't been highlighted as much as it should. This aspect is the stimulation of the interest of the city's inhabitants in the community, the increase of their participation in local decisions, the strengthening of democracy. Dewey had pointed out, from 1927, that invasion and gradual destruction of local collectives and face-to-face communication was the immediate source of instability and indifference that (already) characterized the democratic American society. The inhabitants now choose areas that are away from the old dense and multifunctional neighborhoods, no longer accessible on foot from the city center and with no other land use than residences. Local stores of the neighborhood or the center of the city created a sense of unity and community to the citizens, by representing their own shops, they felt familiar and also

had become a daily social gathering, a component of their local identity. The big scale of urban development limits the person's ability to participate, because the person is unable to get to know the whole of the urban space, but mainly he is mostly unable to follow his evolution. All cities that achieved participation of an appreciable number of citizens in the decisions and their events were small-sized cities. The topic of this paper is related to a specific research question on how the sustainable mobility could contribute towards the building of a consultative democracy in the cities.

INTRODUCTION

Traveling from one part of a city to other is a time-consuming and fatiguing process (Beria and Grimaldi, 2014). But most importantly, it is energy-consuming and expensive (Vlastos and Birbili, 1999; Bakogiannis, et.al., 2014; Tomanek, 2017), since the cities are expanding spatially and the distances are getting longer. As a result, as many urban diffusion phenomena are enhanced, it becomes more difficult for citizens to organize their day-to-day movements and meet, and consequently the variety of activities recorded in the public neighborhood area and their urbanity tend to decrease, while the same is true when it comes to the quality of life of residents (Vlastos, 2004). Internet penetration into the lives of citizens contributes to this direction as people are increasingly seeking virtual contact, utilizing a range of social media tools (Wellman, 2008), in comparison with direct communication, which has traditionally taken place in the public domain cities. The upsurge in the use of social media in recent years, however, must not detract from the importance of another factor, that of the domination of motor vehicles in the streets of cities. Indeed, people, while they move in the public domain, they are surrounded by motor vehicles (Kyriakidis, et.al., 2017; Kyriakidis and Bakogiannis, 2018), without having the opportunity of stopping in order to interact with other citizens (Vlastos , Barbopoulos and Milakis, 2003). Somehow, an antisocial behavior arises and anxiety is created on movements (Kenworthy and Laube, 1996). The Traffic planning, unconsciously, has become a basic parameter of social organization of cities (Vlastos, 1993), in which the human presence, is no longer visible, in contrast with the presence of cars. Political decisions of another era were those that contributed the change of sections of European cities. Some neighborhoods and their suburbs instead of being designed with the logic of their centers, creating mental images that seem to have sprung from paintings, a view that Baudrillard (1986/2004 in Mantas and Defner, 2017) underlines for the European city, are designed with the emphasis on motorized traffic.

On the contrary, the Sustainable Urban Mobility Plans (SUMPs) aspires to change the current reality and to create an environment that favors social contact as the foundation of democracy. According to Rupprecht Consult - Forschung & Beratung GmbH (2016), SUMPs are Strategic Plans, based on existing planning practices, and taking into account the principles of integration, participation and evaluation in order to meet the needs of mobility of people, today and in the future, for a better quality of life in cities and their surroundings. According to Jans Gehl's (2010) book entitled "Cities for people", modern urban design principles require the integration of the human dimension as a prerequisite that SUMPs attempt to achieve and they aim not only to adjust the city's profile in landscaping terms, but also to influence citizens' attitudes in a way that promotes more responsible mobility behaviors and diminishes car-dependency. The four principles outlined in Gehl's 2010 book ensure that human activities are concentrated in developed structures while the fifth principle relates to improving the quality of the urban area to extend the time that people spend outdoors.

In this context, a number of organizations, internationally, promote the idea of switching to cities more independent from the car and more compact, since as an urban model compact city is considered to be more sustainable (Barbopoulos, Milakis and Vlastos, 2005; Portokalidis and Zygouris, 2011; Lim and Kain,

2016; Mouratidis, 2017; Kyriakidis and Iliadis, 2018). The European Union, in particular, promotes the implementation of SUMPs through a series of guidelines, such as the 2007 Green Paper "Towards a New Culture for Urban Mobility", the 2011 White Paper "Roadmap to a Single European Transport Area - Towards a Competitive and the Resource Efficient Transport System, and the 2014 Draft Report on Sustainable Urban Mobility, while they are still remaining high on its agenda through new financing mechanisms (e.g. the new Financial Framework of EU about Research and Innovation "Horizon 2014-2020", which finances both SUMP actions and actions to implement sustainable energy mobility). Indeed, an announcement of the European Commission (913 / 17.12.2013) signalled the mandatory enactment of SUMPs to small and medium-sized cities in the Member States. It is estimated that SUMP may be a requirement for the disbursement of urban transport resources (e.g. infrastructure projects, "clean" buses, ITS systems, etc.) and their implementation should therefore be addressed as an opportunity to acquire more sociable cities.

DESIGN OF URBAN MOVEMENTS BY CITIZENS FOR THEIR OWN BENEFIT. IS IT POSSIBLE?

Democracy is a political system aimed at a society that considers each person's individual views to be of importance for political decisions. It requires people to appreciate the view of their neighbor, to know him, to understand him. There are two basic considerations about democracy: the one is as a field of confrontation of ideologies and views with the aim at the dominance of the most correct ideology and the other one is as a field of synthesis of ideologies and views with the aim of creating the right policy. The second approach, also known as a consultative democracy, is clearly more difficult to be achieved in modern cities, but it is that form of democracy which is clearly capable to mobilize today's citizens who are distant from the politics, giving them a real opportunity in policy-making and they cease to be proverbial interlocutors when it comes to validate premeditated decisions. At the same time, it gives them an incentive to devote time for developing a collective conscience that must exist between citizens and enables them to arrogate the final decisions and to claim with greater force their realization.

This research paper deals with the way in which SUMPS can contribute for developing a consultative democracy in cities. Although this assertion could be strongly criticized, on the one hand because SUMPs are a spatial planning tool and on the other hand because it can be considered that such a form of democracy is not possible, on the contrary, it is necessary to investigate this issue for two reasons:

(a) It is not just a typical spatial planning project but a single policy plan where the citizen is invited to participate actively in its implementation and to take note of what is proposed.

(b) In the history of the European city, cases of consultative democracy with the public space or some "third places" have been recorded as areas of social and political expression. The cases of "The Speaker's Corner" in Nottingham, UK (Kyriakidis, 2016) and the political cafés in France (Berenson, 1984; Rigogne, 2014), where the exchange of views was a key issue for human interaction, are characteristic.

Therefore, the question is how SUMPs can contribute to this.

HOW CAN THE SUMPS ACTIVATE THE CITIZENS?

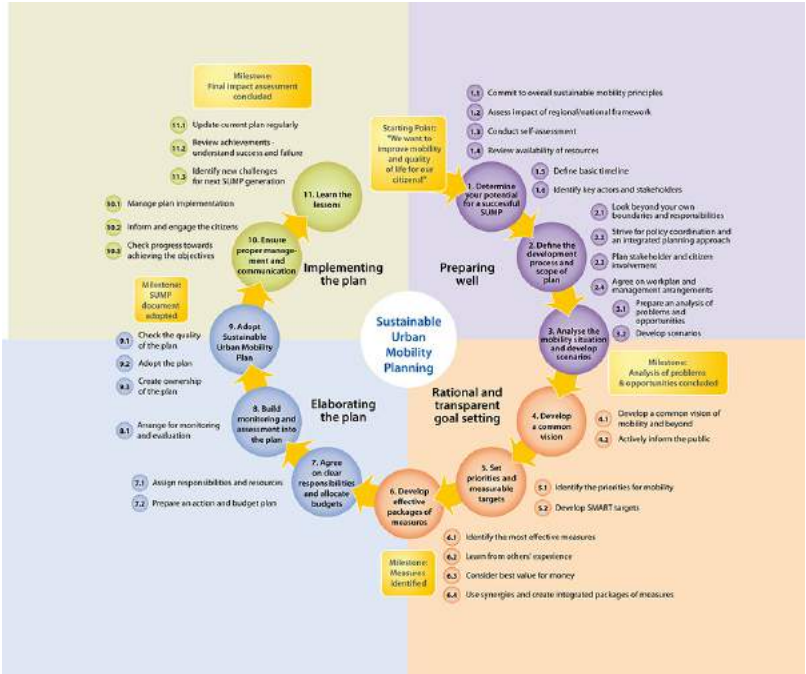
As discussed above, a key issue is the way in which design tools like SUMPs can activate the public, promoting the development of consultative democracy. The question was approached bibliographically focusing on how to organize and implement them.

In assessing, objectives of SUMPs are to produce a new urban environment (DIez, et.al., 2013) and thus, citizens should have the opportunity to participate in something so important for their city and their lives in it. The parallel linking of the urban environment with a number of issues such as health and air quality,

which are key points that are expected to be improved following the implementation of a SUMP through interventions such as the promotion of physical exercise and the bicycle for urban travel, is an issue that enhances social participation in the planning process (Shokoohi and Nikitas, 2017; Skagiannis, Goudas and Rodakinias, 2017).

The spatial reference of these specific projects at the level of municipalities or functional units is another parameter that enhances the possibility of participation of the inhabitants because, according to Vlastos (2004), in order to interest and involve residents in specific projects in their city, they must know their city, and the scale of reference should keep their interest alive. In the new approach that comes to the fore in the context of the implementation of the SUMP, the scale of design approaches the scale of the citizen. There is a shift from all the cities or metropolitan areas that have been studied by a group of transport engineers, assisted by a team of city planners with the aim of facilitating the flow of traffic, and currently the focus is on upgrading the public space by creating green routes, pedestrian paths, united public areas, cycling routes and many infrastructure projects for mild movements with a centre on the neighborhood. This design which is based on the policy of integrated urban regeneration, is based on the collaboration of teams composed of both transport and urban planners as well as architects, topographers, social psychologists and geographers. Already the scientific "opening" of new specialties reflects the tendency of the SUMP inspirers to integrate citizens into the design process. Indeed, it is the city's inhabitants and visitors who are called upon to approach the above issues, identify the problems and give their own solutions to them. Specialized analysis tend to be more comprehensible to the public, by illustrating indicators and statistical analysis where necessary, and by removing one-dimensional approaches based on mathematical models, load numbers and motor vehicle flows.

Strengthening the role of neighborhoods street segments in the same direction. In fact, through the SUMPs, integrated programs are being promoted. Through the urban regeneration of road axes or the addition of new public transport links, the spontaneous development of local centers is possible, by attracting leisure and commercial land uses and stimulating the social character of neighboring public spaces (Nobis, 2010). The neighborhood acquires a collective identity, enhancing human contact. All means of sustainable mobility (pedestrian, bicycle, collective means of transport) enhance social contact between people in the same neighborhood (Saelens, Sallis and Frank, 2003).



These issues raise, from the outset, the importance of public participation in the process of implementing a SUMP. However, this is made even more apparent by observing the stages of implementation of a SUMP, which are presented in Figure 1. It is necessary for the team of experts to communicate with the stakeholders even for the early stages of a SUMP implementation (Step 1.6), in order to identify conflicts and identify prior to how they may affect the planning process. In this context, the study group is invited to organize the way of community engagement (Step 2.3), which can be based on a set of traditional and innovative methodological tools. The first results of this active participation are already evident from the second planning phase, where the team of experts and citizens develop a common vision as well as ideal planning scenarios (Steps 4.1 and 4.2). In the third stage of the SUMP, residents are now called upon to present their ideas to practitioners that will generate effective and ideal measures for the SUMP (Step 6.2). Securing high quality interventions is, in the fourth part of the project (Step 9.1), the key demand for this practical public participation in the planning process. Indeed, engaging the people is a requirement for local authorities to be assured about the acceptance of proposed measures (Step 10.2). Finally, people participates as an active indicator on the progress towards and monitoring of SUMP objectives.

The above points highlight the importance of establishing an open procedure where all residents of the cities or functional units that produce SUMP are eligible to participate. However, in order to better coordinate planning, it is necessary to identify key stakeholders and primary stakeholders. The reason for this is to focus on identifying possible conflicts or alliances that can make a significant contribution to the progress of the design process. Typically, such examples may relate to the diversification of the scope of the design and the type of interventions related to the availability of resources. The procedures that are used to implement this action include:

Identification of stakeholders as well as their dynamics and goals.

Determination of weaker factors that may be required to be strengthened in the course of the process.

Attempt to develop alliance design with the aim of avoiding, as far as possible, conflicts with local entities that may affect a large part of the public to overturn the SUMP forecasts. At the same time, through alliances with strong local entities, such as cycling, sporting and landscaping clubs, parishes, professional associations and citizens' associations, an easy planning of a simple strategic co-ordination of the potentially involved entities can be achieved and promote easily the process.

Development of strategic participation and coordination between stakeholders. Such a strategy should be developed after studying the profile of the population groups involved, so that the tools to be used and the way the coordination is done will find the best results. In order to obtain the profile of the groups it is necessary to study their demographic, social and economic characteristics.

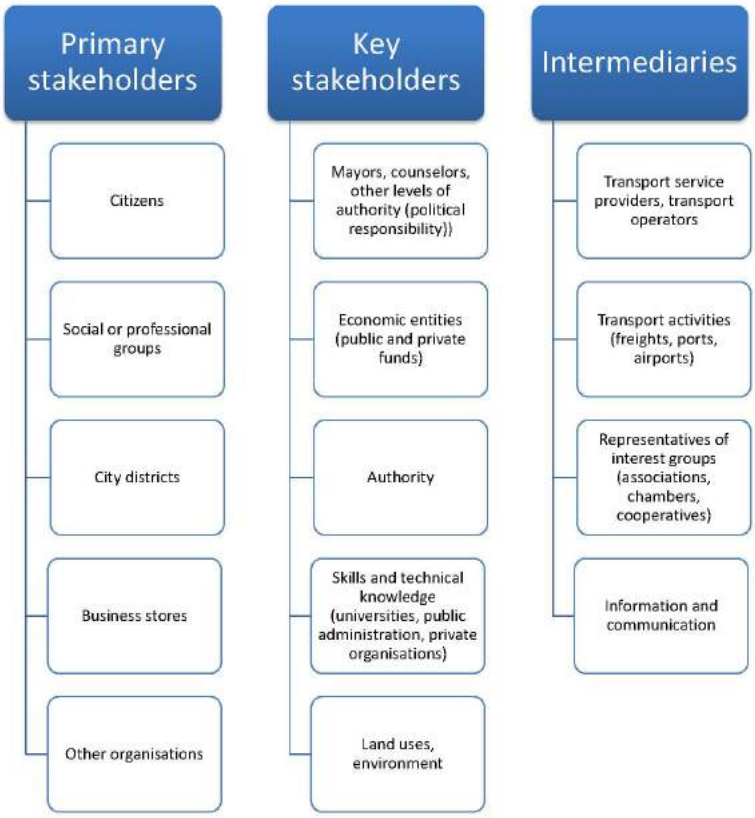


Figure 2 shows diagrammatically the stakeholders involved in the process of implementing a SUMP. To promote consultative democracy, however, as noted earlier, the focus is on the citizen as an individual and the way in which he can participate in the planning. So far, reasons have been given to motivate each individual citizen to do so, as well as the design phases in which this can be done. In the next section there are two tools, which have already been used in cases of SUMPS in Greek cities, which contribute to the promotion of consultative democracy.

4. CROWDSOURCING AND CONSULTATIVE DEMOCRACY

In recent years, the European Commission has established a series of projects that are based on crowdsourcing techniques. In these projects, citizens have been used as "sensors" (Pödör, et al., 2015). Indeed, in many recent projects across Europe, people contribute to the provision of geospatial information (Stojanovic, Predic and Stojanovic, 2016), through the use of mobile devices such as smartphones (Ganti, Ye and Lei, 2011; Xiao, et.al ., 2013; Bizjak, 2012 in Papadopoulou and Stratige, 2014; Pödör, et al., 2015), without bearing any costs to the institutions that evaluate and analyze it (Schweizer, et al., 2011). These projects are mainly associated with the collection of environmental data as a result of the ratification of the Aarhus Convention (UNECE, 1998); and its integration to the European legislation (Directive 2003/35/EC), where the need for access and participation of citizens in decision-making processes with an environmental footprint, is stressed (Bakogiannis, et.al., 2018).

In this model, citizens can participate in the process of analyzing the current situation in the study area by collecting data using their smartphones. These data may vary. Typically, as mentioned above, the use of

such techniques focuses on collecting environmental data, such as noise levels and air quality. In four cases of municipalities in Greece implementing SUMPs (Municipalities of Zografou, Kallithea, Kozani and Drama), direct data collection process by volunteers took place for these two types of data, to exploit on the one hand the understanding of the current situation and, on the other hand, their use as indicators before and after intervention. In the case of noise data recording, the Sound Meter app was used, while in the case of air quality data recording, the free HackAir app was used (Bakogiannis, et.al., 2018). The number of volunteers participating in each city varied according to the specific characteristics of the city and the time constraints for the implementation of the project. However, given the fact that the degree of reliability of collected crowdsourced data is of great significance, as there is a lot of discussion in terms of crowd sourced data quality (Apostolopoulos, et.al., 2016), it is proposed that the number of volunteers to be as large as possible. Thus, the data will be more reliable and public participation will take place to a greater extent. For this reason, a range of tools can be used to attract volunteers, such as social media campaigns, which, according to Dimitriadis and Tzortzakis (2010), are essential tools for the successful completion of modern information campaigns.

Another method that can enhance the direct and active participation of citizens in the design of a SUMP is the development of a crowdsourcing web-platform. This action is another crowdsourcing practice. Citizens are not required to collect data, but to provide ideas on the plans to be implemented in their city (Bakogiannis, et.al., 2018). In this way, residents are invited to contribute to the analysis of the existing situation after providing ideas, identifying specific problems. Such applications have been implemented in many overseas countries, with examples being the CityMakers platform in Paris and the Nexthamburg platform in Hamburg. In the four municipalities mentioned above, 264 users participated overall, in the platforms that were constructed, and presented a total of 166 ideas, which they organized under specific thematic categories, like: walking, cycling, public transportation, urban green spaces, fleet management, e-mobility, urban planning, etc.

Similar actions have been designed to apply to the municipality of Rethymnon in Crete, where the SUMP implementation process has begun. The results of this case, combined with the results of other cities when the participatory processes will be completed, are expected to give a clear picture of how and how far consultative democracy has been promoted in local communities. In any case, the results so far show a clear interest from local communities in participating in the decision-making process with SUMP playing an important role in this. It seems that the new design model can work so effectively that future practices can also be applied to urban planning and design so that the projects proposed are fully responsive to the needs and attitudes of the inhabitants.

CONCLUSIONS

SUMPs consist of planning tools for the cities' public spaces with an emphasis on transportation choices, which has been significantly promoted in recent years in the framework of the European Union's policies for a compact and sustainable city. In Greek cities, SUMPs are another challenging new concept that, although accepted in theoretical terms, in practice they have not yet been implemented through organized interventions. For that reason, the current timing is the most appropriate for exploring a series of issues related to how citizens should be involved in the planning process.

Taking all the above into consideration, as well as the low level of active participation of the citizens in the planning process, the question that was dealt with in this research paper is whether through SUMPs it is possible to promote active community engagement in the implementation of projects and through it to cultivate consultative democracy. This question is particularly important in case of Greece and several

European countries, where peoples' engagement is limited to accepting or rejecting some design solutions through formal consultations and is not expressed in a more active way.

In order to investigate this question, a literature review, a study of good practices and Greek cities case studies implementing SUMPs took place. From the above, important conclusions emerged that can be summarized as follows:

Consultative democracy is based on the synthesis of ideologies and opinions in order to formulate an appropriate policy. This, although traditionally done through live discussions, in the case of the SUMP, it is proposed through a web-platform that strengthens the personal view. In the next phase, the dialogue could be further enhanced through the ability of one user to respond to another, because so far, the platforms in the cities presented did not provide such a potential. Even so, however, there is dialogue and free expression of every interested citizen, which is an essential aspect of consultative democracy.

In democratic regimes, each member has the right to say and to design and participate in the planning that is made for him. This is done through procedures of direct collection of data from volunteers. As a volunteer, any interested citizen may express interest and the process is very simple. In this way, he is actively involved in the design, which he understands best, just like the current situation while before he was just an observer of what is proposed for his city. Thus, it is easier for him / herself and his / her social environment to understand specific design solutions that may be suggested by the team of experts.

In addition to the above points, which demonstrate two ways of strengthening consultative democracy through SUMPs, the objectives and the object of these projects are the central elements in proving this case. The emphasis on the human scale and the neighborhood, and the implementation of proposals through projects that are readily perceived by every citizen is a key parameter that makes SUMPs an opportunity to strengthen the active role of citizens in the day-to-day life of the city. Similarly, if public participation was the same in a traffic study that would be more spatial, the result that would come from the social point of view would not be the same.

As a result, SUMPs are an opportunity to capitalize the knowledge of promoting active social engagement. The use of a range of innovative tools, combined with traditional tools, can help to maintain the sense of participation in the SUMP design process and enable citizens to participate in collectives and voluntary actions.

The above proves that although the issue of traffic and urban planning, as proposed to be combined through SUMPs, can have positive effects on the social aspects of local communities as well. Although, as a first step, the objective of public participation is to accept interventions and to promote successful planning measures, it is ultimately found that the result may be wider for the collectives involved. Therefore, the conclusion that emerges from this overview of the issue is that consultative democracy can be promoted through the implementation of a SUMP; however, there should be a coordination of actions in order to activate the public and diffuse knowledge and information.

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CAPTIONS OF VISUAL MATERIALS

Figure 1. The SUMP planning cycle. Source: ELTIS, 2013.

Figure 2. Schematic representation of participants involved in the process of implementing a SUMP. Source: Lever Consulting 2018

SYMBOLS AND ABBREVIATIONS

SUMP: Sustainable Urban Mobility Plan

EC: European Commission

CONTESTED OR EMERGING HERITAGE: CONTEMPORARY REFLECTION ON THE SOCIALIST CITY LEGACY

NEBOJŠA ČAMPRAG

NEBOJŠA ČAMPRAG, PhD, Faculty of Architecture, Technical University of Darmstadt, Germany

Abstract

This paper aims to reflect on the current approaches that recognize values of the socialist legacy in the cities of Central and Eastern Europe (CEE), after three decades of comprehensive socio-economic and spatial transformation processes. Special focus has been put on two contradicting processes that run in parallel. The first considers relative spatial domination of socialist spaces and constructions within urban tissues. These are often the results of lavish dimensions and particularity of stylistic expression, that makes specific influences on the contemporary production of urban imaginaries and thereby, also on urban identification. The second process assumes an intense erosion of these spaces/cities, occurring through firstly, reinterpretations of national and urban identities and values, and secondly through post socialist urban restructuring propelled by neo-liberal ideology. Both of the approaches further show an imposition of a new understanding of previous formulations, aesthetics and uses of socialist built (urban) space. By placing specific focus on four capital cities from the CEE region (Budapest, Belgrade, Bucharest and Berlin), this study demonstrates the diverse interests and approaches dealing with socialist legacy. In addition, the study also highlights the complexity in the process of recognizing values of the cities' socialist past and further inclusion within the new urban and national construct of identity of the CEE countries.

Keywords: Socialist city, socialist heritage, heritage contestation, identity building, Central and Eastern Europe

Introduction

As an irreplaceable, finite and non-renewable cultural asset created by the past generations (Jokilehto, 2005: 25-26), built heritage largely contributes to recognisability, uniqueness, and local context of contemporary cities, and also serves as a key economic resource and a vital element in the construction of collective and place identities (Martínez 2008; Rossi 1973). However, identity creation and its fixation within the built environment has also been demonstrated as being extremely fluid, contested and never an entirely finished process. This is particularly relevant in the context of the former socialist countries of Central and Eastern Europe (CEE), engaged in an intense process of reconsidering heritage, redefining national identities for their citizens, and also for the wider international audience, since the fall of state socialism (1945-1989).

During the last two decades, urban scholars have shown an increasing interest towards the political, economic and cultural restructuring of post-socialist cities, which has resulted in their inclusion into the "Western" urban theory. However, the notion of a socialist city, describing particular spatial characteristics that are sufficiently pronounced to help differ certain cities from their counterparts in the capitalist world, remains rather controversial. While the intention of this study is far from questioning or further expanding existing debates on the adequacy of this term (see Hirt 2013; Kollmorgen 2013), the study does adopt the perspectives of the so-called "historical school" of thought (Castells 1979; Harvey 1973). These perspectives consider autonomous constructs of both—the socialist and the capitalist city, which are a result of the different ways of functioning of political economies in socialism and capitalism (Kliems & Dmitrieva 2010; Stanilov 2007; Berki 2014). Furthermore, the temporal aspect of the concept, involving decades of shifting away from former ideologies, state controlled stylistic expression and, the methods and objectives of socialist planning principles diminished the earlier gap between the former socialist city and its Western counterpart to a certain degree (Berki 2014; Hamilton et al. 2005). Potential values of the socialist legacy haven't been adequately recognized or mobilized in most of the initial strategic approaches for urban identity (re)construction, despite a considerable size of existing built structure within the CEE region. The exact dynamics of such complex links between urban space, representation of cities and post-socialist identity formation still remain rather questionable.

Therefore, this paper aims at narrowing the research gap, on the ways in which the perception of the legacy of socialism developed in cities of the CEE region after three decades of comprehensive socio-economic and spatial transformation processes. The main questions are namely, to what extent do the above-mentioned approaches on socialist legacy still contribute to its contestation, has the process of socialist legacy emerging as new urban heritage already begun and what benefits such a shift might have on the further development of the post-socialist city. In addition, this study primarily relies on secondary sources and focuses on the cases of four national capitals – Budapest in Hungary, Belgrade in Serbia, Bucharest in Romania, and Berlin in Germany (fig. 1). The focus on national capitals is justified by the particular importance these cities have generally demonstrated within the process of collective and place identity creation (Light & Young 2013).

The first section of the paper presents an overview of the shift from state socialism to capitalism and highlights its major implications at the urban level in the CEE region. The second part scrutinizes the main features of the built legacy from the state socialism era and presents a general overview of its evaluation and treatment during the transition period. The following section discusses this particular legacy from the perspective of contested and emerging heritage in the selected capital cities of the four CEE countries. Lastly, the paper concludes with a reflection on perspectives and benefits that a shift in the perception of built legacy might offer to the future development of the post-socialist city.

Transitioning from state socialism to capitalism – implications of identity (re)construction in the CEE region

Although politically linked by the Warsaw Pact, the Eastern Bloc was intrinsically heterogeneous. The so-called Satellite States in the CEE region (Poland, Czechoslovakia, Hungary, Bulgaria, Romania, East Germany) had somewhat limited sovereignty, and were generally governed by quasi-independent authorities (fig. 1). However, as an exception from the pact, the Socialist Republic of Yugoslavia managed to develop a self-management system that placed greater importance on market-type economic relations. Some CEE countries therefore enjoyed greater political or economic freedom, while others were characterized by a totalitarian system. The former, rather strong unitary domination of the Soviet influence and power didn't eliminate the heterogeneity of the region, which was further reflected in the

diverse ways of identity (re)construction in the present day CEE context (Banaszkiewicz, Graburn and Owsianowska, 2017).

Figure 1. The CEE region – political map with locations of selected cities

Moreover, contrary to the high heterogeneity in the region, the common concept of a socialist state possessing unprecedented power, strongly dictated and influenced the way in which cities were planned, developed and represented and directly aimed at creating new forms of society (Stanilov 2007; Kliems & Dmitrieva 2010; Tscherkes 2014; Bater 1980; de Betania Cavalcanti 1992; Dawson 2018; Stenning 2000). Immense importance was placed on the elimination of differences that eventually led to social, economic and spatial homogenisation – a process scholars defined as homopolitanisation, which became one of the major characteristics of the socialist city (Berki 2014). However, during the last three decades, complex transformations occurred namely from communist totalitarian to democratic political regimes, and from centrally planned to market economies; demonstrating an equally significant influence on the urban level (Stenning 2003; Hamilton et al. 2005; Sýkora 2009). The reverse process of extremely rapid heteropolitanisation instead led to an increase in the complexity and heterogeneity of cities, in both social and spatial terms. However, with hetero/homopolitanisation being a significantly slower process, the changes in the built environment could not follow the rapidness of socio-political changes. Additionally, urban space and identity construction ended up becoming rather questionable and possibly even neglected aspects of the transition process (Sýkora 2009; Stanilov 2007). Young and Kaczmarek state that "(…) post socialist transformation in CEE involves a further remaking of place identity at a range of scales to legitimize new political and economic trajectories and to create places as suitable for integration into regional and global networks and flows" (Sýkora 2009). Thus, the creation of new identities in the CEE region during the post-socialist transition came under the profound influence of a neoliberal doctrine, while representation of the socialist pasts in such ventures remained largely a matter of contested discourses. A shift from state control towards a range of diversified private sector interest and changing market rules, finally demonstrated several uncertainties and a general lack of vision for the post-socialist city.

Numerous initiatives within countries of the region aimed at creating a "better" past and did so by changing names of cities, buildings, streets, squares and parks; changing the use of former socialist public buildings; restoration of formerly destroyed historic and sacral buildings, and removal or even destruction of the socialist symbols, monuments and buildings (Banaszkiewicz et al. 2017). This so-called "decommunization" of urban space (Ágh 1998; Young & Kaczmarek 2008) was aimed at intentionally erasing the socialist past, rejecting associations with the East and emphasizing connections with Western Europe. Furthermore, the most common strategic approach frequently involved prioritizing "European-ness" by turning towards the pre-socialist urban and national pasts (McNeill & Tewdwr-Jones 2003;

Gospodini 2004). Additionally, recasting of post-socialist spaces was also performed through the process of internationalization and westernization respectively. Nonetheless, the decommunization of urban space demonstrated a great diversity of strategic approaches, manifesting in varied forms and success rates. This process can be illustrated with cases from the chosen cities namely—CEE cities looking back on their pre-socialist "Golden Age" history chapters like Banská Bystrica, Łódź or Leipzig (Bitušíková, 1998; Kaczmarek and Young, 1999; Coles, 2003; Munasinghe, 2005); adopting strategies for rebranding through culture; as was embraced by Krakow in 2000 as European City of Culture (Cochrane & Jonas 1999), opting for comprehensive architectural remodelling, seen in the case of remodelling Berlin by major international architects (Crowley 2003), the transformation of Warsaw into a 'Western' European city (Czarniawska 2002; Petro 2009); and lastly, through espousing former urban governance approaches (Paddison 1993; Kearns & Philo 1993; Short et al. 1993).

Moving further, after about a decade of transitioning to democratic societies, both national and international interest in socialist heritage started rising slowly, culminating in the official recognition of socialist legacy due to the efforts of a number of heritage experts and scholars. As an illustration, European expert meeting of ICOMOS, held in 2013, discussed the feasibility of an international serial nomination of monuments and sites in post-socialist countries for their inclusion in the UNESCO World Heritage List (ICOMOS, 2013). A tentative list of almost 1,600 proposals from 172 states was thereby submitted for consideration. Besides, the most important role in rehabilitation of socialist heritage was probably the dynamic development of the trends within tourism industry, which is the most important sector of economy using heritage as a resource (Porter, 2008). An important breakthrough for its rapid development was the accession of new countries to the European Union, and their further inclusion in the Schengen area that also facilitated international mobility (Banaszkiewicz et al, 2017). The so called "communist heritage tourism", as Light highlighted, is "the consumption of sites and sights associated with the former communist regimes" in contemporary CEE (Light 2000: 157). Its development, on the one hand, could enable necessary growth of income for the post- socialist economies, burdened by the transitioning process. On the other hand, tourism could also play a potentially significant role in the process of identity (re)construction, considering that each country sought out to present their unique identity to visitors and to promote themselves in a way to emphasize their sense of a national identity (Hann 2012).

Contrary to the positive aspects that development in the tourism sector demonstrated in the CEE context, the rising interest in heritage of the socialist era could also be viewed as obstructing, with regards to identity construction based on nostalgia for the pre-socialist history chapters. In the core of this paradox was persistent contestation of history chapters from the socialist era that continued even after its appropriation and revival solely for touristic purposes. In a situation when economy verses identity construct, the priority for the CEE countries to place the communist period behind them was being overshadowed by the resource that enabled tourism to become a source of revenue (Tunbridge 1994). An emerging challenge therefore, was to not only to find ways of accommodating the rising tourist interest, but at the same time not to compromise the construct of post-socialist identity. Another prevalent paradox was an opposite phenomenon that could be noticed in some CEE countries. Sentiments and nostalgia for socialist times started to emerge, especially in the case where the socialist state had disappeared. Such examples were the so-called 'Ostalgie' in Eastern Germany, as an alternative approach to the dissolution of negative associations with the legacy of the former GDR (Oyer 2004; Campbell 2015) or 'Yugonostalgia', that could be traced in some successor-states of the former SFRJ (Bošković 2013). Hence, these opposing phenomena shed a light on the complexity of and within the politics of national

identity (re)construction in former socialist countries, as well as an existing complex relationship of communities in CEE to their socialist pasts.

The following section of the paper examines the phenomenon of contestation, production and rehabilitation of socialist heritage for the purpose of construction of an urban and national identity in greater detail, with the help of four capital cities in the CEE region chosen as case studies.

Contested or emerging heritage: socialist legacy in Budapest, Belgrade, Bucharest and Berlin

Removal of the socialist past through relocation of its iconography – the case of Budapest, Hungary

As a rather particular case, Hungary after the World War II experienced a hard-line Stalinist regime, followed by gradual liberalization in the late 1960-es. Large-scale socialist interventions in the capital city of Budapest were mostly performed in the form of large housing estates in the peripheral districts, while the inner city was mostly spared the radical changes. Nevertheless, the most visible aspect of socialist intervention assumed aggressive ideological campaign that included massive public display of revolutionary symbols, for which urban fabric of the inner-city was extremely convenient. Intended to serve as a constant reminder of solidarity and gratitude to the Soviet Union, such iconography quickly started to suffer from a great disjunction between their inscribed meanings and the significance attached to them, thereby turning instead into symbols of unwanted external control (James, 1999). One such example was the nine-meter tall statue of Stalin, symbolising the vast Procession Square (today *Ötvenhatosok tere*) as a representation of Soviet domination in Hungary, which was toppled over during the uprising against the communist government in 1956.

Figure 2. The Memento Park in Budapest: branding of the socialist past

Sources: http://visitbudapest.travel/ (l); http://gotohungary.com/ (r)

Additionally, during the early transition period, Budapest faced many challenges. Its rather quick re-acceptance among the "Western cities" brought about not only sudden physical and social upgrading of its inner-city neighbourhoods, but also gentrification and suburbanization in surrounding settlements (Tosics 2004; Kovács et al. 2013), leaving a number of industrial areas in state of decay. The remaining revolutionary symbols in the central neighbourhoods did not provide an adequate image for a Western city, or imaginary for re-establishment of urban and national identity. Furthermore, the removal of Stalin's Statue from its representative urban environment might have also served as an inspiration for destruction or removal of a number of monuments immediately after the fall of socialism, while over 300 streets, squares and parks were renamed and ended up regaining their historical names (James 1999; Light 2000). Finally, the Statue Park Museum or the Memento Park (*Szoborpark*), established in 1993 on the outskirts of Budapest, was intended to become a repository for the city's monuments to socialism (fig. 2). The relocation of the monuments was clearly aimed at radically destabilizing their initial intended meanings that could be conveyed to the public only within their original urban settings. One of the rare exceptions to more than forty removed statues and monuments was the Liberty Statue on the prominent *Gellért* Hill. Although damaged during the decreased public sentiment towards the Soviets, the monument remained on its original location probably due to the authorship of a prominent Hungarian sculptor, attaching it with a strong national connotation. It also provided a convenient symbolic representation of Hungary as a victim of occupation by Nazi Germany during the World War II, although the crucial for its retention was the change of the original inscriptions, in which Soviet victims were replaced by all human sacrifices made for the freedom of the country. Through such modifications and reinterpretations of its meaning, the monument was largely stripped of the former message it aimed to convey, which finally even appropriated its performance as a prominent feature of Budapest's cityscape, despite being an exception.

After the initial swing in removing socialist revolutionary symbols, years of difficult economic transformations and hardships of privatization slightly redefined the general attitude towards socialist egalitarianism. Concurrently, public view on the prior removal of communist monuments also changed. Many residents of Budapest started believing that the monuments should have been left at their original locations, as authentic markers of their historical period. Their relocation was increasingly seen as an unnecessary public expenditure, considering that they had lost their original meanings a long time ago (James, 1999; Light, 2000). Additionally, in the immediate post-communist period, Budapest experienced a tourist boom with the Memento Park showing considerable tourist appeal (Light 2000). A life-sized copy of the Stalin Monument with the broken bronze shoes on top of the pedestal was built in 2000s, along with a new exhibition hall and a small movie theatre. Furthermore, a gallery that opened within the National History Museum in 1996 interpreted the pre-transition post-war period as just another closed chapter in Hungary's history, probably as a result of these early advancements. The change in the attitude based on a tourist perspective, could have facilitated the forthcoming process of rehabilitation of the socialist past. As a unique museum in the CEE today, the Memento Park has been rapidly established as one of Budapest's most unusual tourist attractions and a new urban brand (fig. 2: r), and has been listed among the top choices for historic sites in Budapest by "Lonely Planet", the largest travel guidebook publisher in the world.

Assimilation of socialist heritage into the new urban fabric construct – the case of New Belgrade, Serbia

The official national identity in the communist Yugoslavia was constructed on an ideological vision of the common future, rather than on ethnic, political and cultural characteristics of the constituent nations (Haug 2012; Jović 2004). Belgrade, as the federal capital between 1945 and 1992, was subjected to

significant efforts that supported national unity and represented all the Yugoslav cultural and political identities (Apor 2014; Makas & Conley 2009). The most important intervention resulted from a vision for the new federal capital that later became one of the largest modernist cities in Europe (Blagojević 2014). New Belgrade (*Novi Beograd*) was unusually designed as a particular mixture of socialist planning and international modernist style, conveniently selected to transfer the ideology driving the project due to a lack of references to any particular nationality. Contrary to much enthusiasm, the huge scale of the project also made it a very expensive enterprise. However, planned constructions of government, state and diplomatic buildings along the central axis have never commenced, except for few landmarks–public buildings on prominent locations. The envisioned representative new capital that would belong to the people of entire Yugoslavia gradually became a predominantly residential suburb, with a serious lack of cultural facilities, schools, shops and other public services (fig. 3: l).

Figure 3. New Belgrade: stylistic uniformity (l) and introduction of new symbols (r; socialist Genex Tower, with a church in Serbo-Byzantine revival style in the foreground)

Sources: https://sr.wikipedia.org/wiki (l); http://belgradeguide.info/ (r)

After the fall of communism, Belgrade confronted a number of problems, caused by poor economic situation and international isolation of the country during the war years. Waley (2011) considered that the fate of New Belgrade that was never completed mirrored the social change that had started after the fall of Yugoslavia. The initial problems of low maintenance and general stagnation continued during the NATO bombing in 1999, when a few rare landmark buildings were damaged. Most significant damage was the partial destruction of the so-called “CK building”, being the former symbolical representation of the power of Yugoslav Communist Party. The extensive modifications to the urban tissue in New Belgrade to accommodate a new and radically different consumption-oriented system commenced only after the fall of Milošević’s regime in 2000, when Serbia started following a path more similar to other CEE countries. Remnants of the socialist city i.e. vast open urban spaces made it particularly prone to the appearance of neo-liberal built landscape, filling in nearly all the remaining empty plots and radically changing its functional structure and cityscape. Some prominent landmarks from the Yugoslav era that maintained previous visual dominance due to its size and location often lacked genuine recognition, e.g. the partially deserted or dilapidated Genex Tower (1980) that contrary to its outstanding features of brutalist architecture still doesn’t enjoy any level of preservation (fig. 3: r). Other socialist landmarks have been largely reconstructed and rebranded, such as Yugoslavia Hotel that reopened as a casino, or the damaged CK building that turned into an office tower. Some new landmarks were also introduced in the 1990s, such as the first church or a large multi-purpose arena, but they only further reflect the major socio-economic changes (fig. 3: r). Finally, with the massive construction of vast business and shopping complexes during the 2000s, the urban space went through an even more radical reconfiguration.

Thus, in the present day, New Belgrade could be considered as a highly unusual monument of discontinuity in planning and development. Many scholars and professionals have further criticised the general lack of appropriate regulation and see it as bluntly filling in the space under the pressure of new commercial use (Waley 2011; Maric et al. 2010). Contrary to its size and importance, there still have been no attempts to preserve any of its parts. The government clearly sketched out a vision of New Belgrade as a business centre in the 2021 Master Plan, however, its current track of development and transformation have not been recognized as problematic. Minimal consideration has been provided towards the nature of the surrounding urban landscape, and a lack of adequate recognition of New Belgrade as an important monument to modern urbanism can be said to be a result of—the failings of modernist urbanism, the shortcomings of socialist urbanism and also due to the failure and collapse of Yugoslavia (Waley 2011). Contrary to rising urban problems such as social- and an overall sense of fragmentation, New Belgrade has miraculously maintained its popularity amongst a significant number of residents, mostly due to its location, rising diversification of urban functions and relatively faded former symbolic representations. Also, evident has been the rising tourist interest for both Yugoslav socialist (especially modernist), as well as its dark (war) heritage, especially the ruins from 1999 NATO campaign in Yugoslavia. Additionally, according to a survey conducted by the Tourist Organization of Belgrade (TOB) in 2012 (Čomić & Vićić 2013), ruined buildings from the NATO campaign ranked third in popular tourist destinations, just after the mausoleum of the former Yugoslav president Tito, while the Shopping Centre "Ušće" in the New Belgrade surprisingly topped the list. None of these three attractions have been listed among the top ten attractions of the Serbian capital by the TOB, which further confirms a significant gap between the tourists' preferences and the image being projected to the general public in the CEE countries (Čomić and Vićić, 2013).

Appropriation of unwanted elements of the socialist legacy – the case of Bucharest, Romania

Contrary to Yugoslavian market-socialism, or Hungarian course of gradual liberalization, Romania followed a different course. Autocratic rule of its leader Nicolae Ceausescu was certainly marked by draconian austerity measures imposed to eliminate the country's foreign debt, causing living standards to plummet for its own citizens. Paradoxically, Ceausescu's plan to turn central Bucharest into a modern socialist capital during the 1980s was characterized by a grandiose scheme, for which almost a quarter of the historic centre was razed. In its place the Civic Centre (*Centrul Civic*) was constructed, with the immense House of the People (*Casa Poporului*) as its central piece; housing presidential, state and party activities. Its absolute spatial domination was accentuated by an axis that ran through the grand ceremonial Union Boulevard (*Bulevardul Unirii*) but led to nowhere in particular. Deliberately planned to be longer and wider than the *Champ-Élysées* in Paris (Light and Young, 2013), the Boulevard was lined with ten-story apartment buildings that housed key state functionaries and officials. This representative "urban curtain" also had a major role to convey an image of a grand national capital, while hiding the modest urban fabric of socialist Bucharest out of visitors' site at the same time. Similarly to a discord between the inscribed meanings and the significance attached to the monuments in Budapest, the newly created image of Bucharest also demonstrated a shift in the intended symbolisms. Designed to become one of the world's largest buildings that would demonstrate authority and power of the communist state, the House of the People soon became the "defining symbol of totalitarianism" in CEE (Light & Young 2013: 19).

After the fall of socialism, the evocation of the pre-socialist period has been increasingly constructed as having been Romania's "Golden Age", which started with the comprehensive renaming of streets and squares (Light 2004). The country also faced a challenge in finding a future use for the socialist urban

landscape, which still carried traumatic associations to the oppression and harm caused by the former totalitarian regime. The prevailing public opinion was that the unfinished House of the People should be torn down (Light 2000, Light n Youg 2013). After many debates on its future use, an international architectural competition entitled *Bucureşti 2000* was launched in 1995, with the aim to provide solutions for a comprehensive remake of the Civic Centre. Apart from the objective to open-up, reconfigure and somewhat "decontaminate" totalitarian landscape, initiation of the competition could also be interpreted as an attempt to improve the existing negative international reputation of the country (Light & Young 2013). However, the winning design of the competition was never implemented most probably due to the lack of funds. The national government eventually decided to complete the construction work on the building, after which it was designated to house the national parliament. Thereby, its symbolic meaning was reconfigured through a rather pragmatic way – by renaming it into the Parliament Palace (Palatul Parlamentului). The following attempts to "heal" the building involved diversification of its functions, which since 1994 has also housed an international conference centre, followed by an art museum that was introduced in 2004.

Figure 4. Marketing of a thematic city tour in Bucharest, featuring the Parliament Palace in the background

Source: http://unveilromania.com/

Moving further, a relatively low progress in remaking the landscape of the remaining Civic Centre resulted in only a few private sector investments, which introduced business and banking into the district. The attempts to further diversify the functions had commenced with the public-private initiative to construct the Esplanada City Centre in an international architectural style, with a multi-functional complex of offices and other commercial space. Although this initiative failed due to privatization and land restitution issues (Light & Young 2013), the first shopping mall in the country was constructed in close vicinity in 1999, replacing a former monumental building which was collective food hall. Another monumental structure situated behind the Parliament Palace was turned into Romania's first five-star hotel in 2000 (Light & Young 2013). Finally, in 2010 construction work was started on the monumental Cathedral of National Salvation in the very heart of the Civic Centre, which rivalled the Parliament Palace in both scale and symbolic representation. This initiative highlighted another aspect of the processes of post-socialist healing and "Europeanization" by emphasizing the nation's Orthodox identity triumphing over totalitarianism, but also testified to a general absence of a vision for the development of the 21st century Bucharest (Light & Young 2010).

Contrary to the extreme ambivalence shown by Romanian citizens towards the Parliament Palace in particular, the building ironically became the city's biggest tourist attraction (fig. 4), with approximately 25,000 visitors annually (Light 2000). Considering that the country has experienced relentless decline in

tourism, there seemed to be little choice but to make this site available to the curious international visitors in mid 1997, followed by it being mentioned in material promoting the country. Nevertheless, the existing contestation to the socialist past got translated into presenting the building to tourists, while ignoring the building's dark history and emphasising its physical dimensions, craftsmanship and current functions (Light 2000). In addition, further appropriations of the socialist heritage occurred when the apartment blocks along the Union Boulevard became the most expensive real estate, due to their modern and earthquake-proof features. Therefore, the former symbol of totalitarian power gradually became the space in which the arrival of global capitalism in Romania has been proclaimed, with billboards and advertisements for global consumer goods, followed by the transformative impact coming from the private sector (Light & Young 2013). Eventually this place with plenty of contrasts became the new, appropriated and westernized centre of the post-socialist Romanian capital city.

From demolition to rehabilitation and exploitation of the socialist past – the case of Berlin, Germany

As a formerly divided city within a divided country, Berlin could be certainly considered as the most exceptional case among the capital cities from the former East Bloc. In the context of regional and global restructuring, this city has gone through some dramatic changes (see Cochrane & Jonas 1999). It has also been forced to reimagine itself, as a consequence of contestation of most of its 20th century history, particularly from the Nazi and GDR times. Berlin gained its new symbolism with the collapse of communism and through the complete demolition of the Berlin Wall, followed by the integration of Eastern Europe into what used to be called Western capitalism. The formerly divided city needed to discover its new identity (see Colomb 2012), which was done in several ways. An effective insertion of symbolic architecture by international architects, such as the well-known development of the *Potsdamer Platz* in a derelict area adjacent to the former Wall, intended to produce an image of a world city. The other major strain in Berlin's identity building ventures was the implied improvement of its image and authority as the new-old national capital. To accomplish this, built heritage from East Berlin was initially not viewed as being desired by the national authorities and thus, has been largely removed from urban fabric; including the common renaming of commemorative names of streets and squares (Azaryahu 1997).

Additionally, one of the most prominent cases of erasing the socialist legacy was the demolition of the former seat of the GDR parliament (*Palast der Republik*) in 2008, despite opposition by numerous citizens (fig. 5: l). The symbol of the former regime was built on the site of the Baroque City Castle (*Stadtschloss*), which was heavily damaged during World War II, and eventually destroyed by the new authorities who viewed it as an unwanted symbol of Prussian imperialism. However, since 2013 the castle has been undergoing a controversial reconstruction, symbolically representing a collective return to the convenient pre-socialist (and pre-Nazi) national past (fig. 5: r). Another iconic example, the square *Alexanderplatz* which was largely a product of the GDR period, incorporated housing for thousands of people and a large amount of open space. The initial proposals for its redevelopment envisioned tearing down most of the existing structures and replacing them with high-rise office buildings. Nevertheless, in spite of ambitious plans and remarkable location, the square has retained its socialist character till today. The proposed redevelopment plans haven't been realized, but not because of the lack of initiative or local residents' open resistance against proposed skyscrapers. Contrary to this, heavy reliance on the property market brought an awareness that many developments elsewhere in the city could cause an oversupply, along with some of the developers also sustaining financial difficulties (Cochrane & Jonas 1999).

Figure 5. The GDR parliament building with the iconic TV Tower in the background (l; 1977) and on-going reconstruction of the City Castle on its place (r; 2015).

Source: https://en.wikipedia.org/

Moreover, since the mid 1990s, there was a growing trend in Germany that assumes a more comprehensive approach to history as part of the urban life (Nipper 2002). This has resulted in a number of socialist monuments and buildings all over the country being put under preservation. In Berlin itself, the new trend didn't demonstrate a prevailing influence on the fate of the GDR parliament building, but many other monuments were saved from demolition. The Berlin TV Tower (*Fernsehturm*) dominated the cityscape from the neighbouring *Alexanderplatz*; however, considering that the square was lacking investments–and thus new urban imaginaries–it quickly became a citywide symbol of a reunited Berlin (fig. 5: l). Although after the German reunification voices were raised in favour of demolition of the tower, the symbolic transformation from the former symbol of communist power was probably made possible due to the universality of its timeless design. The tower became a listed building in 1979, only ten years after its construction, and this status was kept after the reunification (Müller 2000). Since 2000s, the tower is actively included in advertisements, cultural production, as well as in branding and marketing of Berlin. Another example involves increasing tourism demands, along with some degree of nostalgia for the demolished Wall by many Berliners that resulted in the retention of some of its representative fragments as memorials. These could be found in *Niederkirchnerstrasse*, or in the open air East Side Gallery, located a few kilometres from the centre of the city that was declared as a historic monument back in 1991 (Light 2000). The permanent marking of the course of the former Wall since 1996 in the centre of the city through a variety of forms, such as stone sets, a metal strip in the road surface, or a painted red line, aimed at memorializing the former division of the city in a controlled way. However, it can be said with certainty that the Checkpoint Charlie area evolved in to a rather extreme case of the so-called "Wall-nostalgia" tourism (Light, 2000). The city authorities though have gradually negotiated and acknowledged this particular tourist interest, to the point that the whole area has been turned into a constructed space of memory, deliberately contrived to attract more than half a million visitors annually further propelled by the development of corresponding services. As Hann has noticed; "(t)he trivialization of socialism through the selling of kitsch souvenirs to tourists at Checkpoint Charlie reflects the unified market society which has replaced the Wall" (Hann, 2012: 1125).

Discussion and conclusions

The construct of the socialist city in the CEE context today continues to exist only in history. In addition, the post-socialist city remains a matter of many scholarly debates, and is thus still a rather controversial term, especially considering that recent arguments have implied the transitioning process to be already concluded (see Berki, 2014). Among such high complexity of terms and concepts in the context of CEE,

there is another one to be added for consideration. Apprehending heritage as an agglomeration of values that are created, shaped and managed as a response to the demands of societies in the present, implies that "the creation of any heritage actively or potentially disinherits or excludes those who do not subscribe to, or are embraced within, the terms of meaning attending that heritage" (Graham, B.; Howard 2008: 3). The evident elements of contestation of socialist heritage after more than thirty years since the fall of state socialism stems from the negative memories and associations related to the former regimes. As Kliems and Dimitrieva have observed, "in the eyes of a substantial number of Central European societies, mediocre architecture and scarcely functional functionalism are deeply connected with the failures of communist planning and landscaping" (Kliems & Dmitrieva 2010: 8-10). This legacy also demonstrated some striking contrasts and conflicts with the newly emerging identities. Equal contribution was given by a general uniformity, functionality and low diversity as the main features of socialist landscapes (Gregory 2008), which made "(a) new contextualization of the functionalist landscape a difficult task, especially since most late twenty-century urbanism generally failed to create significant landmarks and landscape icons" (Kliems & Dmitrieva 2010: 8-10).

In addition, a general contestation of socialist legacy commenced with a swing in reinterpretations of urban and national values and identities. Along with a post-socialist urban restructuring that was propelled by neoliberal ideology, the reinterpretation largely contributed to its intense erosion and destruction, even before any proper evaluation. On the other hand, initial solutions to deliberately destroy socialist built legacy and simply to reach back to the pre-socialist pasts to create new ones, faced many challenges in praxis which were mostly financial in nature. Also critical was the political nature of the decision of what should replace such legacies to successfully erase the past and convey a new vision of the nation through urban space of the capital city (Light & Young 2013). Furthermore, as the socialism of the Eastern Bloc was only a relatively short moment in the complex and diverse history of this part of Europe, their post-transitional reality differed depending on the country (Banaszkiewicz et al. 2017). Apart from diverse internal factors, there were also some external elements coming from the international sphere that enabled an emergence of alternative solutions, which in some ways accept and include the existing landscapes into the new identity construct. Based on the elaborated case studies, and considering the main research questions, some general conclusions based on a present-day perspective could be made.

In general, there were some phenomena that could be determined, spanning from physical removal, over assimilation and appropriation, to rehabilitation of socialist heritage. Removal of socialist past through relocation of its iconography in the case of Budapest showed a shift that occurred from the most pragmatic approach to decommunization of urban space, by stripping off the meaning from the urban space through simple relocation of unwanted symbols. Furthermore, the paradoxical rise of tourists' interest transformed the concept of initial contestation to recognition of the Statue Park as a new urban brand and another tourist attraction that Budapest has to offer. Additionally, the assimilation of socialist heritage into the new urban fabric construct in the case of New Belgrade illustrated not only an uncontrolled process of fading negative memories and associations that built legacy previously conveyed, but also their transformation into a lethargic public approach to its recognition and preservation. Criticism coming from scholars and professionals, along with the rising tourist interest for socialist heritage gives hope that the built legacy of New Belgrade will eventually get evaluated and preserved before it is lost in purely functional appropriations of urban space. Moreover, appropriation of some unwanted legacy elements that dominated in the case of Bucharest, represents another example of fluid and in this case deliberately created dual approach to socialist heritage. Tourists vs. residents' expectations resulted in the rehabilitation of certain elements of Romania's symbols of the former totalitarianism, with some

contestation. In addition to a selective presentation of heritage, stripped off from the original context by introduction of neoliberal and other symbols in the inner city of Bucharest, there was a demonstrated lack of a development vision that many post-socialist cities faced. However, probably the most advanced example of rehabilitation of socialist past and its economic exploitation could be seen in the case of reunified Berlin. Concurrent to the destruction of the most outstanding socialist symbols, introduction of the new ones aimed to appropriate and stabilize the problematic urban identity for the new capital city. This finally enabled public acceptance and recognition of some socialist constructs as heritage monuments, at first due to their universal designs and associations that could be easily converted. On the other hand, compliance to the international trends also resulted in some rather extreme phenomena, such as museumification of sites and creation of urban spaces of memory purely based on the requirements from the tourism industry.

Although each of the selected cities demonstrated some specific problems and approaches to dealing with the socialist past in CEE, they all faced more-or-less the same difficulties and dilemmas in this process, although in different proportions. Apart from the still evident contestations of some of its elements, the process of socialist legacy emerging as a new urban heritage already began some time ago with equally varied results. The analysed cases demonstrated its rather slow and selective nature that still relies on modification or erasure of some difficult elements of history from the repository of collective memories. The benefits of reconsidering the ways socialist heritage is perceived and managed are evident through the example of specialized tourism experiences taking precedence over mass tourism that spread out to the CEE countries (Paddison 1993). A distinction between ordinary and extraordinary that socialist past provides seems to have the potential to generate revenue from tourism, but also to create international visibility that often brings new investments, residents and development. This seems to be, however, a matter of skilful compromises between the market requirements and the new national identity construct that often stands in a juxtaposition. Such extreme fluidity of meanings and contestations for particular social groups in the construct of emerging socialist heritage reiterates the debate on “whose heritage” is to be selected and preserved for the future generations (Hall, 1999), which certainly will remain a crucial aspect for further studies on rehabilitation of the socialist pasts.

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TOKEN PHENOMENON IN PARTICIPATORY ARCHITECTURAL DESIGN AND SULUKULE URBAN TRANSFORMATION AS A TOKENISM EXAMPLE

BAHARAK FAREGHI BAVILOLYAEI, SELIM ÖKEM

Baharak Fareghi Bavilolyaei: Ph. D. Candidate, Yıldız Technical University, Building Research and Planning Ph. D Program, Department of Architecture, Barbaros Blv., 34349, Istanbul, TURKEY, bfareghi@yahoo.com

Selim Ökem: Yıldız Technical University, Department of Architecture, Barbaros Blv., 34349, Istanbul, TURKEY, okemselim@gmail.com

Abstract

The "participation" approach within architectural design is assessed under a wide conceptual frame and known as a title generally confirmed and rately criticised. This paper discusses how the concept of participation may be used as a means of legitimization by the power holders instead of being favoured as a tool for democratic and transparent policy formation in the decision-making processes. The use of participation, which is a subject of research in sociology studies, but as a means of legitimization has been explained by Kanter (1977, 1993) through the concept of 'token'. The concept 'token' is identified throughout this text as a misleading symbol value whereas the 'tokenism' as a method is referred to as alleged participation. The tokenisim (i.e. alleged participation) is a subject not limited only with sociology whereas it may be spotted in architectural projects; thus, this document examines the Sulukule urban transformation process to exemplify this kind of participation. The study analyzes the theoretical claims of Arnstein, Lefebvre and Kanter with regard to the participation and accordingly the wording attempts to identify the general characteristics of tokenism cases in architectural projects which target user participation however include the intentions of power holders as accompanied by token impacts (Fareghi and Ökem, 2018).

Keywords: Participatory architectural design; Arnstein; Lefebvre; Kanter; tokenism; token.

Introduction

The "Participation" in the area of architectural design requires to be assessed as a layered and multi-directional concept consisting of multiple actors. The basis of the participation is rooted to the concept of cooperation and is a phenomenon originally qualified as "good" in universal means. The existence of a participation culture in the society, accompanied by a desire of participation demonstrated by the participants, is significant. To ensure the active participation of all the stakeholders through the process of participatory architectural project requires training, information, time and money. The organizational

ability is also of utmost importance meaning the citizens being aware of their own powers and rights[1](Ökten, the interview held in January 2018).

According to Maier; the participants, from time to time, through a process of cooperation among the actors, may prefer not to demonstrate their wish to participate or "not to participate" due to differing and, at the same time, complex reasons.[2](Maier, 2001). The "citizen participation" idea, according to Sherry R. Arnstein, is the magical word of the recent times and resembles more or less "eating spinach". In principle, no one protests this idea because it is good for the humans[3] (on the other hand, its benefits may have been exaggerated (Arnstein, 1969).

Considering the views of the critical researchers; the judgment as the "participation would generate benefits under every condition" may not be always true. For instance; Sarah White (1966) claims that accepting the participation with a pretty prejudice would block the critical thinking on the very concept by the participants [4](White, 1996). White states that the romantic utilization of the concept participation, generally, paves the way for the politicians who seek to save themselves from the responsibility of their own decisions. The administrators and the politicians causing misleading participation as to assist their decisions then transforms the participants as the subjects of an unsuccessful participation merely used for the legitimization of the political decision-making process. The projects realized under such an approach may cause the unilateral decisions to be taken and implemented in a fast manner; i.e. disregarding the wishes of the participants and even resulting in the change of the lifestyles. The cultural erosion that may be caused by the "alleged participation" will be analyzed in the Sulukule Urban Transformation example and the impacts of the so-called participation processes on the Gipsy (Romanlar) culture and life style shall be evaluated.

Method

The method required the explanation of the concepts of "participation", "non-participation" and "alleged participation for which we made use of three theoreticians namely Rosabeth Moss Kanter, Sherry Arnstein and Henri Lefebvre. Kanter explains the alleged participation processes using the concept of "*tokenism*" he has derived from the English term "*token*". Kanter defines the tokenism as generating misleading symbol values (1977, 1993)[5][6]. According to Kanter, the tokenism is generating small samples, which are so narrow that they may be deemed as symbols when taken within the generality of the society, and accordingly staging the act as if the rights of the victim, weak or minor groups of the society are being protected by making a fake use of such symbols. The *tokenism* in the architectural design corresponds to the concept of alleged participation. The discussions about such matching are given with regard to the Sulukule urban transformation project which has been examined as an example of alleged participation in the following pages. We will define the Sulukule urban transformation and renewal under the concept of Kanter's *tokenism* in the first place and then we shall focus on the *tokenism* definitions scattered around the participation steps of the architectural projects as claimed by Arnstein. The

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[1] Ökten, 2018, (notes related to the participation- Interview by: B. Fareghi)

[2] Maier, 2001, pp.707-719.

[3] Arnstein, 1969, pp.216-224.

[4] White, 1996, pp.6-15

[5] Kanter, 1977, pp.965-990

[6] Kanter, 1993, pp. 160-380

concrete (lived space) and abstract (political space) urban planning concepts of Lefebvre will be discussed finally[1] (Fareghi and Ökem, 2018).

Misleading Symbol Values (*Token) and* Alleged Participation (*Tokenism*[2])

Tokenism is defined as "The practice of making only a perfunctory or symbolic effort to do a particular thing, especially by recruiting a small number of people from under-represented groups in order to give the appearance of sexual or racial equality within a workforce."[3] (Oxford Dictionary, 2018). The Turkish translation of the English word *tokenism* is symbolically performing a reform, alleged participation, false/fake participation and artificiality. The Merriam-webster[4] (2018) dictionary defines the concept " *tokenism*" as "the policy or practice of making only symbolic effort (as to desegregate)"; a practice of an act (for instance to employ a person from a minority group) aiming only to prevent criticism and planned to solely prove the equality of performance.

The Turkish translation of the English word *Token* is indicator, symbol, fake, symbolic, misleading symbol value, artificial, sign etc. In our study, we preferred the noun phrase "misleading symbol values" for the word *token* and "alleged participation" for the concept *tokenism*. When the tokenistic practices are compared with the projects deemed successful as with achieved public participation, it may be seen that their processes are shorter and faster. Besides, the role of the design researcher in a tokenistic practice/project is seen as a service provider rather than a designer.

The tokenism theory has been developed in 1977[5] by the American sociologist **Rosabeth Moss Kanter** as to examine the social outputs of the insincere behaviours faced by the socially lower layers who are in seek of their fair rights and equality. Kanter, through her works in 1977, was examining the impacts of being an individual within minority group on the performance of the same due to visibility and increased performance and accordingly has developed the term "*tokenism*". Kanter has published her book "*The Men and Women of Corporation*" which had examined the behavioural characteristics of the working women in male-dominant working environments. According to her research results; such women face abuse, stereotyping (being limited within clichés), isolation and performance pressure and favour limited chances of promotion. Kanter deals the with "tokenism" issue in numerical terms. The minority group (token) specifies the situations when lesser than 15% of the total workplace population resulting in misleading symbol values. Kanter states that those misleading symbolic values have caused problems in the workplace with regard to the status of minority. Persons in the minority group are looked (examined) more than their colleagues and superiors; whereas, they are mostly identified with the clichés and titles assigned to them by the dominant group. Kanter has summarized the respective problems in three terms:

heightened visibility

exclusion

assimilation [6](Kanter, 1993).

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[1] Fareghi, Ökem, 2018

[2] The word "tokenism" and the expression "alleged participation" are anonymous in English and used in lieu of each other in the study

[3] Oxford dictionary, 2018 https://en.oxforddictionaries.com/definition/tokenism

[4] Merriam-webster,2018 https://www.merriam-webster.com/dictionary/tokenism

[5] Kanter, 1977, pp.965-990

[6] Kanter, 1977, pp.965-990

Tokenism, therein, expresses the user to act always in line with the dominant majority. Such an approach is called as "*performing aboriginality*" in social sciences. The performing aboriginality means a disregard of the user desires and fully acting in line with the policies of the powerful parties. The powerful parties (dominants) enable only a part of the weak parties to be included in the participation process and generate an individual representative who is characterized as a misleading symbol value (token).

Alleged Participation (Tokenism) in Architectural Projects

Tokenism is faced in the architectural projects and particularly in the ones performed under the participatory approach. The problems occurring in the participatory projects, in general, originate from the ignorance (disregarding, overlooking) by the dominants towards the abilities of the users. Both the dominants and the users require to improve their awareness related to their authorities and responsibilities of participation.

The administrators, sometimes, are not manipulative on the users however they mislead them. The project, decision and analysis processes are not shared with the users in general and accordingly not declared transparently. The users are not generally aware of how the ideas provided by them will be implemented. The tokenism is faced just at this point in the participation focused/participatory projects. It is also important for the users as who wants the participation and for what purpose. Instead of a decorative participation, the user need to understand the significance of their own roles in the project. Following such consciousness states, the users may voluntarily participate in the project. The heightened visibility, assimilation and exclusion referenced by Kanter (*exclusion*)[1](Kanter, 1993) concretely demonstrate themselves also in the architectural projects mutatis mutandis; as well as in workplaces as she had originally explained. Table 1, explains the level of participation, objectives, values and decision-making level of the alleged participation.

Table 1 Structural Characteristics of (Tokenizm), Objective and Decision Level

PARTICIPATION LEVEL OF PUBLIC	STRUCTURE OF THE ALLEGED PARTICIPATION	OBJECTIVE AND VALUES	DECISION AND EMPOWERMENT EFFECTS
ALLEGED PARTICIPATION (TOKENISM)	Several information (however missing and/or misleading)	Participation reduced to symbolic or material donation	Legitimization tools
	Individual participation, a weak role of NGOs	Insufficient professional information or insufficient knowledge based	Decision given by the dominants

[1] Kanter, 1993, pp.160-380

		on experience	
	Political activism	The evaluation of the cost-benefit balance of the participation for the favour of the cost side; comparison of the public-private interests	Once reached in the simplest answer, the problem being regarded as solved without considering the logical stability; and compliance to such a decision by the remaining actors
	Weak role of the user and the designer	Unilateral information exchange (i.e. information provided only by a single side)	Different opinions being considered as disputes during the decision making process; followed by destruction of such ideas or seeking very fast solutions towards the same
	Power to the favour of the dominants	The concerns and ideas of the citizens disregarded by the dominants	Decisions being considered as not supportive but obstructing
	User participation place and means not known		

An important problem in both individual and collective participation is the necessity of the participants to be well-employed and well trained persons. These opinions aim to promote the participation of the disadvantaged groups resulting in the defending model of the planning. The transition from the traditional values to the participatory values is not a simple issue. It is a process requiring the change of mind i.e. an effort to swim against the stream of the conventional (dominant) values and assumptions. The facilitator person or persons are placed as responsible parties to facilitate such a transition.

An important paradox is spotted with regard to the values of the dominants and the citizens. By means of the planners; the participation to demonstrate a symbolic value is sufficient for them. From this perspective, the participation is limited, frequently, with the narrow forms only as foreseen by the legislations. The value of the participation for the citizens is the material benefits whereas also, should, consider a better understanding of the society and the possibility (hope) of impacting the future decisions which in turn require the acquiring of the respective social and information capital.

The targets that promote the participation in the public area include the information exchange, development of the relations and the mobilization capacity and re-activation of the democracy (Douglass and Friedmann, 1998). In fact, the traditional alleged participation practices, at the same time, generate democratically legitimate decisions by means of strengthening the political-economic status of the dominants (Purcell, 2009). Figure 1, explains the features of the misleading symbol values used in the

participation processes of the architectural projects. The user group, rather than being less in numbers, is in a socially lower layer. As the side not dominant, they face difficulties when trying to access the information and sources. The dominant side, in turn, provide missing information to users or declare the necessary information in a delayed manner however for the, so called, participation to the design process. The Figure 1 explains the characteristics of the users included in the alleged participation process (misleading values) in the course of the architectural design.

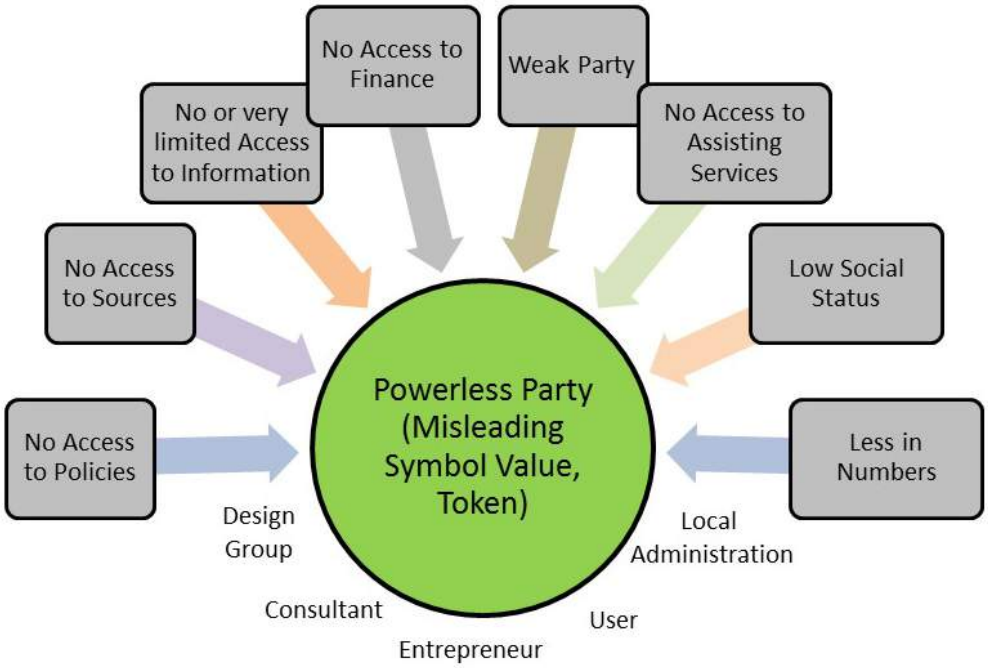

Figure 1 Alleged Participation: The characteristics of the misleading symbol values in the architectural projects

In the alleged participatory projects, the approach towards the architectural projects concretes as obtaining only the opinions of the specialists however the disregarding the opinions and wishes of the final users. Kanter explains this situation as "*Boundary heightening*" i.e. exaggeration of the differences. The dominants disregard the abilities of the users cause the latter to feel themselves as the weakest link through the participation process resulting in a sense of exaggerated differences and finally they found themselves as stuck between related cliché roles. Kanter claims that the misleading symbol values may be found as four basic existence:

1- *numeric imbalance*

2- *gender status*

3- *occupational inappropriateness*

4- *intrusiveness)*[1] [2](Yoder, 1991).

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[1] Yoder, 1991, pp. 178-192

[2] Kanter claims the genders of the tokens affect their situation; i.e. the responses of the male and female against the negative experiences, according to Kanter, are not alike. Kanter states that the gender is the main status which forms the communication among humans. She claims that the gender typography of a profession includes two directions: normative and numeric. The gender related profession clarification point out what is suitable and not suitable for a female and male. The deviations from normative expectations cause negative results. The gender typography of a

The users cooperating with other actors and being in constant relation with them provide a strength and enable them to be active actors. Otherwise, as may be seen through the Sulukule Urban Transformation Project (UTP) (located in Fatih district of İstanbul)[1], the users face a negative social-cultural change process and a misleading participation will be the case.

Sulukule Urban Transformation and Renewal Project as an Example of Alleged Participation

A radical change is being experienced since 2001 with regard to the administration of the urban areas; whereas, the urban periphery undergo changes from "populist" approach towards a "neo-liberal" view. The urban transformation projects redefine the ownership rules and market dynamics as aiming to reach two targets: (i) renewal of certain residence areas physically and demographically and (ii) making use of the uncertainties of the neo-liberal state and building up the commoditized market structure[2](Kuyucu and Ünsal, 2010). The urban transformation in Sulukule neighbourhood of İstanbul Fatih district has been a processes through which the alleged participation was faced. The urban transformation projects are important components of the neo-liberal urban planning and practices whereas Sulukule is one of them. About 3500 gipsy(Romanlar) citizens and nearly 2000 non-gipsy citizens have lived in the neighbourhood for long years[3](Kıyak, 2007).

Fatih Municipality declared the basic purpose of the project as "to enable all the resident families to continue their living in the neighbourhood"[4](Unsal, 2013). Most of the 620 households (families) in the neighbourhood work as musicians, artisans, horse carriage drivers, shoe-making or shoe-repair etc. Professions. The Figure 2 provides the general view of Sulukule before the demolishing of the houses.

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profession is defined by means of the ratio of the number of females performing that profession to the number of the male. The study of Kanter is a descriptive case study whereas discusses the significance of the balanced numbers of the male and female employees in a workplace as to reach the gender equity. Kanter thinks that balanced ratio of the male and female employee type in a workplace is theoretically alike with the parameter of suitability to the profession and increase of the low status employees.

[1]Urban Transformation Projects

[2]Kuyucu and Ünsal, 2010,pp. 1479-1499

[3] Kıyak, 2007.

[4]Unsal, 2013,pp.12

Figure 2: Sulukule Neighbourhood before the Demolition[1](Koca, 2013)

In 2007 January, the Cabinet of Ministers declared its decree of "Urgent Expropriation" which included also Sulukule neighbourhood. As such decree is declared, the habitants are informed as only 40 days left to the demolition. In the year 2007, the architects had formed certain platforms with regard to the change of Sulukule. The Sulukule platform named as "40 Days and 40 Nights" had managed to accomplish effective steps thanks to the diverse cooperation acts [2] (Kıyak, 2007).

The 40 Days and 40 Nights activities have been supported by about 50 organization, 200 academicians, musicians, artists, habitants of the neighbourhood, architects, sociologists, students and some other social units. The Figure 3 demonstrates the photos from several events performed. (the meetings held in the university and the meetings held with the habitants of the neighbourhood).

Figure 3: The Events Performed with regard to the Sulukule Project [3](Sulukule Workshop, 2009)

As an alternative for the municipality's project prepared for Sulukule, the aforementioned platform has presented *Sulukule Social Improvement, Economic Development and Spatial Strategies(Sulukule Toplumsal Gelişme, Ekonomik Kalkınma ve Mekansal Stratejileri Project)* project [4] (Arkitera, 2013). They acted under the slogan of "Another Sulukule is Possible" and obtained the opinions of the habitants whereas shared

[1] Koca, 2013

[2] Kıyak, 2007.

[3] Sulukule Workshop, 2009

[4] Arkitera, 2013 http://www.arkitera.com/haber/16321/bir-zamanlar-sulukule-vardi

the such opinions through several platforms. The Figure 4, shows the situation in Sulukule before the demolition, the initial project prepared jointly by TOKİ (Mass Housing Administration) and the municipality and the initial project plan proposed by STOP[1] (Otonomous Planners Without Borders) as an alternative. STOP has regarded the criteria ignored by TOKİ and proposed, for instance, not changing the existing arteries or the tissue of the neighbourhood. Faith Municipality and TOKİ started the demolitions in line with their urban renewal plan and the habitants are forced to evacuate their houses in the year 2009[2](Yalçıntan and Çavuşoğlu, 2009). The Figure 5 reflects the layout plan of the project prepared by STOP.

Fatih Municipality had promised to the habitants of Sulukule that they could buy again houses in the neighbourhood by favouring the long term payment plan via instalments. However, the Sulukule habitants, whose income level has been low, had not been asked if they had such a payment ability or not. Indeed, finally, the houses in Sulukule are totally demolished and the project proposed by STOP has been ignored.

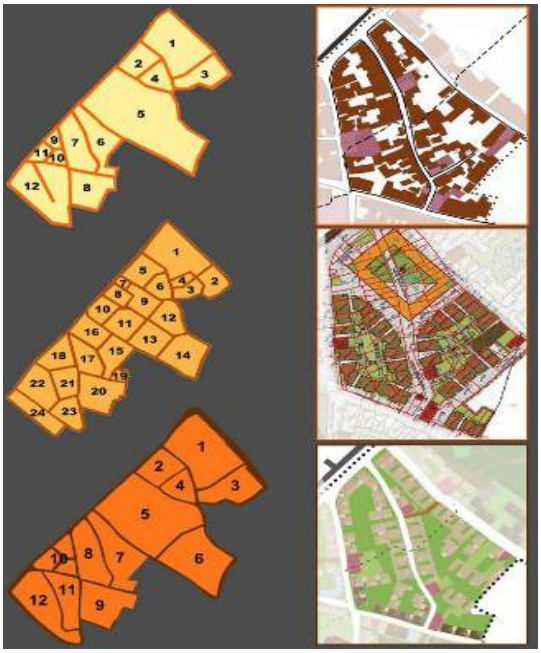

Figure 4 Upper: Sulukule existing situation, Middle: Initial project of Fatih Municipality , Lower: Alternative initial project proposed by STOP[3]

[1] *Sınır Tanımaya Otonom Placılar*

[2]Yalçıntan, M. C. ve Çavuşoğlu, E. (2009)http://sulukuleatolyesi.blogspot.com.tr/

[3] Sulukule Workshop, 2009

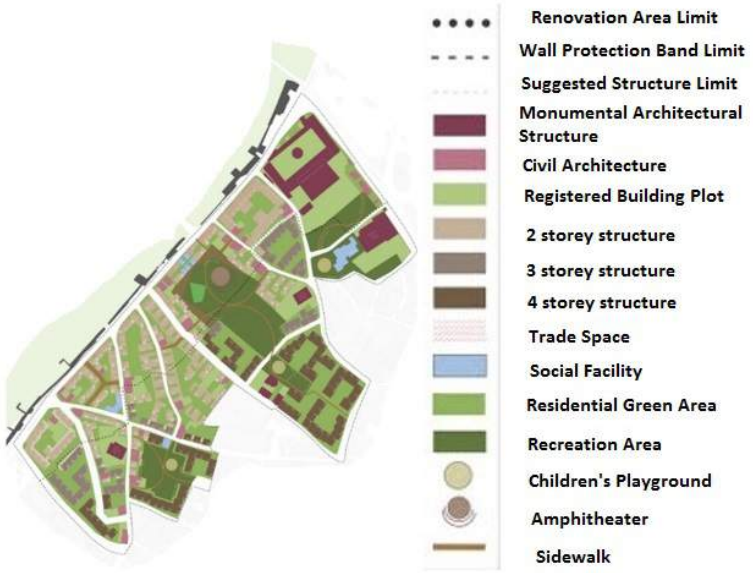

Figure 5 Alternative plan for Sulukule STOP Project[1]

[1] Sulukule Worksop, 2009

The evacuated owner families are presented solely for right ownership and house ownership options however the situation of the lessees used to live in Sulukule are disregarded. Very few of the habitants reached an agreement with the municipality and the others are contacted to the potential buyer 3rd parties. This caused the ownerships to be transferred and the zone has been fully turned to an area of profiteering[1] (Kıyak,2007). In the year 2015, it has been declared that the buildings settled by Syrian immigrants to be leased as lodgement for the municipality employees whereas the right of first option to be provided for the directors and executives of the municipality[2](Kültür servisi, 2015) The Figure 6, shows the new buildings constructed through the urban transformation experienced.

Figure 6: The New Buildings Constructed in Sulukule as a result of the Urban Transformation[3](Koca, 2013)

Evaluation of Sulukule Project as an Example of Alleged Participation

When generally monitored the design processes of Sulukule Project, three rival fractions may be spotted: "the inviters to the participation (dominant side i.e. TOKİ and Fatih Municipality), symbol "participants" (misleading symbol values i.e. the gipsies) and "the architects, planner and voluntary organizations participating in the activities and platforms"

The dominant side/party (TOKİ and Faith Municipality) has started the design process in line with its own options and followed the route again in line with its own political objectives. Sulukule Project demonstrated a fake pluralism and caused manipulation in the region under the title of participation whereas, accordingly, lost its initial claim of being a social project day by day and fully implemented in accordance with the objectives of the dominants. The problem faced in Sulukule, as had been stated by Kanter, includes the socio-cultural aspects which caused exclusion of the user, obligatory decisions, unsuitability and assimilation. The municipality and TOKİ (the dominant party/parties) have exploited the minority group (gipsies: Romanlar) to realize their political objectives under the fake title of urban transformation.

Since the decision of demolition has been taken by the municipality in a fast manner, the habitant gipsies (misleading symbol values) did not have the opportunity to formulate their own opinions and had to comply with the wishes and expectations of the majority (dominant parties). According to the numeric view in the theory of Kanter, the gipsies as the misleading symbol values (i.e. the token) have faced negative cliché behaviours in their own living and accommodation environments. The gipsies started to

[1] Kıyak, 2007

[2] Kültür Servisi, 2015

[3] Koca, 2013.

feel themselves as insignificant subjects and have demonstrated an obedient type of behaving in the participation process since not aware of their own powers.

Arnstein (1969)[1], Lefebvre (1974)[2] and Kanter (1977a)[3] all have stated similar views with each other (as being, respectively, educator, philosopher and sociologist) more or less in the same period. Lefebvre has defined the abstract space as fully aimed for profiting whereas the concrete space as a liveable place or an area including the vital codes. Arnstein, in 1969, has developed the participation ladder typology to explain the concept of tokenism. He has placed the steps of the participation ladder as eight steps however under three main categories namely "non-participation stage", "tokenism" and "real participation". Lefebvre, then, has evaluated the abstract and concrete spaces and clarified the concepts of life and design codes including the differences among these. The column in the middle of the Figure 7 shows the concrete and abstract space definitions of Lefebvre. Under this context, Sulukule Project could not leave the abstract space and stuck in an area solely targeting the political objects and profiteering. Thus, it could not upgrade to the concrete space i.e. failed to get in touch with the life (lived) space. When the theories of Arnstein, Lefebvre and Kanter are reflected to Sulukule example, it may be claimed that the political approach of the dominants existing in the abstract space have caused the tokenism. Consequently, the local users of Sulukule (i.e. the gipsies: Romanlar) have the polarization arena with the dominants and turned to be idled. In turn, they have accepted the municipal decisions and excluded from the area. The Figure 7, explains the Sulukule project in line with the definitions of Arnstein, Lefebvre and Kanter.

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[1] Arnstein, 1969, pp.216-224.

[2] Lefebvre, 1974, pp. 31-32

[3] Kanter, 1977, pp.965-990

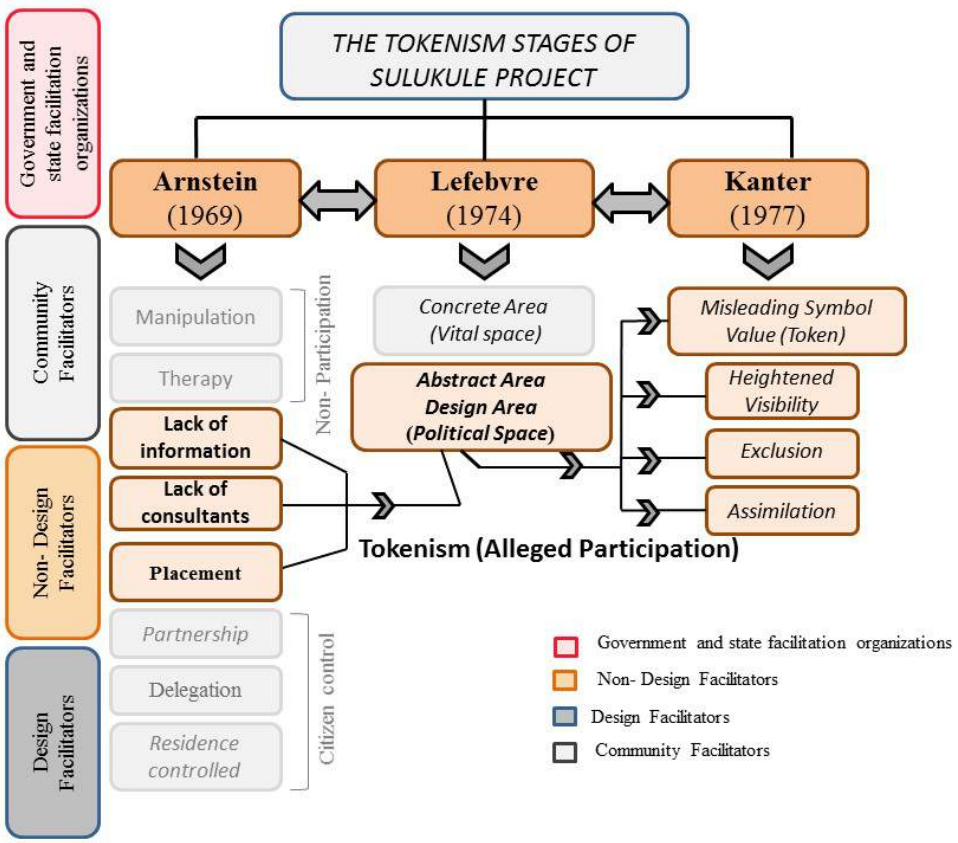

Figure 7. Tokenism (Alleged Participation) Stages in Sulukule Urban Transformation and Renewal Project according to the Definitions of Arnstein, Lefebvre and Kanter

Lefebvre (1974)[1] has defined the abstract and concrete space definitions in his book *"La production de l'espace"* (Production of the Space) whereas stated that the abstract space would be used by the dominants for profit and profiteering purposes rather than for the value of the physical usage. When we examine the Sulukule Project according to the concrete and abstract space definitions of Lefebvre, it may be seen that the area has been regarded as an abstract space by the dominants where they have attempted for their political and financial benefits. Lefebvre claims that the city consists of economic, cultural, politic and daily lives and the solution of the urban problems may not be reached only with the abstract spaces however the daily life and living codes thereof should be used [2](Lefebvre, 2003).

In projects with political focus, like Sulukule, the users are either not invited to the participation or (sometimes against a financial price) invited however forced to select one of the already presented options. The users generally prefer to stay passive in the alleged participatory projects and face unfair treatments as themselves perform the imposed behaviours. In the alleged participatory projects, the dominants mean, when they speak of participation to the urban transformation, to organize a symbolic public meeting, to declare the decision of demolition to the habitants only after it has been officially approved as not providing a right of acceptance or refusal for them. The lack of governance formalities

[1] Lefebvre, 1974, pp. 31-32

[2] Lefebvre, 2003, pp.1-196

then cause the local habitants to migrate in masses which in turn deepen the urban poverty even more[1](Candan and Kolluoglu, 2008).

Consequently, the diameter and strength of the social organization in the urban transformation projects should be understood as an important factor for how to implement the projects and what socio-economic outputs will be obtained. The effective and continuous organizational attempts/trials may unite particularly with the existing organizations in the society and accordingly challenge the downwards hierarchical social structuring; i.e. will result in the achievement of important gains by means of social participation [2](Eckstein, 1990).

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TRANSFORMING PUBLIC LANDS TO THE DETRIMENT OF "PUBLIC INTEREST" REGENERATION AND PRIVATIZATION OF PUBLIC INDUSTRIAL AREAS IN İSTANBUL

JULİDE ALP

Jülide Alp, Assistant Proffessor, Maltepe University**.**

Abstract

Many developed/developing countries have attempted to restructure major cities, leading in terms of industry, history and culture, depending on changing socio-cultural, technological and economic dynamics since the last quarter of the past century. In that restructuring process, depression areas in the city centers usually have been reintegrated into the city in the way of of physical, economic and social sense via urban regeneration projects. The above-mentioned processes may be evident in major cities of developing countries and Istanbul is not an exception of this matter. İstanbul, as one of the most vital cities all over the world, has involved this "urban race" after 1980s. The effect of all these developments, in particular after the 2000's, the number of the urban regeneration projects are increased. In this process, one of the most important problem especially for the investors is "lack of land". Because of this, in the last period, public lands particularly the obsolute public industrial areas in the city center are the most popular areas for regeneration projects. For the solution of this problem, these public lands are privatised by the government, and then regeneration projects are made by the big capital owners. Hovewer, privitazing the public lands on behalf of them and transforming these lands to the detriment of "public interest" is criticized frequently by public opinion. In other words, public lands are an oppurtunity to create "new public spaces" for overpopulated metropoliten cities such as İstanbul. And they must be regenerated for this purpose. This paper aims to critize exactly this topic. As for methodology, regeneration projects of public industrial areas in İstanbul and their implementation process are examined and critized 'do this projects contain "public interest" or not?'

Keywords: Urban regeneration, privatization, public industrial areas, public interest, İstanbul

Introduction

Since the last quarter of the past century, many developed/developing countries have attempted to restructure major cities, leading in terms of industry, history and culture, depending on changing socio-cultural, technological and economic dynamics. With that restructuring process, "urban race" between cities that has been generated by globalization accelerated each passing day. Cities, which were areas for industrial production, are now becoming the new prestige areas in which the service sectors are located.

Urban transformation projects are effective planning tools for redeveloping the depressed areas of the city with their spatial, social and economic qualities (Cullingworth, B.,). During the last years, the old industrial areas, warehouses or docks of cities, which lost their previous functions, are subject to urban transformation processes. These areas, with their infrastructures and central locations are preferred for transformation projects. (Roberts P., Sykes H.) (Önal, F., Sadri, S., 2007, pp.24)

In the last period, public lands particularly the obsolute public industrial areas in the city center are privatised by the government, and then regeneration projects are made by the big capital owners. Hovewer, privitazing the public lands on behalf of them and transforming these lands to the detriment of "public interest" is criticized frequently by public opinion. In other words, public lands are an oppurtunity to create "new public spaces" for overpopulated metropoliten cities such as İstanbul. And they must be regenerated for this purpose.

By taking all aforementioned issues into consideration, this paper aims at investigating whether the regeneration projects of public industrial areas have a 'public interest' or not in İstanbul examples. Firstly, different meanings of regeneration and privatization and some analogues terms are presented. Secondly, regeneration and privatization policies after 1980s are proposed on the basis of Istanbul. Subsequently, these policies are discussed through a number of examples from different projects in İstanbul. Finally, statement of argument and conclusion are given, and some hints for further studies are presented.

Literature Review

The term "urban regeneration" has been being studied by many researchers all over the world. Despite the common and single definition of "urban regeneration", there are some different approaches to the matter. In its purest way, urban regeneration is the process of improving derelict or dilapidated districts of a city, typically through redevelopment. (URL 1) Urban regeneration may be defined leading to the lasting solutions of economic, physical, social and environmental problems of urban districts. (URL 2) For an another attitude, urban regeneration is a holistic, comprehensive and integrated approach that embraces the three aims (the three e's- economy, equity and environment); maintaining economic competitiveness, reducing inequality and protecting and embracing the environment and that suggests a new generation of partnerships for policy development and delivery that includes innovative configurations of public, private and NGO sectors in more equal relationships (Kocabaş, A.) (Polat, S., Dostoğlu, N., 2013, pp.2)

The most fundamental aims of this concept are;

- to supply the sustainable development,
- to prevent the physical decay and preserve the historical fabric,
- to revitalize the economic life,
- to improve the quality of urban life,
- to stimulate the cultural dynamics,
- to enable the participation of relevant actors in all scales of the regeneration process (Kocabaş, A.) (Polat, S., Dostoğlu, N., 2013, pp.2)

In this context, the main existence purpose of a public administration is "improving and preserving quality of urban life". Therefore, it can be said that successful and sustainable urban regeneration processes are

directly connected with “public interest”. In the narrowest sense, public interest is defined the benefit or advantage of the community as a whole. (URL 3) In the broadest sense, public interest is dealing with the social and political principles that form the basis of the constitution. The public interest is called the benefit of society by Doğanay (Doğanay, Ü., 1974, pp.5). As for the benefit of society is the quality of the current layout and profit for all people who live in the country. (Özalp,S., Erkut, G., 2016, pp.237)

Friedmann (2008) stated that urban planners are the defenders of the public interest and pondered whether it is difficult to maintain this condition today. (Özalp,S., Erkut, G., 2016, pp.238) In planning applications, the presence of the stock (existing) public land is a significant tool directing urban developments in spite of market trends. Urban developments can be directed using public land within the framework of public interest, with the proper legal, administrative and participation mechanisms. (Akkar,M., 1996, pp.8)

Defending public interest in the nowadays neoliberal process is more important than ever because;

- public value and services are privatised in favor of capital with each passing day,
- planning decisions are made in the interest of privileged groups instead of the benefit of whole society,
- natural/historical/cultural values are seen as an investment tool. (Özalp,S., Erkut, G., 2016, pp.239)

Privatization is an ongoing trend in many parts of the developed and developing world. In its simplest way, privatization is the process of transferring an enterprise or industry from the public sector to the private sector.(URL 4) Privatization has been raised as a tool of globalization and a political approach. At the core of the application that grows after 1980 is downsizing of the state. Predominately, privatization is carried out a format that transfers resources and usage right.

After discussing some definitions of regeneration, public interest and privatization terms, it is worth drawing a framework for the privatization and regeneration policies enacted after 1980s in Turkey. In 1980’s the rapid urbanization, migration from rural to urban and population agglomeration in urban areas were proceeded as in 1970’s. The neoliberal policies which have started to dominate the western countries in 1970’s also became effective in Turkey by 1980’s. (Öztürk, F. P., Çıracı, H., 2010, pp.6) In this context, effects of globalization triggered privatization applications. The period until 1980, privatization process occurred in different reasons such as; dissemination of private property; creation of the most rational spatial layout; legalization of the occupation of public lands. But after 1980, public lands has been seen as a financial resource for public deficits. With this approach, the state has moved away from the whole social purposes in the production of urban space. (Akkar,M., 1996, pp.8)

In 1982, the Tourism Encouragement Law No. 2634 was enacted to accelerate mass tourism development. The Law induced many private and public entrepreneurs to undertake large amounts of fixed investment in tourism by building hotels, yacht ports, swimming pools, etc and it provided a wide range of fiscal and monetary incentives. It is argued that the incentives that were given to the tourism sector are a result of the adoption of a liberal capitalist economic policy. (Öztürk, F. P., Çıracı, H., 2010, pp.6) At the same year, the “Boğaziçi Law No. 2960” was enacted to remove industries over the bosphorus. Regeneration of

industrial areas that are located in the “Bosphorus Preview Area” to “tourism and accommodation area” was decided with this law.

By the beginning of 1990’s, the rapid economic redevelopment movement of 1980’s appeared as globalization and regional economic integration approach. In this period the urban planning concentrated on social process rather than spatial organization. On the other hand, the big scale redevelopment projects -such as Dikmen valley residential and recreational development project- were commenced in Ankara, İstanbul, İzmir and Antalya. During the 1980’s and the 1990’s, the privatization of public economic enterprises and public estates affected both the industrial and agricultural production and employment levels, especially in small sized settlements, which developed through the state industrial enterprises in 1930’s. (Öztürk, F. P., Çıracı, H., 2010, pp.7)

In 2000, “Urban Transformation Law No.5366” was enacted to renewal/transform depression areas in cities. In this period, urban renewal projects in the squatter settlements and in the districts which lost its function like old industrial and terminal areas, upgrading the residential areas of medium and lower income groups, developing new gated communities out of the city, in/near the forest areas or high-rise buildings in the city center for upper and medium income groups and conservation or gentrification interventions in the historical city centers have been accepted. (Polat, S., Dostoğlu, N., 2013, pp.4)

Public İndustrial Areas’ Regeneration and Privatization in İstanbul

After defining regeneration and privatization throughout the world literature, it is taken into consideration through the mentioned definitions in Istanbul case, since the term had some differences in parallel with changes in lifestyle, models of production and consumption, urbanization strategies. Many developed/developing countries have attempted to restructure major cities, leading in terms of industry, history and culture, depending on changing socio-cultural, technological and economic dynamics since the last quarter of the past century. In that restructuring process, depression areas in the city centers usually have been reintegrated into the city in the way of of physical, economic and social sense via urban regeneration projects.

The above-mentioned processes may be evident in major cities of developing countries and Istanbul is not an exception of this matter. İstanbul, as one of the most vital cities all over the world, has involved this “urban race” after 1980s. With that, firstly urban transformation projects in industrial areas were added to agenda. The abandoned industrial buildings on the shores of Halic began to attract attention at the beginning of the 1990s. Being accessible to city and having monumental architectural characteristics, these buildings constituted a great potential for the new cultural projects. This process, which is visible today throughout the shores of Halic, starting from Perşembe Pazarı to Eminönü, began with the transformation of Lengerhane building into an Industry Museum in 1991. This project was followed by the transformation of Feshane-i Amire, a 19th century textile factory, into a congress and cultural center. Later, Haskoy Dockyards were included into industry museum. The building of a cultural center on the previous location of Sutluce Slaughterhouse, which has been demolished in spite of the preservation council’s report demonstrate the continuity of this process. (Önal, F., Sadri, S., 2007, pp.27)

The effect of all these developments, in particular after the 2000’s, the number of the urban regeneration projects are increased. In this process, earthquake risk and excess of the buildings resistant to earthquake

have played important role. The truth of the 99 Earthquake and political preference in the direction of the economy that based on construction sector are two main reasons at this point. After 2000's, Privatization Administration and TOKİ's authority has been increased with the changes of privatization and housing laws. And the planning authority were transferred to central government from local government.

Urban interventions after the 2000's are concentrated in city center such as Beyoğlu, Şişli, Beşiktaş, Kadıköy and Fatih. TOKİ who has extensive authority with legal regulations realized luxury residences and shopping malls in cooperation with the private sector especially with the help of privatization (law 4046), renewal (law 5366) and transformation (law 6306) laws. Some of the privatization/regeneration project examples that were formed with these laws are Torun Center (privatization of Ali Sami Yen Stadium which is a public land) and Quasar (privatization of Mecidiyeköy Liqueur Factory which is a public land). Add of these, big scale urban projects such as Haliçport, Galataport, Haydarpaşaport that located in the coasts of İstanbul are on the agenda of public opinion particularly with their privatization and application process.

As stated above, in the last period public lands particularly the obsolete public industrial areas in the city center are the most popular areas for regeneration projects. For the solution of this problem, these public lands are privatized by the government. However, privatizing the public lands on behalf of them and transforming these lands to the detriment of "public interest" is criticized frequently by public opinion. In order to critized 'do this projects contain "public interest" or not?' question, recent four examples from İstanbul is chosen.

Mecidiyeköy Liqueur Factory – Quasar İstanbul

Mecidiyeköy Liqueur Factory was one of the first industrial building in İstanbul. (Figure 1) The architect of this building was French Robert Mallet-Stevens who was invited to Turkey in the early years of the Republic. The building was the Stevens' only structure outside France. Factory Building was registered by "İstanbul Cultural and Natural Heritage Conservation Boards No. 2" because of two main features below;

- one of the early examples of Turkey's modern industrial architecture,
- first factory which produce liqueur from natural fruit.

In 2007; head of TOKİ said that the ownership of the Mecidiyeköy Liqueur Factory was transferred to TOKİ. He said that they gave permission to built "convention center, offices, malls and culture center" there. In 2008; İstanbul Metropolitan Municipality was approved the plan change. Two tenders were held for the sale of land. Aşçıoğlu-Ofton-Meydanbey-Omak Construction Partnership winned the second tender with the peak offer (415.750.000 YTL) In 2009; Chamber of Architects sued against to plan/zonning change. İstanbul 10. Administrative Court adopt a motion for stay of execution.

Figure 1 Images from Mecidiyeköy Liqueur Factory and Quasar İstanbul

In 2011; Cultural and Natural Heritage Conservation Board wrote a report against the Project and asked to review the project again. İBB said "The Project is appropriate in terms of aesthetics and placement" to Board. Then, Cultural and Natural Heritage Conservation Boards divided to Cultural Heritage Conservation Board and Natural Heritage Conservation Board. Cultural Heritage Conservation Board decided to preservation of the existing factory building. In 2012; Ministry Of Environment And Urban Planning transffered the approval authority to Natural Heritage Conservation Board No. 4 from Natural Heritage Conservation Board No. 2. The Project was introduced to media. In 2013; the project came on to sale with the name of "Quasar İstanbul". The Project is designed by Emre Arolat Architects.

	Old	**New**
Project Name	Mecidiyeköy Liqueur Factory	Quasar İstanbul
Ownership	Public	Aşçıoğlu-Ofton-Meydanbey-Omak Construction Partnership
Function	Industry	mix used (residence, office,shops)
Tender Price	-	privatized 415.750.000 YTL
Urban Identity	one of the first industrial building in İstanbul	mix used (residence, office,shops)
Public Used	-	-

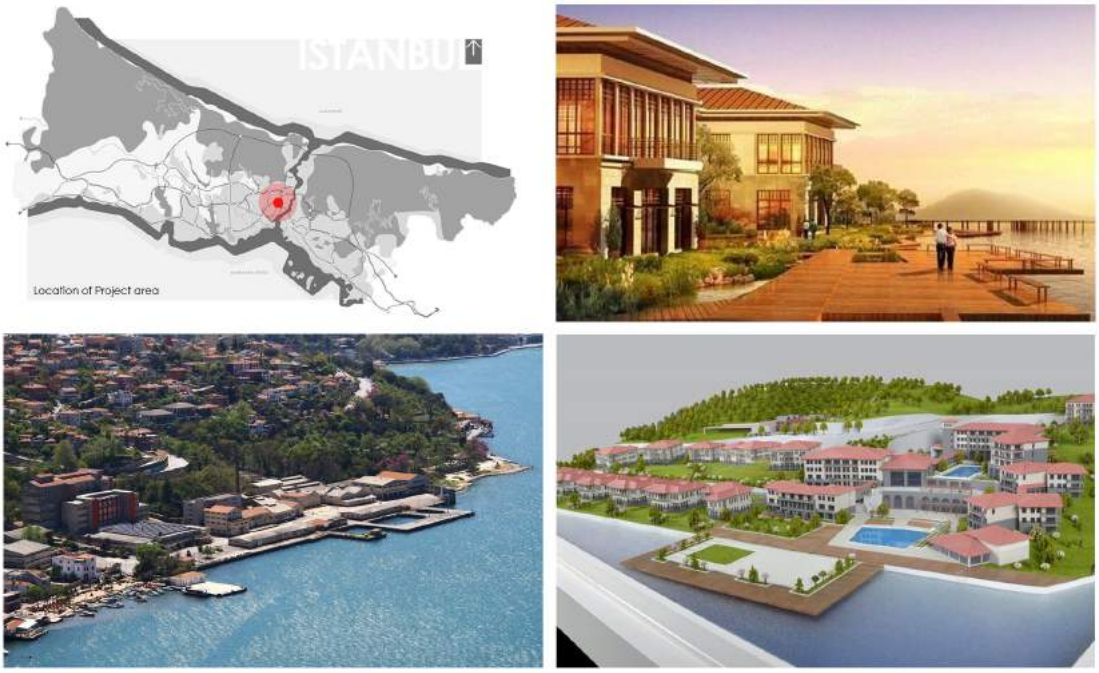
Table 1. Informations about Mecidiyeköy Liqueur Factory and Quasar İstanbul

Quasar İstanbul started in February 2013 locates very close to Mecidiyeköy Square is an urban transformation project. It is a mix-used one including residence, office and shop functions. Total land area is 23 bin 700 m² and total construction area is 189 bin 620 m², and it shows that it is one of the biggest projects in the city center of Istanbul. (Table 1)

Paşabahçe Tekel Factory – Torunlar GYO Otel

Paşabahçe is one of the main residential area of Beykoz a long time due to the presence of Şişecam, Tekel and Beykoz Deri Kundura Factories. After the proclamation of the Republic, industrialization activies accelerated in İstanbul. First "Türkiye Şişe ve Cam Fabrikaları Anonim Sosyetesi" was establised in 1934. Then "Paşabahçe Rakı ve İspirto Fabrikası" was established in 1939. With the establishment of factories, intense migration movements happened between the years of 1940-1970 in this region. In this process gecekondu neighboorhoods occured on the public lands. These factories were the center of the social life in Paşabahçe at the same time. Şişecam ve Tekel Factories' beaches, social clubs and cinemas were the favourite meeting places of Paşabahçe residents. (URL 5)

Figure 2 Images from Paşabahçe Tekel Factory and Torunlar GYO Otel



After the privatization policies in 2004, Tekel Factory was closed claimed that it didn't profit. After the factory closed, two tenders were held for the sale of land. In 2012, Torunlar GYO winned the second tender with the peak offer (355.000.000 YTL). With that offer also permission to use of 3935 m² pier and filled area were transferred to Torunlar GYO until 2057. In 2016, Paşabahçe Tekel Factory Buildings were demolished. In that process, a historic church was also destroyed in the factory and 500 meters beach was closed to public in the land of the factory. (URL 5) New Project will be an urban resort hotel that design with ottoman style villas. Total land area is 75 bin 844 m² and total construction area is 64 bin 633 m², and it shows that it will be one of the luxury hotels on the coast of the Bosphorus. (Table 2)

	Old	New
Project Name	Paşabahçe Tekel Factory	Uncertain - Hotel
Ownership	Public	Torunlar GYO
Function	Industry	Urban Resort Hotel
Tender Price	-	privatized 355.000.000 YTL
Urban Identity	the favourite meeting places of Paşabahçe residents.	Ottoman architecture lux hotel
Public Used	beaches, social clubs and cinemas	-

Table 2. Informations about Paşabahçe Tekel Factory and New Hotel

Cevizli Tekel Factory – Şehir University

Cevizli Tekel Factory that was the epicenter of the Tekel with the factories, stores and social facilites was established in 1969. Hovewer cultivation of tobacco is older than this factory. Drama immigrants who established an institue produced tobacco and seed breeding studies in 1931's in that region. Cevizli factory land that spreading over a huge green area adjacent to the sea was registered as a third-degree natural heritage site in 1999. There are 4200 unit trees in many different types and all of them are

Figure 3 Images from Cevizli Tekel Factory and Şehir University

registered by "Cultural and Natural Heritage Conservation Board". Besides, archaeological excavation is being done in the section of the area (207 field). 207 field was registered as first-degree archaeological site.

Cevizli Tekel Factory Land that was under the protection of due to the industrial heritage, archaeological excavation area and plant diversity was chartered "Şehir University" for 49 years. Şehir University was established by Science and Art Foundation. It's first campus was in Altunizade. In 2017, it moved to Dragos Cevizli Tekel Factory land. Total land area is 115 bin m² and total construction area is 300 bin m², and it shows that it will be one of the luxury hotels on the coast of the Bosphorus.

	Old	**New**
Project Name	Cevizli Tekel Factory	Şehir University
Ownership	Public	Science and Art Foundation
Function	Industry	University
Tender Price	-	chartered for 49 years.
Urban Identity	natural heritage, first-degree archaeological site.	University
Public Used	public housing, social clubs	-

Table 3. Informations about Cevizli Tekel Factory and Şehir University

Haliç Dockyards (Tersane-i Amire, Taşkızak, Camialtı and Haliç)- Haliçport

With a history of 550 years Haliç Dockyards that was one of the most important examples of industrial heritage were establised in 1455 by Ottoman Sultan II. Mehmet. Haliç Dockyards became the production center of the many shipyards from the construction of first steam ship, submarine ships and warships in the Ottoman period to today's fery production. After the Republic, Haliç Dockyards were renewed and modernised and was decided to maintain the main function. In 1980's, İstanbul Great Municipality took decision to clean up the area from the factories for damaging the coasts. In this process some shipyards moved to proposed industrial areas and some closed. In 1993, production in the dockyards were discontinued on the grounds that they were losing money.

After the factories closed, In 2013, firstly Dockyards were privatised and then they were put out to tendered for 49 years with the name of "İstanbul Haliç Marina and Complex Project". "Sembol İnternational Investment and Ekopark Tourism-Fine Hotel Consorsium" winned the tender with the peak offer (1.346.000.000 Dolar). Haliç Dockyards were emptied in October 2014.

Figure 4 Images from Haliç Dockyards

In March 2015, the land was announced as a "Special Project Area" by Ministry Of Environment And Urban Planning. The Project is designed by Teğet Architects. In the project, there are two yacht marinas (totaly 140 yacht capacity), two five-star hotels (totaly 800 rooms), mosque (for 1,000 person), AVM and car park.

	Old	**New**
Project Name	Haliç Dockyards (Tersane-i Amire, Taşkızak, Camialtı and Haliç)	Haliçport
Ownership	Public	Sembol İnternational Investment and Ekopark Tourism-Fine Hotel Consorsium
Function	Industry	yacht marines, mix used
Tender Price	-	privatized 1.346.000.000 Dolar management chartered for 45 years
Urban Identity	industrial heritage	yacht marines
Public Used	-	-

Table 4. Informations about Haliç Dockyards and Haliçport

Conclusion

Privatization is an ongoing trend in many parts of the developed and developing world and has been raised as a tool of globalization and a political approach. Defending public interest in the nowadays neoliberal process is more important than ever because; public value and services are privatized in favor of capital with each passing day, planning decisions are made in the interest of privileged groups instead of the benefit of whole society and
natural, historical and cultural values are seen as an investment tool.

İstanbul is an extremely good example of privatization and regeneration policies mentioned above. Each passing day, new public properties are being sold and rant which generated with these sales creates serious problems in city. Privatizations that made with the motivation of creating resource generally are seen in the urban centers. These customizations may seem in public for the purposes but they enable to converted the public interest to private interest and publicity to special one. (Kahraman, T., 2010, pp.67) The urban interventions that violate public interest in İstanbul examined as a whole;

- privileged zoning rights,
- privatization of public lands/public used,
- transferring property rights,
- destruction of natural/historical/cultural areas/assets,

are not in the public interest and they can be seen as the "red lines" of public interest. (Özalp,S., Erkut, G., 2016, pp.248) As a result; under all these circumstances, defending public interest and providing it's sustainability is so difficult today. Even so, urban development polices can be directed using public land within the framework of public interest, with the proper legal, administrative and participation mechanisms. Public lands are an oppurtunity to create "new public spaces" for overpopulated metropoliten cities such as İstanbul. And they must be regenerated for this purpose. In this context, it is ironic that on the one hand while the public lands that are located in the major spot of the city are privatized, on the other hand public spaces that were constituted with filling the coasts in different points of the city.

Addition Table. Informations about whole projects

Project Name		Ownership		Tender Price		Function		Urban Identity		Public Used	
Old	**New**	**Old**	**New**	**Old**	**New**	**Old**	**New**	**Old**	**New**	**Old**	**New**
Mecidiyeköy Liqueur Factory	Quasar İstanbul	Public	Meydanbey-Omak Construction Partnership		privatized 415.750.000 YTL	Industry	mix used (residence, office,shops)	one of the first industrial building in İstanbul	mix used (residence, office,shops)		
Paşabahçe Tekel Factory	Uncertain	Public	Torunlar GYO		privatized 355.000.000 YTL	Industry	Urban Resort Hotel	places of Paşabahçe residents.	Ottoman architecture	beaches, social clubs and cinemas	
Cevizli Tekel Factory	Şehir University	Public	Private-Science and Art Foundation		chartered for 49 years.	Industry	Foundation University	degree archaeological site.	University	public housing, social clubs	
Haliç Dockyards	Haliçport	Public	Tourism-Fine Hotel Consorsium		Dolar chartered for 45 years	Industry	yacht marines, mix used	industrial heritage	yacht marines		

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BEYOND UNPLANNED CITY: GOVERNING URBANIZATION IN POST-SOVIET TBILISI THROUGH NEW HOUSING DEVELOPMENTS

ELENA DARJANIA

Abstract

The dichotomy of “planned/formal” and “unplanned/informal” urbanizations became a widely accepted part of vocabulary for academia, national and international organizations. These two opposite categories distinguish not only different types of economy and political processes, but also a methods of city planning. The case of post-soviet Tbilisi, Georgia is particularly challenging. After the collapse of the centrally planned system, the capital and the largest city in the country was left without any comprehensive plan for about 25 years. Newly emerged real estate market and its construction become the main driver of productive capital. It produced a class of homeowners with the distinctive types of social and economic relations. To manage the process, a new set of formal and informal protocols of city administration was produced. Consequently, this created a fruitful ground for emergence of a distinctive type of housing – ‘karkasi’, which currently predominates today’s urban landscape. By investigating a new housing typology in relation to urban governance, the paper delineates how the smallest scale of the city - housing unit – actually ‘formed’ today’s Tbilisi. Most importantly, it shows how architectural type replaced the conventional planning and instead turned to be a tool of a bio-political control and governance. Ultimately, the paper problematizes the “un-planned” urbanization by classifying this method of urban design as an essential part of a complex political project.

Keywords: Urbanization, unplanned city, post-Soviet city, housing

THE SPATIAL IMPACT OF THE UNIVERSITY OF WORCESTER ON THE CITY OF WORCESTER

NASTARAN NAMVAR, GLEN MILLS, AMIRA ELNOKALY

Abstract

This paper discusses the reciprocal spatial impact of the University of Worcester and the urban space in the city of Worcester, in United Kingdom (UK). Urban space transformations can include the physical and social changes of the city; this transformation includes the social composition and the socio-cultural dynamic of the community. One of the important relationships pertinent to spatial-cultural dynamics in many UK cities is the physical comparison between the university and the city. As universities contribute increasingly to the local economy through research, reputation and the creation of capital infrastructure in the form of campus development, they are seen not only as educational and cultural institutions, but they are also viewed as a mainstay for urban transformations.

Worcester is a historical cathedral city, based in the county of Worcestershire, England, 31 miles (50 km) southwest of Birmingham and 27 miles (43 km) north of Gloucester. The origins of Worcester's new city lie in the foundation of Burg by the Bishop of Worcester and the Mercian Royal family in the period 809-899 AD. Worcester sits at the head of the tideway of the longest river in Britain and is notable for its ancient bridge, which has first been built by the Romans.

The University of Worcester was founded in the post-war period of 1946, although the university was not granted full university status until as recently as 2005. One of the noteworthy impacts that the University of Worcester has had on the city has been the new city centre library, which was built in collaboration with Worcestershire County Council. The Hive, as it is known, was opened to the public by HM Queen Elizabeth II in her Diamond Jubilee year (July, 2012). This library was the first in Europe to be designed as a combined public and university library. As such, the Hive offers a rich variety of resources for University of Worcester students, researchers and local people.

When considering Worcester as a case study, it is obvious that the University of Worcester has had an impact on the social relationships within the city. However, the issue of how the

The University of Worcester has transformed the socio-economic spatial environment of the city is also important to consider. Such alterations are indicated by the spatial integration and connectivity between the campus and city, although this is a complex phenomenon, and it is dependent upon physical components such as the location of the university, and how the campus merges with the city surrounding it. The paper aims to identify those socio-spatial relations between the University of Worcester and Worcester city. It does so by utilising Space Syntax techniques as a basic method for investigation and analysis. The paper concludes that the campus does influence the spatial configuration of the city.

Keywords: City; campus; spatial transformation

EFFECTS OF URBAN TRANSFORMATION ON QUALITY OF LIFE

TAYFUN SALİHOĞLU, NİLAY COŞGUN

Tayfun Salihoğlu, Assistant Professor Dr., Gebze Technical University, Department of Urban Planning,

Nilay Coşgun, Professor Dr., Gebze Technical University, Department of Architecture

Abstract

Urban transformation is described as "sum of strategies and actions that is implemented via wholistic and comprehensive approaches, to increase physical and environmental conditions of deppresive urban spaces."(Kentsel Dönüşüm ve Bursa Raporu, 2008).

The aim of urban transformation is;

- To solve physical and social problems of cities,
- To meet physical, social, economic, environmetal and infrastructural needs of cities as consequences of rapid grew and change,
- To implement development plan to increase life quality and prosperity of the city which has lost its viability,
- To plan urban policies that include participation of public and private sector and NGOs (Robert and Sykes, 2000)

Because of the social, spatial and economical problems of cities and the earthquakes exposed, it is getting difficult to define the precendence of spaces in terms of urban transformation. Consequently, new problems arise during and after the urban transformation in several parts of cities. With this study, urban transformation process in İstanbul/Kadıköy providence and its effects on quality of residents' life is examined. Social problems increased by urban transformation and environmental, health and traffic problems based on building management have explained with cases.

Because of the parcel level urban renewal that is most common around Kadıköy, has not been comprehensively planned, it is quite possible that quality urban houses around Bağdat Street have a risk of decline on livability. In spaces between the Street, shore band and railway, existing positive conditions in terms of building-parcel relation, densities and building height is changing negatively by construction of every new apartment. While densities gradually increase, urban infrastructures stay still. This situation leads to traffic congestion, insufficient technical infrastructure and owercrowding problems in public spaces.

Other problems such as environmental and noise pollution by dust, mud and soil spreaded to streets and public spaces by demolition works, accident risks by excavation trucks, walking and driving difficulties on bad road surfaces have also been experienced in the neighborhood.

Bağdat Street and its immediate surrounding is also a lab for the theories that economic policies only focus on construction industry may lead to housing crisis. House prices and amenities in this part of the

city is affordable only small amount of the society. Because of the fluctuations on currency and interest rates, low demand to these houses in these days stay longer than before.

Rather than solving urban problems, urban regeneration practices in Bağdat Street makes them more complicated. Considering regeneration works take minimum five more years, urban transformation lowers the quality and prosperity of urban areas in this process. Negative effects of urban transformation continues to increase if an effective planning, organisation and supervision mechanism is not commisioned.

1. Intro: Urban Transformation and Bagdat Street

Transformation of urban space refer to the changes of urban dynamics by various reasons. In this context, to understand evaluation of urban transformation and its effects, it is essential to realize economic, legal, administrative, social, cultural and spatial changes in urban fabric as well.

Many theoretical studies on the concept of urban transformation with different perspectives have been carried out in urban studies literature. Roberts and Sykes (2000) indicated that there were five concepts of transformation under the concept of urban transformation in the historic process: re-construction, revitalization, renewal, re-development, and regeneration.

After the concepts such as reconstruction of urban areas after World War II in 50s; slum revitalisation in 60s and renewal of urban core in 70s, domination of globalization and neo-liberal policies in 80s, open new era for the urban transformation concepts. The transformation of urban areas has entered to a different process since the last quarter of the past century. The discourse of “globalization and neo-liberalism” which is explained under the topics of increasing international economic activities, capital mobility, new administrative structuring, new social classes and production of space tell us that these concepts require spatial transformations in city scene. “Redevelopment” and “gentrification” practices were performed in city centers and hereby housing zones. Thus, city centers began to address new service sector and high-income groups. It helped cities have a voice on a global scale. “Regeneration” projects, which are extensive practices aimed at finding a permanent solution to economic, social, cultural and physical problems of deteriorated areas in 1990s, were added to the agenda.

Altough the concept of urban transformation taking part in world literature with different conceptualizations since the 1950s, it is brought to agenda just in 1990s and 2000s in Turkey. The urban transformation taking place as a solution to the problems of inner cities and deteriorated urban parts which the house holds with low income live mostly has become to lose its legitimacy depending on economic-politic changes experienced recently.

The urban transformation taken place in a legal extent with Law no. 5104 on North Ankara Entrance Urban Transformation Project Law enacted in 2004 extended its executive area with law no.5366 on Protection of Damaged History and Cultural Immovable Existence by Renewal and Usage by Being Lived and law no.5399 73rd article of Municipality Law. Many urban transformation projects, which weren’t discussed as a part of a plan with a holistic view, rather market conditions were determinative, were put into practice by municipalities and private sector. Projects centered in the areas where expected rent profits were high (Özden, 2008; Genç, 2008). That kind of transformation practices create negative reactions in terms of gentrification, displacement of weaks, social justice, controlled handovers via public management, loss of cultural diversity and incomprehensive approaches of plans to these areas.

“Law no.6306 on Transformation of Areas under Disaster Risk” which is known as “Urban Transformation Law” went into effect in 2012. The most dramatic results of this legislative regulation which create new

problems rather than providing a solution were experienced in Istanbul that is the most risky region of Turkey in terms of the number of risky buildings and people living. Although many districts in Istanbul are not resilient to disasters, most of the transformation in the city is practices in the places which don't need an immediate intervention. Fastest transformed districts in the city are the places with highest real estate prices, such as Kadiköy, Şişli, Beşiktaş, Etiler.

Because of the principles of the Law which hardly approaches the concept of disaster and its efffect as region wide problem, parcel-level transformation practices have accelerated in these parts of the city. In Kadıköy distrcits, Bagdat Street and its immediate surroundings are the places that parcel level urban transformation is the main renewal tool after the Law No. 6306.

Bagdat Street is in Kadıköy district, one of the oldest settlements of Istanbul, was founded around Haydarpaşa and Moda (B.C. 675). After 30s, the district expanded with large gardened residences to the Bostancı along with Bağdat Street. High-income groups have internalized the region since 1970s. Within this period, housing demand increased in the linear line between Minibus way - Bağdat Street and the Coastal Road. Green texture decreased gradually, population density increased and finally it became a texture which has highland values with detached apartments.

One of the most important city centers of Istanbul, Bağdat Street, as a major connection between life and work, land and water, and people and activities, has come to represent one of the many faces of Istanbul's urban life (Lotfata, 2014).

Besides the Street, streching between Kadikoy and Maltepe districts for nearly 14 km on Asian Side of İstanbul, is one of the most popular destionations for shopping and every day life, it is also a livable housing area comparing to other parts of the city. The avanue is pedestrian friendly, with large sidewalks and one way vehicle traffic. It is not only serve to people residing immediate surroundings, but it is an attractive place for vistors from other areas in the city.

Figure 1. Aerial View of Bağdat Avenue

Neighborhoods around the Street contain highest income families and comparing to most parts of the city, quality of urban life is higher in these neighborhoods.

Altough the area contain quality of places mostly, lack of a comprehensive plan and public management methodology on parcel level trasformation in Bagdat St. result various problems during the renewal

process of each building. Therefore, the aim of this study is to determine and explain the main problems in urban transformation process in Bagdat St. with qualitative content analysis.

2. Methodology

Content analysis is a research tool used to determine the presence of certain words or concepts within texts or sets of texts. Researchers quantify and analyze the presence, meanings and relationships of such words and concepts, then make inferences about the messages within the texts, the writer(s), the audience, and even the culture and time of which these are a part. Texts can be defined broadly as books, book chapters, essays, interviews, discussions, newspaper headlines and articles, historical documents, speeches, conversations, advertising, theater, informal conversation, or really any occurrence of communicative language.

(http://www.umsl.edu/~wilmarthp/mrpc-web-resources/content-analysis.pdf).

Content analysis is a widely used qualitative research technique. Rather than being a single method, current applications of content analysis show three distinct approaches: conventional, directed, or summative. All three approaches are used to interpret meaning from the content of text data and, hence, adhere to the naturalistic paradigm. The major differences among the approaches are coding schemes, origins of codes, and threats to trustworthiness. In conventional content analysis, coding categories are derived directly from the text data. With a directed approach, analysis starts with a theory or relevant research findings as guidance for initial codes. A summative content analysis involves counting and comparisons, usually of keywords or content, followed by the interpretation of the underlying context. (Hsieh and Shannon, 2005)

3. Quality of Life Problems during the Urban Transformation Process

The unstructured interviews, notes from the study area and newspapers are the main materials of the content of this study. Livability problems during the urban transformation process around Bagdat St. such as, social and justice problems, environmental and health risks, traffic congestion and accident risks, dramatical increase and decrease in house prices, increase in population density and its pressure on urban services etc. have identified from the study materials (Figure 2).

Figure 2. Quality of Life Effects of Transformation Process in Bağdat Avenue

Social Problems and Legal Effects

Before the law on the urban transformation, some renovation practices were also being carried out at the parcel level in the region. However, some new regulations were made with the law in order to make the transformation process easier. The rule of 2/3 of the law has caused some legal and social problems encountered in reality.

Before this law, the biggest problem of the contractor who was working in the area was that the buildings couldn't be renovated if just one of the occupants didn't give permission. With the new law, it is adequate that 2/3 of the occupants agree with the transformation decision. Although it seems as if 1/3 of the occupants in only one building could be "ignored," the reality shows that transformation decisions are made without the consent of 30% of the population considering the street and its peripheral scale.

On the other hand, given that nearly every building was voted to be demolished, how it came to be that 2/3 majorities were found, is a matter of speculation. The answer is that the contractors who bought a flat in these buildings were involved in some shady works, such as making the others worried by receiving a dangerous building notice from the municipalities or making an agreement with the owners who have a voice in the apartment in order to have the majority. Moreover, there are cases that the contractors tried to make the occupants fed up with noise and dirtiness in the apartment by removing the doors and windows of the flats they owned.

In the news of Yeniçağ Newspaper, Ali Güvenç Kiraz, the founding chairman of the foundation of real estate law, explains the relationship between contractors and owners.

"The contractor comes to an apartment and somehow he buys a flat with the help of the building superintendent or already has one. After having a flat there, he manages to find the two-thirds majority. He does something to manage it. He threatens with the occupants with demolishing the building, leaving them without a house unless they agree with him. Therefore, mostly old people who don't know anything about their rights fall into his trap. When he founds the two-thirds majority, the rest of them are threatened with the same. But he has the two third. What I mean is, he can do it. At the same time, he tries to make an agreement with the one third. 'I'll sell your share by auction. There is an article for that in

the law. If you don't agree with me, you will have..." he says and tells them what they will have. This is one of the biggest problems of the applicable law, the rule of 2/3 is applied in a wrong way". (www.yenicaggazetesi.com.tr/kentsel-donusum-kabusa-donustu-94346h.htm)

As a result of such a system, the occupants are insisted on living for 40-50 years in their new flats which they are not happy with their floor plans and apartment spaces. The applicable law doesn't give the ones who don't want to accept this situation a way out, except for some alternatives, such as a short reclamation period and buying their flats.

These people, most of them are old İstanbulites, may try to find alternative places in case they won't be happy in their new living spaces. Although the displacement of the residents is the common problem in low income neighborhoods mostly, it is clearly interesting to see the similar pattern in an upper income housing area in İstanbul.

Another legal aspect of urban transformation emerges after the transformation when the shares are distributed. The real estate agents in the area stated that since the flats were sold for the same prices in the early stages of the structuring in the area, which corresponds with the 1970s but their land shares on the deed were distributed very differently, this situation now causes indignation during the renovation.

"...The land share of the person was distributed unjustly in 1960 and 1970. The first contractor got the big share for himself. Before fixing it, it is impossible to solve the problem. Since there is a problem, everyone needs to apply to the court and file a lawsuit. When they apply, the judge decides on the injunction. When he decides on the injunction, the law on urban transformation stops. If he doesn't decide on the injunction, it becomes impossible to build a new apartment because of the disproportional land share. There comes a problematic building process. Because it is a must to arrange the land share. This is a very big problem in urban transformation we are facing with..." (www.yenicaggazetesi.com.tr/kentsel-donusum-kabusa-donustu-94346h.htm)"

Experts also underline that the transformation process may lead to social problems if it is constructed in a context that changes the bonds established by the individuals and the society with living spaces, such as Bağdat Avenue and its surroundings.

"*In the process of urban transformation, it can be said that we face not only with a spatial reflection of an economic system but also some changing situations in society where considering the community-specific lifestyles individuals have more superficial and secondary relationships in terms of building social relationships, where they don't have personal relationships because of their rapid lifestyles, where they can't build trust with each other and where the old neighbourhood relations disappear day by day. As a result of implementing the law on urban transformation, people living in the same neighbourhood for years with their ancestors, families and neighbours are obliged to immigrate to more economic settlements instead of moving into their freshly-built buildings due to the fact that they can't afford the new projects in the city centres, maintenance fees, and new expenditures. These all may cause unhappiness and depression for family elders who might work a lot throughout the life in order to keep their families together, and families to fall apart because of the disagreements among family members."* (http://www.kentseldonusumdergisi.com/kentsel-donusumun-sosyal-boyutu/)

Effects on Environment and Public Health

The malfunction and lack of control in the planning of the demolition work in the area threaten the physical and mental health of people living in the area and also the visitors, and cause environmental and

noise pollution. In Bağdat Avenue and alleys, accidents involving death occur because of the earth, mud and flying dust, nonstop demolition noise and earth-moving trucks.

In fact, the locals have raised an objection for the lack of planning in the demolition process in the street and its surroundings by running an online campaign on a web page (Change.org) which helps create awareness and shares social requests with governances.

Figure 3. Environmental Effects of Demolition Works

"Especially people in Kadıköy suffer from the urban transformation for two years. Some people died because of the earth-moving trucks in a place like Yoğurtçu Parkı...

...The construction equipment noise starts at 7.00 AM, the environment is in a mess and dirty...

...People from Kadıköy are faced with losing their mental health. They can open neither the windows nor the doors because of the long-lasting constructions and extreme noise. They may have to live together with these difficulties because of this renovation process."

During the demolition of buildings, there is a risk of encountering situations that threaten people's lives in the long term as a result of the diffusion of the *asbestos* that was allowed to be used as a building material in the past. In the transformation process, the impacts of asbestos and other building materials on people's life and environment are emphasized a lot by the associations.

An authority from the UCTEA Chamber Of Chemical Engineers states:

"Buildings have pollutants and noxious chemicals such as radiation, carbon monoxide, radon, sulphur dioxide, microorganisms, asbestos, tobacco smoke, formaldehyde, insects and nitrogen oxide that we can't realize. So during the urban transformation process, it is essential to consider all of these hazards that buildings will eject and take precautions...

The biggest danger of urban transformation is demolitions without purifying the asbestos and throwing the material with asbestos into the bins and rivers instead of sending it to the licensed facilities." (https://www.evrensel.net/haber/325811/kentsel-donusumde-asbest-tehlikesi)

Although authorities control the asbestos during the demolitions in Kadıköy, experts think that it is not enough.

The Chairman of The Commission on Environment of The Medical Chamber says:

"Detecting the asbestos and demolishing it accordingly is not enough either. Because even how to destroy it is a problem. Asbestos causes respiratory diseases, especially mesothelioma and lung cancer."

Figure 4. Asbestos as Building Materials

"In addition to asbestos removal rules which must be obeyed separately in every building in the urban transformation areas, regular environmental measurements should also be carried out in these areas. As in the urban transformation process in Istanbul, inaccurate removals cause more fibre to be released around." (http://www.hurriyet.com.tr/kentsel-donusumde-asbest-tehlikesi-40514330).

In addition to the numerous practices which restrict the right of living a dignified life in the city and cause physical and psychological diseases, it is seen that people cannot feel comfortable even in their homes because of noise, dust, and environmental pollution.

Decrease in Accessibility

Trucks and construction equipment used in the non-stop construction and demolition work at different points cause significant traffic problems for the Avenue and its surroundings, which is also an attraction centre at the regional scale.

Observational investigations in the field from a newspaper are reported as follows:

"*The avenue and streets are like a huge construction site. Trucks and construction equipment working in the daytime block the traffic in the avenue and alleys. It also affects the number of visitors*" (https://www.sozcu.com.tr/2017/ekonomi/bagdat-caddesinde-dukkanlar-tek-tek-kapaniyor-1707875/)."

Figure 5. Traffic Problems Caused by The Trucks

There is another campaign running for that. When the campaign text was prepared, it was signed by 1350 people. It explains the traffic problem caused by the urban transformation process on Bağdat Avenue and its surroundings:

"The traffic in Bağdat Avenue has become unbearable. There are not any means of transportation except for cars in this avenue. Going from Bostancı to Kızıltoprak now could take 1 hour. There are cars parking on both sides of the avenue. Due to truck density, construction work during the daytime and lack of control for this process have left the avenue unattended. Since our district has become a construction site now, it is more difficult to go to work in the morning and come back home in the evening. We have to take a different road every time because of the non-stop construction work and blocked roads in every street and don't know which road to choose." (https://www.change.org/p/kadiköy-ümüzü-geri-istiyoruz-trafik-ve-gürültü-çilemize-çözüm-getirilsin).

Figure 6. Risks on Pedestrian Safety

Kadıköy Life, another local news source for the district, states that the urban transformation has negative impacts not only on vehicles but also pedestrians and disabled people in terms of accessibility:

"...In most avenues and streets where demolition and construction still continue, the pavements are totally or partially blocked. The biggest danger waiting for pedestrians now is traffic accidents because they don't have any other alternative than walking where the traffic goes...

...Using pavements is almost impossible in Kadıköy for disabled people who walk with the help of a walking stick or a wheelchair...

...pedestrians are worried about having accidents due to the equipment which may fall from constructions, and being severely hurt" (https://www.kadikoylife.com/kaldirimda-yurumek-artik-luks/)

Effects on Real Estate Market

Bağdat Avenue and its surroundings could also be a good laboratory for the theories emphasizing that policies wake the construction industry may cause a housing crisis later.

After the law, since the economy of the country also created a suitable environment, many buildings were renewed in the area. Flats and shops in new buildings were rented and sold at high prices, which also affected the other buildings in the area. As a result of this increase, Kadıköy has become the most valuable district of Istanbul with a unit price of 18960 TL/m2 (http://www.hurriyet.com.tr/ekonomi/istanbulda-metrekare-fiyati-en-yuksek-ilceler-arsa-degerleri-yuzde-35-artti-40741550).

The effects of this increase in fair value on the real estate market have been seen as a decrease in demand. Many owners had to shut down or move their shops due to the high demands for rent. According to a survey conducted by a newspaper, it has been determined that the big stores and showrooms on the ground floors of buildings on the avenue are shut down, and the results have been revealed by the interviews with the old tenants:

"People come to visit but the rents are very high. Our landlord is merciful but the rent for big stores are 100k or even 150k TL per month. The ones who can't afford the personnel expenses and the rent have to shut down. The restaurants have not been affected a lot but the textile stores have been affected. Most banks moved their branches to the alleys."

Figure 7. Vacant Shops on the Street

It has been determined in the survey that people still prefer the avenue to have a walk but at the same according to a liquor store, the demand for goods and services has fallen down in the avenue:

"The ones who come here to have a walk don't buy anything. Now they come, eat and go. The real customers of these shopkeepers were the locals living in the avenue but it has been 2 years that they don't shop here. For a cheaper shopping, they go to the bazaar in Fikirtepe or the shopping malls in Ataşehir. That's why we have lost "the market" that we used to have before." (https://www.sozcu.com.tr/2017/ekonomi/bagdat-caddesinde-dukkanlar-tek-tek-kapaniyor-1707875/)

On the other hand, the construction companies in the area, which used to be able to run 2 or 3 projects at the same time, now work on many more projects with an expectation of profitability considering the atmosphere of today. In the area, the average flat price is almost 2 million TL. As a result, it has been seen that construction companies have tried project sales in order to meet the financing of numerous projects that they own. This system has succeeded until very recently due to the continuity of the housing demand by the upper-income group; however, the housing demand now falls behind the speed of today's construction movements. As a result, it has been observed that there are problems with not being able to sell the flats that only a very small part of the society can afford. Different actors have also stated that the decrease in housing demand has caused decreases in values in the area and contractors' share on agreements over the last few years.

Melih Tavukçuoğlu, The Chairman of The Contractors Foundation in The Anatolian Side (AYİDER), explained the reasons for decreases in prices in popular locations like Göztepe, Caddebostan, and Suadiye:

"...The rapidly increasing prices in Bağdat Avenue due to the land costs up to 85% have been declining for the last two years. The average decrease is 30% but in some areas, it is more than 40%...

...Especially the old contractors in Bağdat Avenue don't have problems with sales. The construction companies, which are not familiar with the area, have just become contractors and have financial problems, have difficulties now. Previously, there were 100 contractors in the area, and now there are 500. The fact that these companies pledged the owners more than they could in order to get the job has caused a rapid increase in prices...

The selling speed of apartments has begun to spread over a longer period compared to the old days. Projects previously sold from the ground can now be sold after the project is completed

...Comparing to the past, it takes longer to sell apartments. the projects which used to be sold in the gorundwork process now can be sold after they are completed." (https://www.dunya.com/ekonomi/bagdat-caddesinde-fiyatlar-eridi-haberi-404570)

Another problem that affects the real estate market is the financing problem that companies with many projects are facing with. As a result of this problem, extended construction times, suspended constructions or requesting financial support from the owners, which used to be seen a lot in the past in many co-operative production systems, can be given as interesting examples that the upper-income group suffers from as well.

A newspaper conveying the situation in the area has revealed the severity:

"...Almost 100 projects in the area have stopped or are progressing very slowly. Assuming that there are an average of 20 buildings in every project, it shows that about 2000 buildings in the area are in a difficult situation. The flat owners are in search of a solution for their uncompleted projects to be completed.

...Those who have a letter of guarantee and those who don't have a letter of guarantee try to complete the construction by collecting money with their own efforts. Some of them don't receive rents and continue with the project very slowly..." (https://www.dunya.com/ekonomi/bagdat-caddesinde-donusum-enkazi-haberi-392228)

Additional Pressure on Urban Services

Since the parcel-based transformation practices which overtake the whole area remove a holistic planning and design, the possibility of becoming an unliveable place increase in one more of the few residential areas with a high urban space quality in Istanbul. In the part between the avenue and the coast with the railroad, the fact that the positive features in terms of building – lot relation and building density -height are getting lost with each reconstructed building in terms of urban infrastructure - density relation. A parcel level transformation model resulted in the increase of density and height in most areas without considering the transportation and urban equipment will lead to decreases in spatial quality in parallel with the construction movement in the area.

Figure 8. Pressure on Urban Services

"*...It is thought that population will seriously increase periodically and lead to a serious traffic chaos, parking problems and decrease in life quality. The fact that demolition and reconstruction process in every alley shows that a stressful urban "untransformation" is waiting for us for the next decade."* (https://www.kadikoylife.com/kadikoy-hafriyat-canavarlari-ve-plansizliga-teslim/).

4. Discussion

Since the urban space has become the most important means of the capital accumulation, there is a serious transformation pressure where the rent potential is high in order to create new investment and funding opportunities for the capital but not to meet the real and urgent needs. Spatial policies built on "the best use" and "the most rent return" of city land base their legitimacy on that these transformations will increase economic returns by creating new investment areas, create labour force, have consequences

for the benefit of society, will protect and help maintain historical centres and help have disaster-resistant buildings (Türkün, 2014).

However, the prevailing practices show that city is in the focus of big national and international investments and the increasing value of city land has increased the pressure on urban transformation. Bağdat Avenue, one of the living spaces where these urban transformation pressures in Istanbul are intensively seen, now experiences many problems that also threaten the life quality of residents due to process management, free market conditions and lack of some fundamental ethical and moral codes.

With the help of field notes and external sources, in this study, which compiles the researches done within the context of the results related to Urban Transformation, Bağdat Avenue, and Life Quality, a number of featured content have been found. These contents are expressed below as the most common keywords.

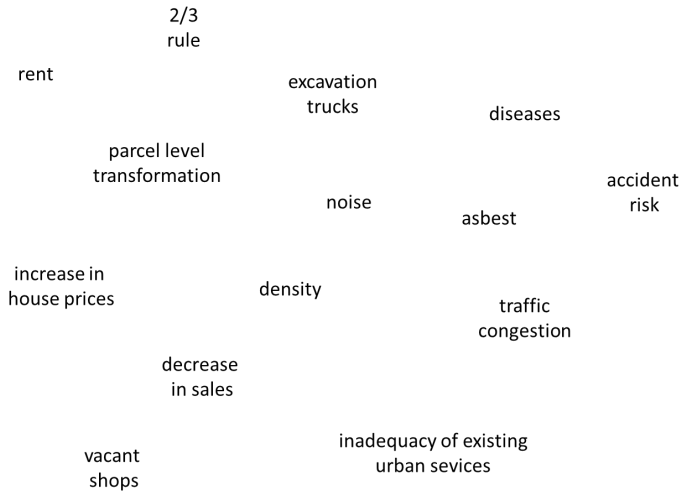

Figure 9. The Content of Quality of Life Problems during Transformation Process

Undoubtedly, it is possible to extend these findings to further research. However, even those mentioned in this text show that the search for a solution to urban transformation with a law and regulations without considering spatial and structural differences have negative impacts on the residents of Bağdat Street and its surroundings.

It is clear that the spatial regulations required by each city and the dynamics that are specific to each city segment cannot be answered by legal regulations including texts with several articles. Therefore, urban transformation needs to be implemented not only by the legislation of centralized administrations but also by the plans and models developed by the experts in local governments in order to focus on the local differences.

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ADDRESSING URBAN HEAT ISLAND EFFECT IN RELATION WITH URBAN GROWTH IN ISTANBUL

ALIYE CEREN ONUR,

Aliye Ceren Onur, Assoc. Prof. PHD., Maltepe University Faculty of Architecture and Design

Abstract

Developing cities like Istanbul with high ratios of urbanization, density and population have to face with another challenge different from unplanned urbanization which is urban heat island effect. As in almost every urbanizing place, natural land cover and land use replace with impermeable and dry surfaces like buildings, roads, infrastructure etc. (EPA, 2008). Together with urbanization, an increase in urban temperatures is inevitable (Cadenasso, Pickett, Schwarz, 2007). According to EPA (2015); a city with a population over 1 million can experience a 1-3 ^{0}C difference in the annual mean air temperature than its nearest rural region. This increase in temperature and its impacts can be worsen with climate change (Onur 2014) by increasing energy demand, greenhouse gas emissions, air pollution, water quality, heat related illness and life safety (EPA, 2015). Nowadays new planning approaches are developed integrating global climate change and heat island effects due to urbanization (Onur and Tezer, 2015).

In this study, the aim is; in Istanbul how unplanned and rapid urbanization after 2000's which can be named as the beginning of mega urban regeneration projects in Istanbul and change in local climate are related with each other by considering MGM and AKOM meteorological data and urbanization trends like increase in population, change in built-up areas as a result of new projects etc. (between 1970's-2012 for long term and 2005-2016 for short term). 1970's, 1990's, 2014 built-up areas are used in order to understand the change in built-up areas. Showing the importance of climate integrated planning approaches for a healthy and better environment is the main outcome of this study.

Keywords: Urban heat island, urbanization, climate change, Istanbul

Introduction

Urbanization is the main reason of the increase in urban temperatures (Cadenasso, Pickett,& Schwarz, 2007). Change in atmospheric structure and increase of local temperature is inevitable as results of urbanization natural land cover and land use replace with impermeable and dry surfaces like high buildings, density, narrow roads, infrastructure, pollution etc. The temperature differences in rural and urban areas are discussed in the recent studies (EPA, 2008; Kaya et al., 2012, Chen et al., 2005, Zhao et al., 2010, Tan et al., 2010, EPA, 2013, Onur, 2014). Occupation of vegetation of land cover is important for protecting the local climate and avoid from heat island effect (Alcoforado, 2006). According to EPA (2015); a city with a population over 1 million can experience a 1-3 ^{0}C difference in the annual mean air temperature than its nearest rural region. But geographical situation, time, season, wind etc (Kaya et.al., 2012) may create differences in addressing heat island effect between cities and even in the city. This fact of urban heat island effects creates a new challenge for climate change adaptation for cities (Onur and Tezer, 2015).

Air temperature measurement (Onur, 2014), surface temperature measurement (Santamouris et al. 2001), land cover and surface temperature measurements by satellite data (Li et al. 2016) are examined in order to address the urban heat island effect. Thermal remote sensing instruments are also used for understanding the urbanization and heat island effect relation (Kaya et.al., 2012). Summer period minimum temperatures obtained from meteorological station can also be used to understand the annual heat island differences (Onur, 2014). Takebayashi and Senoo (2017) analyse the rise in population as it may reflect the density, land use change, high rise buildings etc. They also used air temperature in August in order to determine the heat island effect and urbanization relation. The maximum heat island effect can be better measured during night time as the intensity of urban heat island effect is the highest. (Oke, 1987, Tan et. Al., 2010, Bernard et al. 2017). As Bernard et. Al (2017) emphasizes; sea breeze factor is also important that may affect the intensity of heat island effect. The distance from the meteorological station is also important to understand the effect of urbanization to rise in temperature.

Climate change may create new vulnerabilities other than urbanization on natural land cover and land use by increase in temperature, flood, drought, unexpected weather events etc (IPCC, 2007). The heat island effect of built up areas is also a significant outcome of urbanisation and may increase the temperature in urban areas more than climate change (Cadenasso, Pickett, & Schwarz, 2007). Climate change adapted land cover and land use planning approach can be a solution for both adapting and mitigating the climate change and heat island effect. A climate integrated planning approach is based on protecting and developing the natural areas in order to reduce the impacts of climate change and increasing the capacity of the city to adapt to climate change. To achieve this, climate change integrated urban planning strategies should be considered at all level of governance. These strategies considers increasing the quality and amount of natural areas and protecting ecosystem services, energy and water efficiency implementations from building scale to global scale, multidisciplinary cooperation and participative instruments in the city. These strategies should be use in order to increase economic and social welfare of the city (Virpi and Mark, 2011).

In this study how urbanization has affected change in local temperature is tried to be addressed. Meteorological data; annual minimum average temperature during summer time (June, July, August) is used to understand the annual temperature differences. The intensity of urban heat island effects is more significant in summer period than winter time (Ezber et al., 2007). For long period measures (1970-2012) MGM (Turkish state Meteorological Service) data and for short term period between 2000-2017 AKOM Meteorological data are used. There are 10 meteorology station of AKOM distributed in Istanbul. Some of these stations are in the the rural part of the city which may be significant to see the differences between the urban and rural areas temperature differences and how urbanization may increase the local climate by creating urban heat island effect. Actual land cover and land use (LCLU) data and meteorological data are intersected on the map to understand the relation.

Istanbul case

According to DIE 1950 population statistic, the population in Istanbul was around 1.180.000 with a superficie of 5390km^2 and a density ratio of 218 person/km^2. Around %77 of the population was living in European Part of Istanbul (DIE, 1950). Increase in industry and trade especially after 1950's created a pull effect to Istanbul (Karaburun and Demirci, 2009). Only in ten years, the population of Istanbul reached around 1.880.000 with a density of 208 person/km^2 and still the European part has the %77 of the population (DIE, 1960). However, after the first Bosporus Bridge built in 1973 in order to integrate the European and Asian parts of Istanbul, the existing land use of the city had started to change. Especially the

second bridge built at 1988, the urbanization sprawl had started creating irreversible impacts on natural land cover (Geymen A., 2013). Especially some of the industry sector located in European side started to locate at the Asian part and this change created a new pulling factor for the Asian side. At 1999, İstanbul had to face with another big challenge "Marmara Earthquake" which was the beginning of a new urbanization trend. This was based on vertical construction, new urban areas on natural lands like forest areas and agricultural areas under the name of urban regeneration. At 2000 Istanbul's population was around 10.000.000 and %65 of the population was living in the European Part. Between 1950 and 2000, the population has increased almost 10 times as a result of existence of Bosporus Bridges (Figure 1). At 2016 the urban population has increased to about 14.800.000 and around %60 of the population is living in European side. Now Istanbul's superficie is 5400km^2 with a density of 2700 person/km^2. In 16 years the urban population has increased around 5 million people which show that Istanbul still has great pulling factors such as being the financial, educational, trade and industrial center of Turkey with a high level of universal transportation opportunities. According to the Union of Chambers of Turkish Engineers and Architects projection this demographic increase will reach to 30 million until 2050 due to new investments on land like 3rd Bosporus Bridge, Canal Istanbul Projects etc. (Figure 1). These urbanization trends in Istanbul not only create pressure on natural land cover and land use (LCLU) but also together with that create a new challenge like heat island effect.

Northern part of Istanbul is located in Black Sea Climate zone which is cooler and more humid than Mediterranean climate zone which affects especially South part of Istanbul. Northern part of Istanbul has forest land cover and this kind of a climate hosts different kind of ecosystems in it. (Ezber ve diğ., 2007).

During the urbanization process of Istanbul, temperature of the city has also dramatically increased. The percentages of built-up areas are dramatically increased from %5 to 23% between 1970-2014. And together with existing built-up areas; 3rd Bosporus bridge in connection with Northern Marmara Highway project, potential built-up areas, 3rd airport at the north part and Canal Istanbul's potential areas built-up areas are expected to cover almost 32% of Istanbul after 2020's.

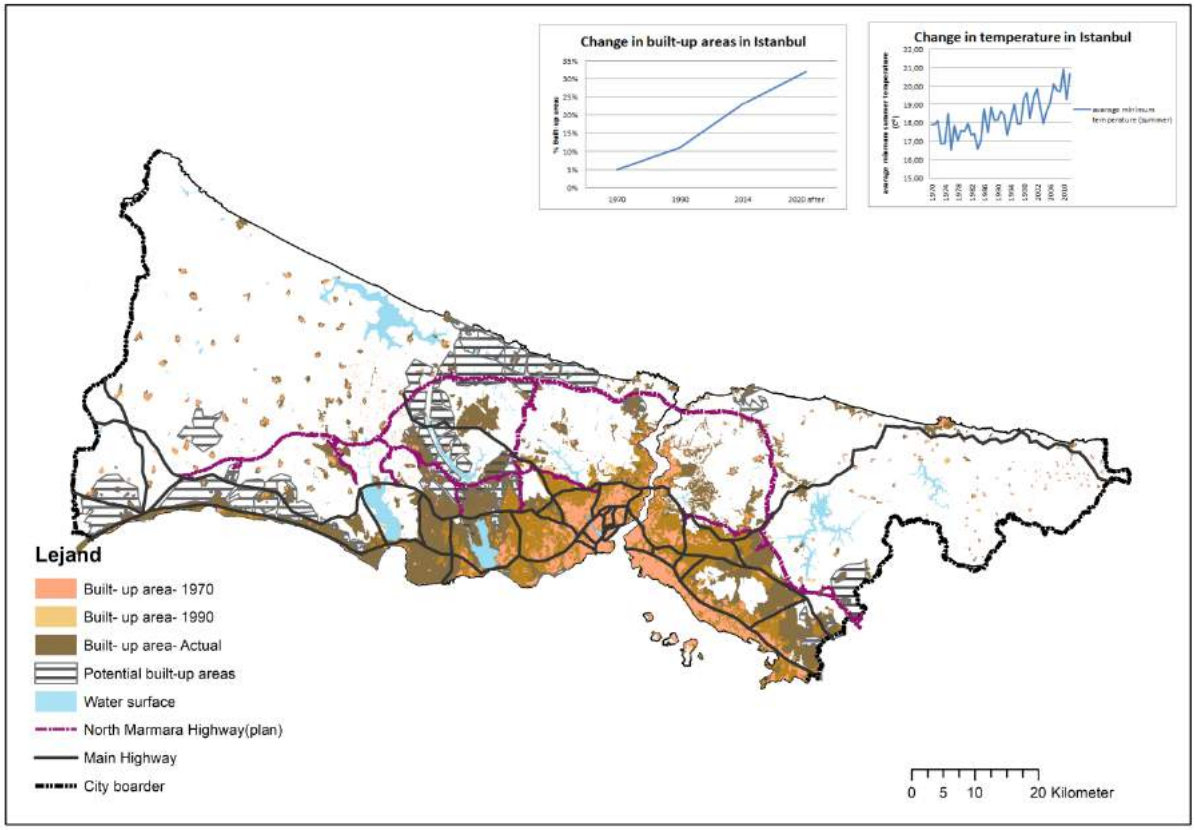

Figure1. Urbanization starting from 1970's including potential built-up areas and change in temperature during 1970-2012(MGM data).

While in the beginning of 70's the temperature was between 17-18C^0, nowadays it is measured between 20-21C^0. So an increase of about 20% of built up areas has seemed to increase the temperature about 2-3 C^0. Continuous trend of urbanization in Istanbul may cause higher temperatures in the future.

For short time period analyses, AKOM (Directorate of Disaster Coordination Centre of Istabul Metropolitan Municipality) meteorological stations minimum avarage summer temperature measurements between years 2005-2017 are taken into consideration (Figure 2). The elevation of the location of the stations are taken into consideration while taking the avarage of the temperature results. Interpolarization in ARCGIS is used to find the spatial distribution of the temperature (Figure 3). According to the statistical relations of minimum temperatures of stations and years (2005-2017), a linear corelation is clear in all stations.

Figure 2. Distribution of meteorological stations (AKOM), 2006-2017 avarage minimum summer temperatures in Istanbul

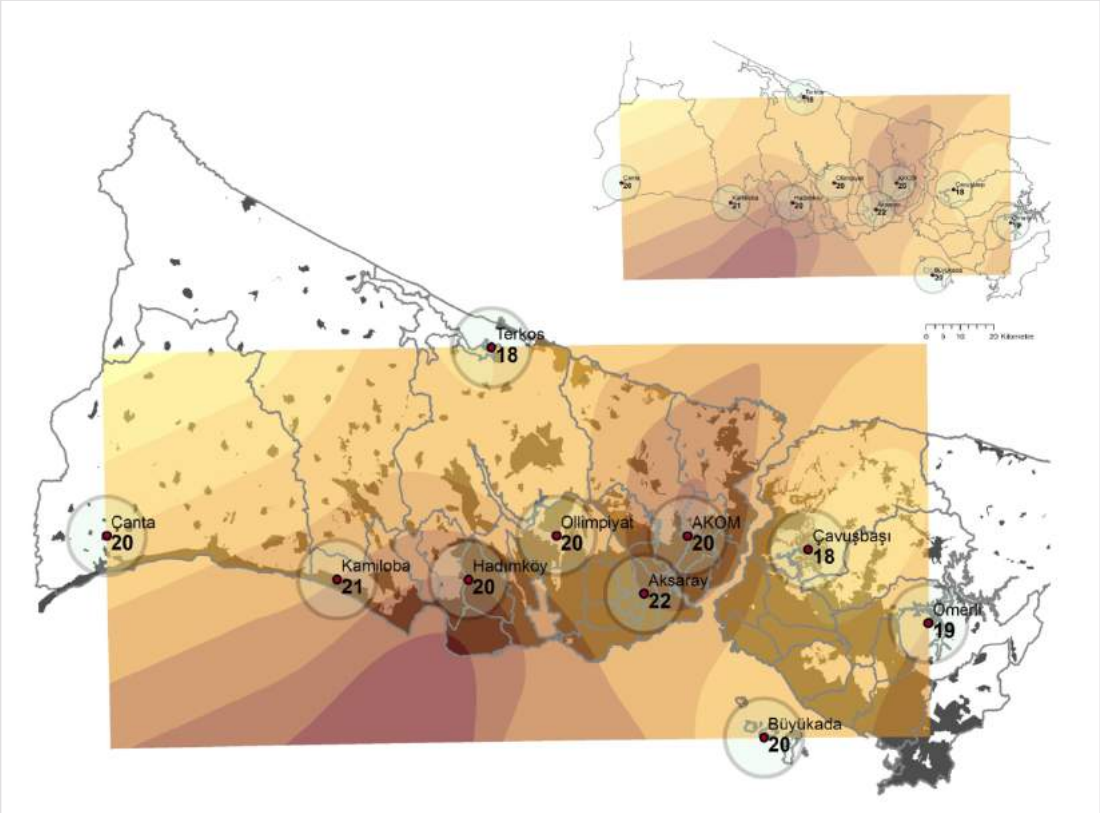

Figure 3. Interpolarization of the avarage minimum temperatures (2006-2017) and built-up areas in Istanbul

According to the results of interpolariation of avarage minimum summer temperature between 2006-2017 time period and actual built-up areas in Istanbul the temperature seems to be higher in urbanized areas in the city. The temperature diffeerences between rural and urbanized areas is measured as about 1^0 C in Istanbul (Ezber et al., 2007). This can be clearly seen in Asian part of Istanbul. The temperatures are measured lower than the urbanized areas according to the stations measurements at the edge of the urbanized area (Çavuşbaşı and Ömerli). The north part of Istanbul can be preferibly cooler than south part of Istanbul as a result of being in Black Sea Climate zone. So the station of Terkos is not considered to compare and adress the local impact of urban heat island effect.

In accordance with the new urban mega projects, it's obvious that the local temperature in natural areas can increase as a result of urbanization. This may increase the existing pressure on natural areas and ecosystem services which are very important for Istanbul such as watershed areas, forest, water resources and other natural areas. These areas are located in the northern part of Istanbul and create a natural corridor of the city. Together with the urbanization through this corridor at north part, the temperature is expected to increase. Previosly it is emphasized that during the period 1970-2012 urbanization caused a 2-3 ^{0}C increase at the city level. And in Ezber's studies the temperature diffeerences between rural and urbanized areas is measured as about 1^0 C. This increase of temperature, may create a great pressure on the natural LCLU, and may worsen the existing heat island effect of the city. North part of Istanbul which is the only cooling factor with an important value of ecosystem servises, may no longer be effective.

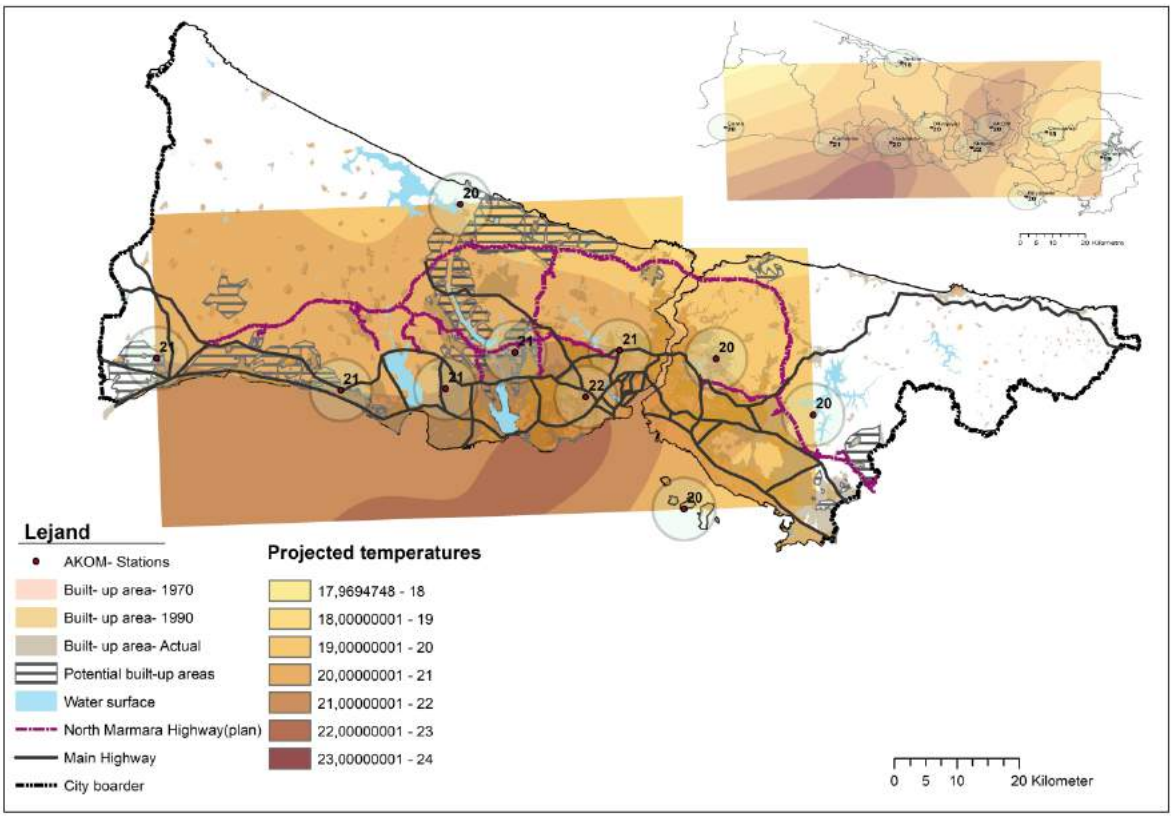

Figure 4. Projected temperature rises due to new urbanization and the interpolarization of the new temperature in the city.

According to the fact that the urbanization causes an increase in air temperature, if 1 ^{0}C is added on the existing measurements of the stations at the edges and rural ones, the new temperature distribution of the city can be seen in Figure 4. This change in temperature may not only affects the natural LCLU and ecosystem services of the city but also may create a great challenge on sustainability of the city. Higher temperatures, dense population and buildings, highways mean high energy consumption, low efficiency, consumption of natural resources and irreversible damage on natural LCLU and ecosystem services for the city.

Together with climate change fact, urbanization conduced heat island effect may worsen the pressure on natural areas that may threathen not only the ecosystem but also human life (Onur, 2014). This kind of an urban expand in Istanbul seems to be inevitable according to the actual political and economical dynamics. In this case a sustainable climate integrated planning approach can be useless without compromising the investments that cause changes of natural land cover and land use. In case of Istanbul; dynamics like supporting the transformation of natural areas into built-up areas, increase in energy and water consumption due to increase in population creates a great challenge on achieving this goal. Sustainable development has already been the primarily strategy of all the urban agendas especially in developed ones.

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PLANNING ISTANBUL: THE FIRST INTERVENTIONS ON THE URBAN SPACE IN THE 19TH CENTURY

YEKTA ÖZGÜVEN

Assist. Prof. Dr., Maltepe University Faculty of Architecture and Design

Abstract

The urban planning includes not only the organizations of the physical environment; but also the social, cultural, economic and public relations with formal or functional purposes through the developments of design, resources, and infrastructures. This holistic approach to planning determines the modern regulations on city-scale, to eliminate the spatial problems and chaos in the urban space. On the other hand, in the 19th century the discipline of architecture has been mostly centred on the thought that the public and urban life could be rehabilitated by planning and developing the physical environment. Especially with the demolishment and renewals of the urban space as entirely or partially, the modern urban planning has improved as a reaction to the large-scaled problems of the Industrial Revolution. Although the problems were spatial, functional, social, cultural, and public such as on the urban daily life, and urban administrative mechanisms in the 19th century; all of the solutions were only spatial to control and manage the urban space entirely.

In this context, that kind of modern planning in the Ottoman world, which has differed from the Western world within the inner dynamics, has been occurred for the first time in the early 19th century. Due to the urban sprawls, Istanbul −a mono-centred city in the Historical Peninsula− has transformed to a multi-centred city in the second half of the 19th century, including the historical core (the traditional trade centre in the Peninsula), Beşiktaş (new administrative centre by the movement of the palace to Beşiktaş) and Galata (new business centre by the foundation of the banks and Western lifestyle in Beyoglu). Therefore, the first attempts were the construction of the bridge on the Golden Horn and a road on the axis by the demolishment of surrounding buildings, to connect the administrative centre to business and then trade centre, Beşiktaş to Beyazit via Karaköy.

Another transformation was on the administrative mechanisms of the city, to have the absolute power on the urban scale, after the abolishment of the Janissaries (the main military power of the empire). Thus, the strict control on the city including people, daily life, and urban space has begun shortly before the *Tanzimat* due to the Ottomans' own internal dynamics. The foundation of the modern administrative mechanisms and system has been the only holistic approach to the planning process in Istanbul, while the others were only partial interventions, mostly spatial. It has also played another important role on the urban thought of the period; a report −written by the Ottoman ambassador in England− determined the regulations on the construction of the buildings, roads, new and renewed settlements. Moreover, it has indicated that all of the construction activities have to be based on geometrical and grid planning, in terms of modern and scientific technics as it was in Western world. The report was of utmost importance

as defining the principles of urban planning, architectural practices, and construction activities for the first time ever in the Ottoman world.

In this context, the paper aims to examine the beginning process of the urban planning activities in Istanbul, through the socio-cultural and political transformations by a historical view. Besides, the existence of the holistic approach to these interventions including administrative, formal, functional, public phenomenon will be examined. The main focal point of the paper is to reveal the perception of the city through the relations of the interventions with the dynamics of the period and each other.

Introduction

Most of the present discussions are based on the urban space, and urban problems related to it, such as urban transformation, urban planning, urban renewal, gentrification, and their effects −mostly negative− etc. The point is that these discussions are not included only on architectural or urban arena; but also all of the architectural, politic, social, and, cultural mediums. These discussions, increasingly continuing, represent that the interrelations of the socio-cultural dynamics within the urban planning issues are set up problematically from the early beginning.

In order to understand the fundamentals of the present urban regulations and transformations, the preliminary thoughts and works on urban planning have a significant role on the planning history of Turkey. In this context, that kind of modern planning practices in the Ottoman world, which has differed from the Western world, has been occurred for the first time in the early 19th century, under the patronage of Mahmud II. The main thing of these intervenes were not only based on the modern regulations; but instead to be realized within the Ottomans inner dynamics.

The General View of Istanbul as a Pre-modern City: The Urban Characteristics and Administrative System of Traditional Patterns

Before the 19th century, the city Istanbul, as a city of classical period, consisted of four different parts on the urban space: a main city and three outer towns/settlements. The main city, which was also called "*Dersaadet*" or "*Mahrusa-i İstanbul*" was the largest territory, inside the old Byzantine city walls on the Historical Peninsula. It was the oldest settlement area, and the centre of various urban functions (Ahmet Refik, 1998). As the capital of the empire, all of the main administrative services and offices of the city, −and also, of the empire−, were on that territory, including the palace of the sultan. The rest of the settlement –the other 3 towns− called "*Bilad-ı Selase*" has included different areas as Galata, Üsküdar and Eyüp. These areas, which were geographically separated from each other by water, were like suburbs, and excepted from the main city (Çelik, 1993).

The two shores of Bosporus have been populated in the early 16th century, firstly as the gardens of the sultan; and then, in the 17th century, gained the urban characteristics as a summer place on the countryside with the seaside mansions and palaces. These wooden residences, which were only on the coastline, had mostly two-storey. Only the dignitaries and sultans were settled on the Bosporus shores. Therefore, in the 18th century, it was like an aristocratic residential area –indeed a line next to Bosporus, due to the unique transportation way, by sea. The rest was natural green forests on the hills with judas trees, −which gives the main characteristic to Istanbul, as today−, and bay trees. Small villages and wooden waterfront mansions between them –but mostly not neighbourhoods−, which were built appropriately to the topography, green bays, and hills have formed the urban panorama of the Bosporus

(Kuban, 2000). By these view, it is like a natural and environmental settlement, lack of big scale buildings with artificial construction materials.

From the very first years of the empire, the city was constituted on small units, called "*mahalle"* (neighbourhood units), as a characteristic of being a Turkish-Islamic city. These residential units, which varied in size, "grew around religious cores, −mosques, churches, and synagogues" (Çelik, 1993). The neighbourhood units, which differed from a couple of 10 to 100 houses in size, were organized ethnically (Cerasi, 1990). In this context, before the 19th century, it was very rare to settle down the city individually; but mostly the people of the same religion, profession, ethnicity etc., have settled down as a whole and constituted new neighbourhood units. In these neighbourhoods, the various housing types could exist next to each other; the only exception is for *bekâr odaları* (room dwellings for unmarried men workers who migrate to Istanbul from other cities). There was no any segregation in the neighbourhoods, according to differences of income or socio-political status (Çelik, 1993). Thereby, the peripheral area beyond the main city was not based on the densification of single housing, by time.

These neighbourhoods consisted of narrow streets, two or three-storey houses, and small courtyards of the houses with few fruit trees and a well (Kuban, 2000). The major building technique, mostly for houses, was based on wooden construction until the 20th century. In some cases; caravanserais, inns and shops were constructed with rubble stones and adobe and then plastered, but the slabs and roofs were built of wooden materials (Kuban, 2000). Therefore, the city was formed with wooden buildings, which enabled to fires frequently. Moreover, the city was dominated with these wooden residential areas, which consisted the whole urban fabric between *külliye*s (a complex of public buildings around a mosque, and on different functions for accommodation, medicine, shopping, kitchen, library etc.) buildings. The city consisted of buildings constructed separately from each other on different functions, but of the utmost importance were the paradigmatic relations of them in the urban fabric. There was no any idea as the preservation of the old buildings, − the idea of heritage, indeed. It was a usual architectural practice to demolish the former one and construct the new on the site; but according to the hierarchical functionality, as following religious, formal, commercial, and residential. Of course, the imperial buildings were excepted (Kuban, 2000). By the 19th century, the city based on residential patterns and pre-industrialism, and the silhouette defined by green habitat on the hills, domes of the monumental mosques as the highest buildings, and few-storey wooden buildings would be transformed to modern cityscape with the some interventions on urban fabric.

The short streets in the neighbourhoods showed irregular patterns; "their orientation, and width constantly changed and dead ends were frequent." (Çelik, 1993). These wooden construction techniques, and due to that big fires, destroyed large districts frequently, and also allowed the street patterns to be more complicated. All of the Western voyagers of 18th and early 19th century −i.e. D'Ohsson and Boué− remarked these complex street patterns, dead ends, dirtiness of streets, and lack of some urban infrastructures such as big and designed squares, paved and designed streets (Cerasi, 1999). However, the complex street pattern was a fact of the natural topography and pre-modern transportation ways, that the only way of urban transportation was based on pedestrians. Instead of the sultan and dignitaries of the empire, it was rare to ride horses for travelling in the city. The transportation of the stuff inside the city was based on mostly pedestrians, and all of the stuff were carried by *hammal* (porter), until 19th century, −although some animals could carry some heavy loads. Until the 19th century, the streets were named as "*tarik-i âm*" (means public street and road), there was no any special name for each street. Mostly, the streets were identified due to the name of the place that road reached (Kuban, 2000). It was because of that none of these streets or roads were planned; they were formed in accordance with the topography by time. Considering that transportation way and the rough topography −the hills and

valleys−, the streets on straight-line axis were inadequate for the rough topography. Hence, the urban morphology of Ottoman Istanbul was based on organic patterns.

It was not because of inability of the Ottomans, to make urban planning or spatial configuration of the city with geometric regulations; it was more than this. It was because of different cultural practices, and another way of perception and understanding of the urban for the Ottomans. The urban concept of Turkish-Islamic thought for cities did not refer to the planned urban spaces −or the term urban planning. Therefore, the urban fabric evolved organically by the construction of wooden buildings, which were also determining the axis of the streets.

Due to the perception of urbanism and traditional life styles of the period before the 19th century, of Ottomans, there was no need for wide streets or large open areas, which would be appeared in accordance with the increase in population, but mostly cultural improvement and urban consequences of Industrial Revolution (Cezar, 2002). However, in the 19th century, all of these traditional and organic characteristics of the city would be overcome by the modern −Western− ones such pioneers as wide boulevards with trees on sides, streets on straight axis, squares, carriages and, masonry buildings more than three-storeys etc.

Before the 19th century, there were no any formal offices or headquarters for the municipal works in Istanbul, as it was in other Ottoman cities. All of the solutions for urban problems, and the urban regulations were actualized by the imperial orders of the sultan, such as the height of the buildings, cleaning of the streets, deterioration of the pavements, width of the streets (Cezar, 2002).

On the other hand, the administrative system of the classical Ottoman city was based on Islamic religious and political theory (Çelik, 1993). In modern terms, there were no any rigidly defined municipal services for Ottoman cities, −for Istanbul until the mid-19th century. All of the civic and municipal services were assumed by different dignitaries and officials, as hierarchical administrative system "was headed by the grand vizier, whose responsibility was the general welfare of the capital and it inhabitants." (Çelik, 1993).

Istanbul, the capital city, was managed by the Ottomans' own hierarchical mechanisms, until 19th century, as a Turkish-Islamic city. "The traditional Ottoman system was decentralized; responsibility for social programs, such as public health, education, and social security, was in the hands of various autonomous communities, namely, the *millet*s, or ethnic groups, guilds, and religious orders." (Çelik, 1993). In capital Istanbul, the urban administration was constituted on an organization hierarchically under the grand vizier (*sadrazam*), including the imperial officials as *kadı, subaşı, bostancıbaşı, tulumbacıbaşı, ihtisab ağası, şehremini* and *mimarbaşı* (chief architect of the Ottoman Empire).

Kadı was a judge served as an enforcement of Islamic and sultanic rules, −but, much more than a judge−; was also the main administrator of the cities, in the absence of any municipality and mayor, in modern terms. The responsibilities of the *kadı* were extended form many municipal functions such as "the determination of the streets widths and building heights" to setting prices, cleanliness of the city, controlling the building activity etc. (Çelik, 1993). The cities were divided into different territories considering the areas under the responsibilities of *kadı*s. In Istanbul, there were 4 territories that their authorization area was determined due to the geographical borders; Istanbul, Eyüp, Galata and Üsküdar (Ergin, 1995; Cezar, 2002). The *kadı* of Istanbul was also named as "*Istanbul Efendisi*", whose territory was only the main city; and was respected as above all over others (Ergin, 1936; Kuban, 2000), as for that the palace of the sultan was included in and was high densed populated as the oldest settlement.

As the smallest sub-unit of the city, the neighbourhoods were under the responsibility of *imam* (the local Muslim religious leader) as the representative of the *kadı*'s administrative power. Some of the issues

under his responsibility were to marry and to divorce people, to register the lists and records of dwellers in the neighbourhood, to prepare records of persons who moved to another from the neighbourhood, to arbitrate of the arguments in the neighbourhood etc. (Cerasi, 1999).

Nevertheless, no any quarters were identified or constructed for the urban administrative facilities. All pre-modern actors of the urban administrative system used their own mansions as the public offices (Ahmed Lûtfî Efendi, 1999; Ortaylı, 2005). The residence of the *kadı* was served also as the city hall and courthouse, in modern terms. Therefore, i.e. when the *kadı* was dismissed, and then the public office of *kadı* has moved to another location in the city, to the mansion of the new *kadı*.

In addition, this was because of being a mono-centred city for centuries in the borders of Historical Peninsula. Before the 19th century, the city, which has been organized to encompass a centre, was under the patronage of the sultan and his palace. The palace of the sultan as the main power of the empire (Topkapı Palace), the main traditional trade centre of the city (the area between Eminönü and Beyazıt), and the main residential districts including the mansions of the dignitaries were all in the historic core of the city.

However, by the 19th century, all of these facts including urban patterns, urban administrative services, and organic urban fabric etc. have begun to transform to modern ones. In this context, the initials of modern planning in the Ottoman world, which have also differed from the Western world, within the inner dynamics, have been occurred for the first time in the early 19th century in Istanbul.

The Transformation of Istanbul to Modern Patterns: First Planning Attempts and Intervenes on the Urban Space

The intervenes in the first half of the 19th century was the initial efforts to transform the Islamic, and traditional urban image to more modern one, which were ensued by the declaration of the *Tanzimat* in 1839. The reformist thoughts and ideas on urban scale in every aspect were grounded in the period under the patronage of Mahmud II (1808-1839), just before the *Tanzimat*. After the abolishment of the Janissaries (the main military power of the empire) in 1826, which were responsible from the management and civic services in the city, the “modernization” process of the urban space has been initiated by the sultan, as well as the inhabitants and daily urban life practices. However, in some cases of the period, the term modernization has indicated to something different from the Western meaning of the concept; moreover to the endogenous transformation of traditional world due to the Ottomans’ own internal dynamics.

First of all, one of the main modernization in terms of urban was the re-organization of the administrative mechanisms. The traditional administrative organization headed by the grand vizier was changed with the more “modern” urban administrative system, but not as it was in the Western; but also due to the Ottomans own internal dynamics. As it was mentioned above, *kadı* “who was the mayor, the judge, and the head of the municipality” and *kadılık* that “was supervised by the office of *şeyhülislam* (the head of religious affairs)” (Çelik, 1993) were extinguished in 1837/38. As it was a problematic situation for the people, the movement of the *kadılık* building due to the newly assigned *kadı*; and the buildings allocated to *şeyhülislam* have adequate space inside, the courts of the *kadı*s gathered in one place (Ahmed Lûtfî Efendi, 1999). Moreover, all of the responsibilities and the works under the responsibility of *kadı* were assumed by newly constituted *Bab-ı Meşihat* (Ergin, 1995).

The second was the re-organization of the administration of the neighbourhoods. The responsibilities of *imam*s have been restricted to only religious matters –as a religious leader. For the rest of the municipal

works such as connection between the inhabitants of the neighbourhood and the empire were assigned by the newly constituted *muhtar*s, as the administrator of the neighbourhoods. *Muhtar*s would be the local authorities of the empire on the neighbourhoods, including two *muhtar*s for each neighbourhood, titled as "*muhtar-ı evvel*" (*muhtar* the first) and "*muhtar-ı sani*" (*muhtar* the second). All of the non-religious responsibilities of *imam*s were undertaken by *muhtar*s such as the security of the neighbourhood, recording of the inhabitants just moved in to neighbourhood or out, and registry of the male individuals in the neighbourhood (Ahmed Lûtfî Efendi, 1999).

However, the major re-organization of traditional urban administrative mechanisms was the extinguishment of *mimarbaşılık* (chief architect of the royal architects) and *şehmereminliği* by the establishment of *Ebniye-i Hassa Müdürlüğü* (Council of Public Works) in 1831. *Mimarbaşı* was the head of *Hassa Mimarlar Ocağı*, which has the responsibility to construct the all buildings all over the empire, including Istanbul. *Şehremini* had no right to participate on the construction in any phase, but deal with the financial issues of the construction process as providing the building materials, and finance the construction (Ergin, 1995; Tekeli, 1999; Cezar, 2002). This traditional way of architectural and urban works, which created confusions on the realms of authority in the early 19th century, have been eliminated by the integration of both actors. *Ebniye-i Hassa Müdürlüğü, "*responsible for the supervision of building activity" (Çelik, 1993), would have a major role on the urban improvement, and on the urban works with a modernist perspective. These intervenes on the urban administrative system were ensued by an urban reform, the foundation of the municipalities in the second half of the 19th century, i.e Sixth District comprising Galata, Pera, Tophane.

In the 1830s, the city Istanbul was not consisted of only the main core in the Historical Peninsula, anymore. Due to the population increase during the 18th century and some Western oriented practices in the early century −in the Tulip Era−, the settlement has enlarged on the territory to the suburban areas to the Bosporus shores. On the city maps of the 18th century, included lands of the geographical area –the Historical Peninsula and Bosporus shores− were represented separately, as "Istanbul and Bosporus", "Istanbul and the Surrounding Lands", "Istanbul and the Bosporus District" or "The City of Istanbul and Suburban Lands" (See Kayra, 1990a). According to these maps made by Westerns, the city Istanbul was defined as the territory inside the Byzantine city walls. The other settlements on the outer of the walls including Eyüp, Galata, Üsküdar and Bosporus were not included in the urban space of Istanbul; they were considered as the secondary settlements as suburban areas, which were not integrated to each other. But the map of the early 19th century, made on the period under the patronage of Mahmud II, was titled as "The Map of Istanbul" including the Historical Peninsula, besides Galata, Eyüp, Üsküdar, Yeşilköy and Bosporus. The lands drawn on the map was determined in mathematical terms as miles. It was the first time that the territory was defined by physical borders geographically. Therefore, the city Istanbul not consisted of a core and suburban areas, or a city and secondary settlements. The city was a physical entity that expanded to a larger area compared to the former periods. Moreover, this holistic approach to the urban territory was developed for the first time in Ottoman world.

The included territory on the maps was also in parallel with the holistic perception of the city in the early 19th century, by Ottomans especially by the sultan. Before that, as mentioned above, Istanbul had a characteristic as a mono-centred city; the historic core defined by the palace, the mansions of the dignitaries, trade activities, and intense settlement; rest of the territory was suburbs. But, in the early 19th century, by the construction of the new palace of Mahmud II in Beşiktaş and the movement of the place from Historical Peninsula –Topkapı Palace− to Beşiktaş –Beşiktaş Sahilsarayı− have changed this fact. After the abolishment of Janissaries and by the constitution of the new and "modern" army of the empire in 1826, new buildings functioned as barracks have been constructed in Istanbul, mostly in the districts

which were suburban areas before, such as Eyüp, Selimiye, Maçka, Kuleli. Therefore, the sultan and the army, the main power of the city –and of the empire– were not included in the historic core anymore, as it was before the abolishment of Janissaries. The re-organization of the imperial administrative system by Mahmud II, has transformed the city from mono-centred to a non-centred city. This was parallel to the maps of the period. The city was not consisted of a core and suburban towns anymore; it is the territory including all. However, this non-centred character would be transformed to multi-centred one in the second half of the 19th century, by the modernist regulations of the *Tanzimat*. Although, Beşiktaş continued to host the imperial palace, Bab-ı Ali would be another power as the governance, Beyoğlu including Galata would be the financial centre by the foundation of the banks etc., and the centre of the modernist urban daily life.

The major physical impact of the holistic approach to city during the patronage of Mahmud II was the construction of a new axis from Beşiktaş to Beyazıt. A Prussian officer, Moltke was tasked for that building, by the sultan in 1836 (Moltke, 1999). This attempt was of utmost importance that for the first time Ottomans were trying to form the physical environment through modern techniques in terms of urban planning. Indeed, the thought of building this road has begun by the movement of the palace to Beşiktaş. Considering the lack of modern street patterns in Istanbul, it has also been the symbolic representation of the re-powered sultanate by the abolishment of the Janissaries. The urban axis has been served to connect the Beşiktaş Palace, to Bab-ı Seraskeri (the headquarters of the army) in Beyazıt and then to Divanyolu. Thus, for the construction of the new road, all of the surrounding shops, gardens, coffee shops, and houses on the axis were demolished. And, sultan, Mahmud II, has been the pioneer who went through the road from Beşiktaş to Beyazıt Mosque (Moltke, 1999). The axis was determined through an actual land use map, also made by Moltke during the early 1830s; which was the initial for Ottomans to draw a map and to try to read, understand, and perceive the city through the maps. Moreover, the axis follows the Golden Horn, also has been connected the two sides, Azapkapı in Galata to Unkapanı in the Historical Peninsula. For that, the construction of a bridge on the Golden Horn has been included. This was the first time in Istanbul, that historic core and the "other" side would be integrated to each other physically, by the bridge. The bridge named "*Hayratiye Köprüsü*" (*Hayratiye* means charity, in modern terms) was free of charge for the use of the all peoples.

On the other hand, a report to determine the urban regulations was prepared in 1834 by Abdülhalim Bey who is *Ebniye-i Hassa Müdürü* (Head of the Council of Public Works in the empire, and in Istanbul). In addition, all of the municipal and civic services in Istanbul were on the hands of Abülhalim Bey, as a former chief architect. In this report, he has defined the building materials, heights of the buildings, construction technologies, land properties, as well as modern planning techniques to be made on burned areas, development plans on the settlements, the badly circumstances of the streets and depending on the water and health issues; and their improvements (Cezar, 1996). This report was the pioneer of modern urban planning attempts for Ottomans in Istanbul; and Abdülhalim Bey was the pioneer who considered the urban problems of traditional patterns, and offered some modern solutions in terms of urban planning and improvement (Cezar, 1996).

Another official Mustafa Reşit Paşa, also one of the authors of *Tanzimat* Charter, had formulated some urban and design principals in 1836, throughout Istanbul with the regularization of the urban fabric. "He advocated a scientific approach to planning", with the wish that Ottoman capital to meet the Western standards as in Paris, Vienna and London (Çelik, 1993). He determined that "the regularization of the street networks should pursue mathematical and geometrical rules" (*kavaid-i hendese*, in Ottoman) which means lack of dead ends and complex street patterns; but instead, boulevards with wide pedestrian footpaths and trees on both sides (Çelik, 1993). Also the construction of masonry buildings instead of

wooden ones (Ahmed Lûtfî Efendi, 1999), the enlargement of streets widths, and usage of grid street patterns (Tekeli, 2005), as well as the education of construction workers, and challenging of Western architects for planning (Ortaylı, 2005) were remarked in the report. Thus, it would be possible to avoid from big fires, which damaged the most of the urban fabric. The report was of utmost importance as defining the principles of urban planning, architectural practices, and construction activities for the first time ever in the Ottoman world.

Conclusion

In traditional Istanbul, before the 19th century, the municipal rules and regulations of the city were not codified totally. Most of them were based on various unwritten or written sources such as *ferman*s (imperial order) or juridical rules (Çelik, 1993). Therefore, the traditional urban mechanisms were assumed by the different traditional actors, headed by the grand vizier. As a Turkish-Islamic city, the responsibilities were not undertaken by professionals in modern terms. For instance; *imam*, the local religious leader, was also the representative of the administrative urban power in the neighbourhood, and all the inhabitants of the neighbourhood provided the basic municipal works under the organization of *imam*. Or *kadı*, the Islamic judge, has also decided some of the urban regulations such as the building heights and street widths etc.; while some actors were members of Janissaries, –the imperial army. Or sometimes there were confusions on the borders of the responsibilities of the various actors.

The main point was that these actors were not professionals, –in modern terminology–, of the responsibilities undertaken by. After the abolishment of Janissaries in 1826, this traditional urban administrative mechanism has failed, and Ottomans had to establish new system for urban, municipal, and public works. The other point is that, there were no any segregation on the working areas of these actors as imperial works and urban works of Istanbul; they were all included on their responsibility, which was in accordance with the mono-centred city of Istanbul as a capital. On the other hand, before the 19th century, the Ottoman cities developed organically, due to the topographical and socio-cultural codes of the "land". It means that the knowledge of designing an environment through maps was not included in the Ottoman thought.

However, in the 1830s, some attempts to transform these traditional urban practices to "modern" ones have been realized, just before the declaration of *Tanzimat* in 1839. Moreover, these attempts grounded the modern regulations and reforms of *Tanzimat*. Considering the fact that the city of the 1830s was not a mono-centred city anymore, but instead, non-centred; one of the majors was to connect different parts of the urban area through designed axis. Therefore, the design of the axis to connect the new palace district to historic and traditional core of the city, where the other municipal and military offices were located, was the pioneer of the modern urban planning in Istanbul, also in the empire. The building of the axis also included the construction of a bridge on the Golden Horn. This bridge was also representing the initial request to connect the urban core to Galata, where has been referred as the "other" side for centuries. And, the construction of the road and the bridge, by the demolishment of the surrounding buildings, have determined the first spatial intervene on the urban pattern for Ottomans. The other intervene was on the urban administrative system, by the segregation of the urban responsibilities, and the re-definition of the works as municipal, building activity, security etc. The other of the utmost importance was the efforts to manage the city by modern regulations and rules, instead of the traditional and cultural codes; including the preparation of the maps of the actual use in Istanbul, named the territory as "Istanbul" entirely, including suburban areas and non-settled areas; and then the supervising the building activity through these maps.

These preliminary intervenes on the urban pattern from urban administration to spatial ones, and from the perception of the city to determination of the scientific regulations by reports were the pioneers on the starting point of modern urban planning of Turkey.

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URBAN MEMORY AND A MODEL OF RENEWAL: GALATA / GALATAPORT

ZEMZEM ECE, OZGE GUNDEM

Abstract

Karakoy district has always been a glorious star of Istanbul city with its multicultural and historical structure. It is one of the places that hosts different ethnicities and crowds.

The aim of this paper is to show how the structures in Galata Harbor and its surroundings should be used in line with the principles for the public good and how to create an organic unity with the environment that should be an Urban Site.

Galataport Project which has been planned for the innovation of Galata Region and Cruise Port layout will be discussed by evaluating the analysis of published reports, academic publications and legal regulations and the data will be evaluated by observing in Galata region. This study will compare the Galataport project (which has been shared with the public) with similar examples from the world and will examine the possibility of destroying the urban texture with the reason of its proximity to the historical peninsula.

It is so important to create a square in such big public areas in urban planning and it must be considered as if Karakoy coastline is the right location or not to built a harbour for cruise ships to transport. The possibility of accumulation of thousands of people to Karakoy, one of the central districts of Istanbul will create difficulty for the daily traffic and access to the area.

The area which should be open to the public in the Galataport project is under construction so the small shopkeepers who continues to struggle for years in that area will have to leave the region due to the new circumstances of this annuity cost focused spaces and building a line /set between the sea and the city for a 1,2 km must be considered for the interaction and more.

The traces of our memory about Istanbul city express its identity and soul; so every project to be made in this city whom is one of the most unique and cultural centers of the world should be planned with a sensitive care and well prepared architecture.

Whatever the identity of a city is; natural and historical identity should be valid. This work is prepared with the aim of producing a solution with a critical approach to one of the most iconic projects of Istanbul; Galataport.

Urban Memory

When we have a look at the urban transformation projects, we can see that the projects constructed for the historical port areas are gaining momentum. As these types of projects are on the agenda they bring out a lot of problems on board. Discussions about the legal issues, deficiencies and malfunctions in practice, and the criticism towards the content leads us to review these types of projects.

"Galataport" project which is now described as “Cruise Port” depending on the changes by-law of Seacoast Law implementation by the Ministry of Public Works and Settlement is an item on agenda for

Istanbul city and Turkey nowadays. According to the 2863rd Protection of Immovable Cultural and Natural Assets; the land is an urban protected area and being declared as a new touristic space and being included in the scope of privatization takes the debate one step further. (TMMOB, 2008)

Galata; The Star of The Historical Peninsula

Historical buildings which reflect nostalgic and factual ideas can actually change, move, transfom or circulate in floating time concept. Galata is all about evolution. This region is always on the move even though some locations of the land has been undergo changes through the history. Towards the end of antiquity, Galata was once described with the word “Sykai” which means "figs garden" in Turkish and as "Peran en Sykais" (Sykais on the opposite shore) in Greek. (Eyice, 1969 pp.9-10)

Galata region which has been a settlement from antiquity to nowadays, was in such an important location that can control the trade between the East and the West by its coast to the sea. (Figure 1) When it comes to colonies of the Genoese, the first place which comes to mind is Galata. The most glorious and brilliant days of the region had been started after the settlement of Genoese to Galata in the 12th century. The Republic of Genoa ruled this further colony through a set of rules called "Pera Laws" which were created by their own. (Çelebi, 1998 pp.232)

Figure 1. Galata Region, 19th Century

During the earthquake known as "Little Apocalypse" which occured in 1509, large waves came along through the sea and crossed the walls of Galata ended up with a big damage. Beyazit the 2nd (1447-1512) ordered a large scaled zoning regulations after the cost. The constructions started in 1508 under the management of Architect Hayreddin were completed in 1510 and Galata Tower including the walls were repaired. Also; Galata had been damaged by the fires occured in both 1640 and 1660; many churches and houses were burned down. In the 19th century some parts of the walls were removed due to the zoning works, and by the 20th century, many historical buildings were destroyed. (Cezar, 1963 pp.383)

The new adventure of Galata has not begun today. At 2005 by the declaration of Turkish Maritime Lines Inc. the public tender had been started and the process of building, operation and transfer included a line of 1,2 km from Karakoy Waterfront to Mimar Sinan Fine Arts University.

The coastal area which was declared as an urban protected area in 1993 was determined as a tourism center in 1994 according to the Law for the Encouragement of Tourism. In this case, the planning authority of the local governments were removed. Tabanoglu Architecture Company designed a project

for a 10 hectare area between Salipazari and Karakoy Port. According to the by-law on the Seacoast Law implementation in 2004, a regulation was brought to the constructions which will be located on the coast and fill described as "cruise port”. With this by-law, the seacoast was now available for new contructions and Karakoy coastal area was accepted / named as a touristic center and the old zoning plan was suspended.

The Turkish Maritime Lines called tender for Galataport with in the scope of BOT (Build-Operate-Transfer) in August, 2005. As a result of the tender, cruise port facility involved two hotel buildings (one with five stars) which will be operated by international firms, shopping stores, food and beverage areas, museum, entertainment facility, parking area and the operations related to them. (TMMOB 2008)

In 2005, the Israeli Offer Family, Royal Caribbean joint venture and Mehmet Kutman (the owner of Global Securities) had won the tender. The existing mayor of the preiod; Kadir Topbas and the Chamber of City Planners Istanbul, demanded the suspension of execution to the Supreme Administrative Court.

At the same time, the Directorate of Privatization Administration was authorized for ruling zone changes in cruise port construction through bag bill. The Privatization Administration introduced the project which was planned to be finished in 3 years and the tender shareholders to the public in March 2010. At that time, the winners of the project were EFG Istanbul Securities, Mega Engineering and İşmen Law Firm. The Privatization Administration announced that they will act with various non-governmental organizations including Karakoy public representatives to eliminate the speculations about the project.

Galataport brand was approved for being a trademark registrated by the Turkish Patent Institution. However, when the Privatization Administration faced with trademark problem after the tender process, the name of the project was changed as "Tuesday Market Port". The tenders have not been finished yet. In 2012, the Privatization Administration initiated the 3rd tender thus the zoning plan with the purpose of protection, so the project was brought into the agenda of Istanbul city, again. Dogus Holding won the tender and it was understood that the new conservation zoning plan did not contain any protection decisions for the coasts in this 3rd plan. Finally the Bilgili and Dogus Holding Groups announced that the project was going to be put into practice in February 2015.

“*For the area located in the south of Fish Market described as trade, service, cultural area; the places for marketing of the products of Turkish arts, food and beverage, theatre and cinema and retailing of marine products and the functions of accommodation types like boutique hotel were foreseen."* (Master Zoning Plan Declaration Report with the purpose of protection of Thursday Market Urban Protected Area, 2008)

The Tiled Kiosk; one of the architectural symbols of Karakoy district was built in 1911 in İstanbul. The building had been used as Directore of Customs and Center Dock Kiosk for a long time. The rectangular shaped concrete structure a had symmetrical facade patterned with elements referring to Art Nouveau and Neoclassicism. The green and blue tiles between the canopies had created a dynamic and colorful image. According to the new project, it is planned to provide a function as a hotel. To be functioned as a hotel building for this structure unfortunately means that from now on it will loose its identity and freedom. (Figure 2 & Figure 3)

Figur 2. The Tiled Kiosk, 1930

Figure 3. The Tiled Kiosk, Istanbul Regional Directorate of Customs and Trade, 2012

Central Dock Kiosk is a building which was designed in neoclassical style and constructed between 1912-1914. The building is the first one which belongs to the Turkish Maritime Lines. The 6 storey square shaped building had a classic office plan. The upper sides of the rectangular windows had been decorated with egg and dart moldings and strap ornaments. The architect (unknown) had also used Ancient Greek and Roman plasters inside. Some of the balconies have symbols such as laureate wreaths which reminds Art Nouveau again. It seems that another function (such as a hotel) will come out for this building in the new project and that will soon proove how the identity / existence of the historical buildings does not matter in the point of view of the public liable in Turkey. (Figure 4 & Figure 5)

Karakoy Passenger Hall was the first modern waterfront of Turkey and also one of the most unique structures of the Republic Period. There had been an open competition at 1935; Rebii Gorbon's design was a combination of 8 different projects. The passenger terminal and the waiting lounge had been the main functions of the project. These two spaces were opening to the street and the pier and there were other service areas around them. On the second, third and fifth floors there were offices, warehouses and other functional spaces, while the fourth floor was divided into restaurants. The building has been partly

demolished within the scope of consolidation project. However, in 2002, Karakoy Passenger Hall was registered as a cultural asset like Tiled Kiosk and Central Dock Kiosk. (Figure 6 & Figure 7)

The Historical Parcel Post was one of the registered cultural asset which suffered from this destruction. Within the scope of the Galataport project, it is expected to provide service as a shopping center. The building had been constructed between the years of 1907-1911. The horizontal rectangular structure had been divided by a barrel vault which was covered by a glass cupola to benefit from the daylight. The 2 storey reinforced concrete building had been referring to Renaissance architecture with its rustic walls. Round arches and baroque period decorations on the facade also shows that the architectural style of the building was very eclecticist. (Figure 8)

Figure 4. Central Dock Kiosk, 1951

Figure 5. Central Dock Kiosk, 1997

Figure 6. Karakoy Passenger Hall and Yellow Tiled Kiosk, 1980

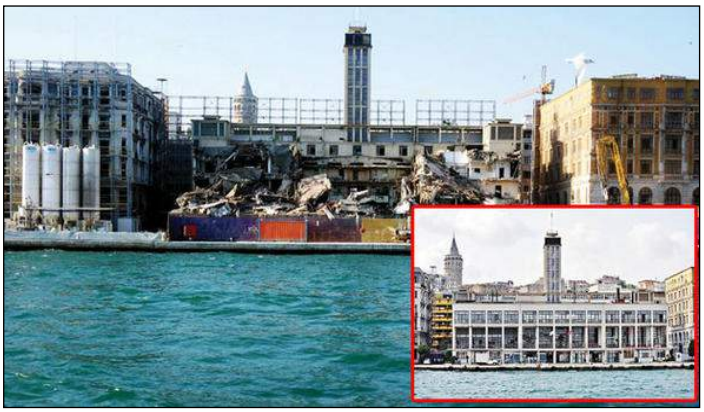

Figure 7.Destruction of the Historical Karakoy Passenger Hall, 2017

Figure 8. Historical Parcel Post

Today, maybe one of the most important subjects which should be discussed by an architectural point of view is; is it possible to built without destruction and to form a memory except for constructing a new building? Should we protect the buildings by their original funtions or demolish the common culture and

collective memory created by the building? It should be noted that these types of historical / cultural / physical spaces are the most important carriers of the collective memory.

Unfortunately, there are not many public buildings of the Early Republic Architecture in Istanbul, because the capital city of the new Republic was directed to Ankara in that period. These types of buildings are the witnesses of social and cultural structures of the period that was lived.

The structures of the 1940's has the problem of carrying loss on due to the preferation of concrete masonry systems which had caused distinctive problems but where enough experience was gained in restoration interventions. The malfunctions resulted from the carrier system in the Passenger Hall or the ground and malfunctions caused by the carrier loss resulted from the interventions done in the waterfront recently will be decisive at the structure's restoration opportunities and decisions to be made. The destruction decisions which were made without discussing these possibilities have transformed into a typical implementation method for the structures of this period.

Reconstruction, or rebuilding, is "to rebuild the structure which has cultural asset value and keeps its currency in social memory but which is lost for any reason under the condition that its indispensability is described with regards to both its quality as a cultural asset and its historical contributions to cultural environment and social context" as indicated with its current description in the 2013 Turkish Conservation By-Law. However; if the cause of the destruction of a structure validates reconstruction, this situation describes an ethical problem. In the protection of modernist structures, material distinctness on the primary rank in hierarchical order of the protection theory can leave its place to the design distinctness. Through the priority of the protection and readability of the design distinctness; comprehensive restoration, complementation and reconstruction implementations can be carried out but this should not be a reason to extend the reconstruction. (Omay 2017, Issue.394.,pp.44)

The concerns and objections against the project under construction were announced to the public by the Chamber of Architects and Chamber of City Planners. One of the most remarkable criticism is undoubtedly that through the law in the Turkish Republic Constitution, the common good is primarily looked after when coastal areas surrounding the shores of seas and lakes are utilized. However, the area which should be an open public space in the Galataport Project was exposed to be structured within the scope of privatization. The concerns about the project are not limited to this. One of the most expressed concern is that small business owners who struggle to survive in the mentioned location for years will have to leave the area because of the capital and the income-oriented initiatives. The concern of the historical and social pattern will be destroyed for commercial income and 1.2 km coastline will form a set between the city and sea.

The aim should be for the integration of the city in such big projects as Galataport. Public space creation should be the first option. The project should be progressed in a harmony with the city sight without damaging the historical pattern, as it is close to the historical peninsula. The most important feature which distinguishes Istanbul from other cities is that it is the cradle of civilizations. Through its structure offering peace in the chaos in the spot where the east and the west meets, the city which witnessed all the periods from antiquity to the end of Ottoman Era and the modern age has acquired a different identity through its museums, churches, mosques, palaces, natural beauties and its unique rhytm. The marks about Istanbul which formed in our memories express its identity / soul and every project which will be costructed in this city being one of the limited cultural centers of the world should be designed studiously. Whatever the identity of the city is, the identity of the nature and the natural should be valid.

The new structures formed in the landscape should be distinct and we should be loyal to the forms in the old pattern of the historical structures which will function in new ways. To be successful about public architectural spaces, the transition between public and the private spaces should be effectively provided.

It was expected that Galataport project would have been in a structure which could have been adapted to the varying conditions and find a solution for the current problems. Public spaces are important places which enable people regardless of their religion, language and social position to join into the city environment. In this context, it is important that integration of social structure of the city, development of communication, sharing and reflection of this harmony on the place are important for the vitality of the city.

It is possible to encounter successful examples in the world within the context of coast city projects (Hamburg, Amsterdam, Venice, Barcelona etc). In this transformation and vitalization process, the deficiency in Turkey results with putting the strategies into practice at once without being discussed and letting investors to be the leading actors instead of being passive participants.

The ugly constructions which ruin the city silhouette and organic pattern which we can define as an "architectural wildness", they should be removed; and the competent people should be recognized instead of foreign architects who design without knowing / living in Istanbul.

If it had been asked for a port to be built for the cruise ships to land in Karakoy, the pearl of the Bosphorus; Karakoy coastline should not have been the place for this! The demolition of the Historical Karakoy Passenger Hall is an extremely unfair and wrong implementation. After the project which was designed as a port for cruise ships is put into practice, it will be a question of fact that thousands of people will crowd together in Karakoy at the same time and how the traffic and region will carry that burden.

It is suggested that a specific environment which enables the spaces and buildings according to our cultural heritage must be re-evaluated and the knowledge of the architectural history shall evaluate in Turkey.

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ENVIRONMENTAL POLLUTION ANALYSIS FROM URBAN TRANFORMATION AND CONSTRUCTION AND DEMOLITION WASTES MANAGEMENT: ISTANBUL KADIKOY CASE STUDY

MELDA KARADEMIR, BUKET AYSEGUL OZBAKIR

Melda Karademir, Graduate Student, Yildiz Technical University, **Buket Aysegul Ozbakır**, Assoc. Prof., Yildiz Technical University.

Abstract

After the Industrial Revolution, especially environmental problems have increased with the rapid increase of the population. City planning became important for the growing population living in healthy conditions in cities. However, some problems have begun to arise with the urban transformation process, which started at risky buildings due to the need to raise the quality of life and make it more durable. Urban transformation sometimes leads to some environmental problems. One of the environmental problems are that particulate matter mixed into the air originating from the construction and demolition wastes generated during the reconstruction of buildings are also threats for human health. The other one is that noise pollution in regions where urban transformation is experienced intensively, various psychological disorders are increased.Also, as the recycling of construction and demolition wastes can't be realized in our country sufficiently, excavation land, construction and demolition wastes by trucks have been increasingly moved to the storage areas. The average amount of construction and demolition wastes are 4-5 million tons each year in Turkey. The amount of construction and demolition wastes are increasing with the urban transformation. This situation, which causes the traffic load to increase significantly, has serious problems especially in metropolitan cities. As long as these trucks are moved to the relevant areas especially in metropolitan cities, some excavation land, construction and demolition wastes truck drivers are casting construction and demolition wastes in the city center where the municipality does not allow. This situation causes land and visual pollution and these wastes may cause groundwater pollution by rainfall etc. mixing with groundwater. The asbestos buildings was mostly increased where numbers of destroyed buildings more in Kadikoy. This study shows that noise values caused by urban transformation are changed before and during construction wastes. Before construction activities, noise levels are changed between 40-55 dB and noise levels are changed between 52-70 dB during construction activities. These values are mapped via ArcGIS program which is Geographic Information Systems.This study determinates that the study will contribute significantly to the development of a method for reducing construction and demolition wastes, especially the environmental problems and the economic dimension f recovery and the problems of transporting. The unique value of the study is a Geographical Information System (GIS) based mapping of the environmental pollution due to urban transformation.

Keywords: urban transformation, environmental pollution ,noise, Kadikoy, GIS.

1. Introduction

Nowadays, it is important to prevent increasing environmental problems and to protect existing resources for a healthier future. Although the construction sector is an important contributor to the development of the community, environmental problems are also increasing with this sector. According to the United Nations Environment Program, the construction sector accounts for 30-40% of global energy use (Huang and Chen, 2015 pp. 6999).

One way to balance sustainable development is to use locally available wastes or recyclable materials. The production of concrete, which consumes a large amount of natural resources in the world, emphasizes the importance of preserving existing resources. It is estimated that concrete production consumes approximately 27 billion tons of raw material or four tons of concrete per year. It is estimated that 3.5 billion tons of CO2 will be released from cement production by 2025. For this reason, recycling has an important place in the conservation of resources. Many waste materials can not be efficiently depleted in open areas. The aggregate formation from construction and rubble waters presents an environmental solution (Alnahhal et al., 2017 pp. 1)

In this study, it is aimed to examine the classical conceptual dimension as well as the environmental dimension in detail in "urban transformation" and "construction and demolition waste" in national and international literature. It is important to taking into consideration the preservation of available resources for the sustainable development objective in the recovery and disposal of non-recyclable wastes in our country. Kadikoy will contributed to other counties and cities the management of consturction wastes as a result of various analytical studies to be carried out.

2. Urban Transformation

Urban regions can change with environmental, economic, physical, social, political and ideological influences. While these changes in the urban space sometimes increase the quality of life; sometimes causing the physical, environmental, social and economic collapse of the space (Fig. 1). Urban transformation is defined as initiatives aimed at eliminating such negative conditions (Akkar, 2006 pp. 29). Since the end of the twentieth century, debates about demolition and housing rehabilitation, especially due to the necessity of renewal of urban centers, have been increasing (Alba-Rodríguez et al., 2017 pp. 115).

Figure 1. Risky Building in Kadikoy.

3. Construction and Demolition Wastes

When wastes are not assessed, they can cause a great loss of resources as well as the environment if they are applied incorrectly. The European Commission has stated that only 80% of the products are used once and then discarded (Junak and Sicakova, 2018 pp. 1)

Wastes from construction and demolition activities create significant environmental impacts. These environmental effects can be considered as high energy consumption, solid waste generation, increase in greenhouse gas emissions and depletion of environment resources (Esa et al., 2017: 219). Recycling ensures that natural resources are efficiently used to protect the environment. It has an important role in increasing employment in waste management and fighting climate change. For this reason, the European Union is making production processes more efficient in order to reduce the amount of waste sent to landfills. (Junak and Sicakova, 2018 pp. 1).

The destruction or renovation of structures that have lost their function as building and wreckage and which have become depressed or at risk for natural disasters occur during the repair and renovation of existing structures, the renovation of asphalt and the repair of bridges. These wastes typically contain inert cement, briquettes, brick, wood, concrete, concrete and other building materials. In industrialized countries, construction and demolition wastes may also contain some harmful materials such as asbestos and PCB (Öztürk, 2017: 20). According to reports on construction and demolition waste in European countries, it has been reported that such wastes are well managed even though they account for about 25% - 30% of solid waste (European Commission (EC), Zheng et al., 2017 pp. 410). According to the EU Waste Framework Directive, by 2020 the construction and wreckage waste that is not dangerous for

reuse, recycling and other material recovery should be increased to at least 70% by weight (Zheng et al., 2017 pp. 410).

During construction and demolition studies;

➢ Contamination of surface and underground water resources by random placement of hazardous wastes,

Ø Contamination of underground and surface water sources of pollutants leaking from the places where construction and debris wastes are stored,

Ø It is necessary to prevent the pollution of drinking water wells (Öztürk, 2017 pp. 17).

Due to global concerns about environmental sustainability, the construction sector remains a major target for the global sustainability agenda (Ajayi et al. The reason for this is that it creates a significant portion of atmospheric CO2 and requires a large storage area (Ajay et al., Baek et al., 2017: 38). Reducing waste from construction activities provides significant economic benefits (Ajayi et al., 2017 pp. 39).

3.1. Construction and Demolition Waste in the World and Turkey

Nowadays, it is possible to recover 80-90% of construction and wreckage waste collected in most European countries. Of these, the highest yield of construction and demolition waste situation in four European countries and Turkey be detailed in Table 1.

Table 1. Quantities of Construction and Demolition Waste, Recycling and Waste Amount Ratio and Per Capita in Turkey and Europe in 2011 (Ayan from Tojo and Fischer, 2013 pp. 38).

Countries	**CDW (tons)**	**CDW Recycling Rate (%)**	**Population**	**Per Capita Construction and Debris Waste Amount (ton / person)**
Holland	78.331.000	% 98,1	16.690.000	4,69
Denmark	2.104.000	% 94,9	5.571.000	0,38
Estonia	436000	% 91,9	1.340.000	0,33
Germany	190.990.000	% 86,3	81.800.000	2,33
Turkey	158.040.000	% 31,0	73.640.000	2,15

Turkey had to be disposed of in the thick of construction and demolition waste and waste amount is higher than Germany and the Netherlands. In this case, Turkey regarding the recycling of waste construction and demolition waste are unable to compete with European countries. In the Netherlands, Denmark and Estonia, which have the highest recycling rates, there is waste tax. In addition, flammable, recyclable and reusable wastes are prohibited to be poured into waste areas. (Ayan, 2013 pp. 36).

Construction and debris are remnants produced by the refurbishment and destruction of structures and are an important part of the industrial waste. In the EU, the construction sector produces about 531 million tonnes of construction and debris, representing about one-quarter of all waste produced worldwide (Table 1). Most of the production comes from the UK, France, Germany and Italy (Calvo et al.,

2014: 419). According to Spain's latest legislation, it is aimed to reduce non-hazardous construction and demolition waste by at least 70% by 2020. The 3R model (Reduce, Reuse and Recycle) is adopted for the applicability of this system (Calvo et al., 2014 pp. 416).

3.2. Usage Areas of Construction and Demolition Wastes

The use of traditional cement contributes to the increase in carbon emissions. It also causes the formation of particulate matter and air pollution during the transportation of the cement mortar. For a healthier future, efforts to reduce environmental problems need to be intensified (Huang and Chen, 2015 pp. 6999).

The cement from the materials used in construction can cause the depletion of our resources and the pollution of the environment to produce and use. According to conventional cement processing methods, dry-mix mortar contributes to waste production and to reduction of carbon emissions. Despite efforts to develop green construction materials, only a few are currently in use. The fact that the work done is not adequately promoted causes the use of environmental construction materials to be low. Huang and Chen (2015) point out this issue. In this study, an analysis was conducted to verify the validity and predictability of samples based on the technology acceptance model (TAM). In Huang and Chen's work, it is proposed to publicize a systematic study with emphasis on the benefits of dry mortar (Huang and Chen, 2015 pp. 6999).

A mixture of water, sand, and cement is used in a conventional way for traditional cement. This method requires a large storage space and contributes to the formation of particulate matter and creates environmental pollution. Moreover, with this method, there is material loss and efficient use of available resources is not achieved. The dry mix mortar is mixed in the plant at a constant rate of powder form components such as cement, blasted granulated blast furnace slag, silicon ash, sand and other additives. With this method, a cleaner process can be achieved by avoiding problems caused by in situ mixing. Dry mix mortar is more environmentally friendly than conventional cement in emission reduction.) (Huang and Chen, 2015 pp. 7000).

<u>Recycling-Agrega</u>

The paper by Junak and Sicakova (2018) examines the development of recycled concrete aggregate (RCA) production. In the workings of Junak and Sicakova, two different methods were followed: a special mixing approach during the mixing process, and the coating before mixing the concrete and concrete. Density, total water absorption and pressure resistance results at 28, 90, 180 and 365 day recovery periods are presented and evaluated. Both methods seem to be a promising way to coat RCA with geopolymer slurry compared to normal concrete (Junak and Sicakova, 2018 pp. 1)

Rodríguez-Robles et al. (2014), a possible reuse option such as Mixed Recycled Aggregates (MixRA) and Ceramic Recycled Aggregates (CerRA) is determined in the production of concrete for recycled aggregate with a significant ceramic content. It contributes to environmental sustainability through recycling.

The use of recycled materials is becoming more and more important for efficient use of our limited resources. While much of the work being done is focused on the use of aggregates collected from concrete (RCA), a large number of studies have explored the possibility of partial replacement of conventional coarse aggregates (gravel) in concrete mixtures of recycled aggregates. The Spanish Code on Structural Concrete (EHE-08) makes it possible to incorporate up to 20% of recycled aggregates in concrete mixes (Rodríguez-Robles et al., 2014 pp. 5844).

<u>Deconstruction</u>

Deconstruction, degradation is the careful demolition of the building to ensure the recovery of building materials and components. In the article of Cuoto and Cuoto (2010), it emphasizes the importance of deconstruction by detailing the main advantages and disadvantages of this demolition technique. This technique offers recommendations for implementation in Portugal (Cuoto and Cuoto, 2010 pp. 428).

Waste Management

The current waste management literature is devoid of a comprehensive LCA (Life Cycle Assesment) on the recycling of construction materials that considers both building and supply chain impacts as a whole. Furthermore, it has not been addressed in any work that provides a quantitative understanding of the potential savings and impacts associated with the recycling of construction materials from a life cycle perspective into the framework of decision-making based on optimization. Küçükvar et al. (2016) is to provide a multi-criteria optimization model developed for a LEED-certified university building that is designed to provide economically sound and environmentally benign construction waste management strategies. First, an economic input-output based hybrid life cycle assessment model was developed to measure the total environmental impact of various waste management options such as various recycling, traditional storage and incineration. After quantifying the net environmental pressures associated with these waste treatment alternatives, a compromise programming model is used to simultaneously identify the most appropriate recycling strategy taking into account the environmental and economic impacts. The results of Küçükvar et al.'s analysis show that the recycling of ferrous and non-ferrous metals has a significant contribution to the reduction of total carbon footprint of waste management. On the other hand, the recycling of asphalt and concrete has increased its carbon footprint due to the high fuel consumption and emissions generated during the crushing process. Based on multi-criteria optimization results, 100% recycling of ferrous and non-ferrous metals, cartons, plastics and glass is important to maximize environmental and economic savings at the same time (Kucukvar et al., 2016)

Housing and commercial buildings produce significant amounts of construction and debris (C & D) waste in the United States. The estimated total amount of building related C & D materials is about 170 million freezes. According to the US Environmental Protection Agency (EPA) waste report, 39% of these wastes are from residential buildings and 61% from commercial buildings (Kucukvar et al., 2016)

LEED

The green building movement has adopted a variety of strategies to reduce C & D waste. Among the green building initiatives, the LEED rating system established by the US Green Building Council (USGBC) was widely accepted and accepted by various federal and state agencies to evaluate its buildings. LEED green building certification systems use a simplified checklist, mainly used in the design process. To obtain a LEED certification, a building must first fulfill certain prerequisites and then receive points for credits related to sustainable areas, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality and design process. In general, LEED new constructions can be applied to major renovation, existing buildings, commercial interiors, cores and shells, schools, retail, health services, homes and neighborhood development areas (Kucukvar et al., 2016)

LEED has two main types of construction waste:

Loan 2.1 (one point): recycling and / or rescue of at least 50 per cent of construction, demolition and land cleaning waste.

Credits 2.2 (one point): Recycling and / or rescue 25 per cent of the construction, demolition and land cleaning waste (total 75 per cent).

The credits are proposed to direct construction and demolition waste from landfills and direct recyclable materials to the manufacturing process. To achieve this goal, a detailed waste management plan needs to be developed for the recycling of various construction wastes such as cardboard, metal, brick, mineral fiber panel, concrete, asphalt, plastic, clean wood, glass, gypsum board, carpet. However, a goal such as "recycling 50% or 75% of the construction waste", without identifying the possible economic and environmental impacts associated with the recycling of each C & D waste material, may lead to a comprehensive understanding of the recycling of that waste material can. For this reason, recycling targets should be supported simultaneously with key decision-making models that take environmental and economic impacts into account (Kucukvar et al., 2016).

Although a considerable amount of LCA-based sustainability assessment of building materials and buildings has been undertaken, the existing literature lacks a comprehensive LCA on recycling of construction materials that takes both building and supply chain-related impacts as a whole. In addition, there is no mention of a decision support framework in any work that provides a quantitative understanding of the potential savings and impacts associated with the recycling of these construction materials from a life cycle perspective (Kucukvar et al., 2016).

Kucukvar et al. (2016), in his study, the LEED-certified Physical Science building at the University of Central Florida was selected as an area study for this research. The scope of the waste composition of building construction and demolition materials such as asphalt, concrete, wood, non-ferrous and ferrous metals, cardboard, plastic, glass and cardboard has been included. The total waste composition shows that concrete and asphalt have the largest share (over 60% of the total) between construction and demolition wastes(Fig. 2).

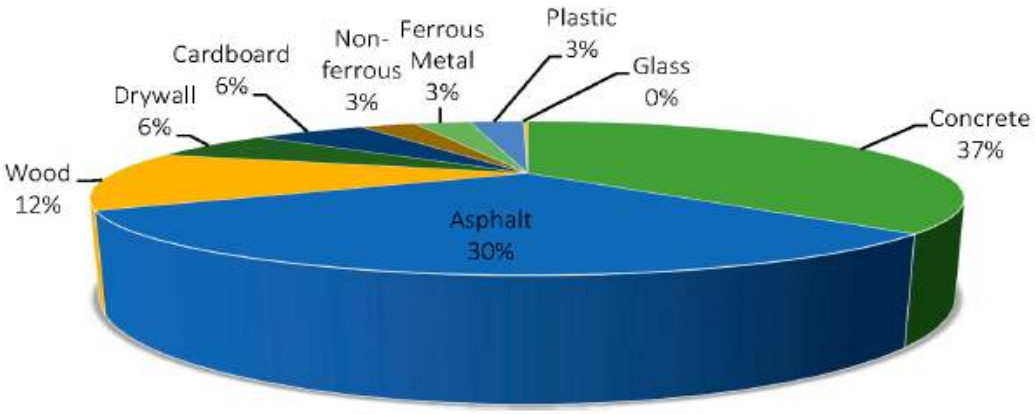


Figure 2. Percentage distribution of C&D wastes for the LEED-certified university building.

As a result, a high recycling of metals, glass, plastics and paper should be encouraged by policy makers to reduce the net water footprint of building-related construction waste. Other materials such as ferrous, plastic and glass recycling of C & D materials have been found to be a better strategy and policy makers should prioritize recycling of these materials. On the other hand, however, our results showed that the recycling of concrete was a positive contribution to the economy and the environment in terms of cost and energy savings. Recycling of concrete waste is one of the best methods, considering that the concrete waste composition is found to be higher than 80% of the C & D waste in many countries, such as Australia and Japan, and many studies have shown that many studies have shown that concrete can be recycled as

aggregate for new concrete production to provide a cost-effective method and to help protect the environment (Kucukvar et al., 2016).

4. Environmental Analysis Pollution from Urban Transformation: Kadikoy Case Study

This study aimed to determine the level of noise caused by urban transformation in Kadikoy, Istanbul. Another purpose of this study was to identify the asbestos buildings in Kadikoy and effects of asbestos on human's health.

Pollution, is the contamination with materials harmful to health, quality of life or normal functioning of natural ecosystems (Dancilescu et al., 2015). Environmental pollution is one of the most problems the world faces today. In the 80's global warming and climate changes became the major environmental problems for developed countries. The term 'sustainable development' accepted development strategies for most of the developing countries in the 80's. Since the second half of the 20th century, lots of studies have indicated inhalation of asbestos fibers as the major cause of lethal diseases including fibrosis and cancer. (Spasiano and Pirozzi, 2017). Occupational exposure to asbestos causes an estimated 107,000 deaths per year in the World (Takashi et al., 2016).

In regions where urban transformation is experienced intensely, noise pollution is caused and various psychological disorders are increased. According to the WHO, nowadays noise pollution is the third most important environmental type of pollution after air and water pollution(WHO, 2005). Noise may reduce productivity of labour, concentration and attention. Noise can cause to negative effects on human activity (Popa et al., 2015).

Scientific researchers have shown that noise pollution causes physical and psychological problems as well as hearing problems (Murat ve Ebru, 2016). Environmental protection and pollution reduction are important topics today, both for science and society. The negative effects on humans are shown in Table 2.

Table 2. Negative effects of noise (Cura, 1994).

Value dB (A)	**Effects**
30-65	inconvenience, anger, sleep and attention disorders
65-90	increase of blood pressure, the acceleration of the heartbeat and respiration
90-120	headache
120-140	permanent damage to the inner ear, balance disorders
>140	severe brain damage

Environmental pollution has increased considerably due to this urban transformation process, which is being carried out intensively in Istanbul. CDW activities create significant environmental impacts. The management of CDW has become one of the major environmental issues in the construction industry (Cosgun ve Arslan, 2011).

These environmental effects can be considered as high energy consumption, solid waste generation, increase in greenhouse gas emissions and the depletion of environmental resources (Esa et al., 2017). Due to global concerns about environmental sustainability, the construction sector remains a major target for the global sustainability agenda. Reduction of waste from construction activities provides significant economic benefits (Ajayi et al., 2017).

Kadikoy Case Study

Study area. Kadikoy is located in the southwest part of the Kocaeli Peninsula, which is located in the Anatolian Region of Istanbul. It is adjacent to the Marmara Sea in the west and south, Üsküdar in the north, and Ataşehir and Maltepe in the northeast. The surface area is 25.2 km^2. According to TURKSTAT data, the population is 451,453 in 2017. It consists of 21 districts: Acibadem, Bostanci, Caddebostan, Caferaga, Dumlupinar, Egitim, Erenkoy, Fenerbahce, Feneryolu, Fikirtepe, Goztepe, Hasanpasa, Kosuyolu, Kozyatagi, Merdivenkoy, Osmanaga, Rasimpasa, Sahrayicedid, Suadiye and Zuhtupasa (Fig. 3). The Black Sea and the Mediterranean climate are dominant and the neutral plant cover is lemur. Kurbagalidere is the only stream that flows. The historical core forming the beginning of the settlement in Kadikoy is located within the area formed by the Haydarpasa Cove Circle and Moda Cape. Nowadays, Kadikoy is a town where mostly middle and upper income groups reside. Despite limited production activities, today as a result of concentration in trade and service sectors, Kadikoy has become one of the most important metropolitan sub-centers of Istanbul (Ajayi et al., 2017).

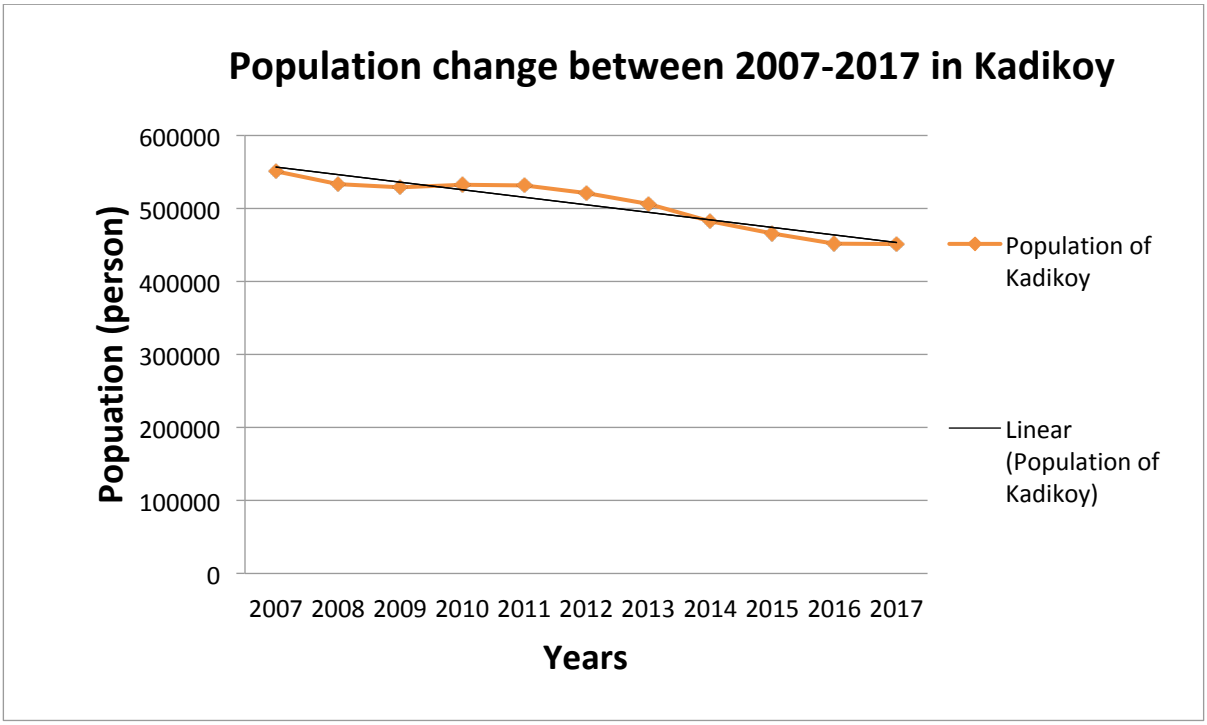
Fig. 3. Neighborhoods of Kadikoy.

Materials and Methods. The universe in study is Kadikoy district. Kadikoy Municipality, TUIK and some buildings have been carried out in the direction of the information taken from the companies that make the destruction. Data were analyzed by quantitative analysis method. The results of the noise values are detailed for district of Kadikoy. Two different applications were used to reach these results that "Toold Device" and "Splend Apps". Noise values were made between March and May 2017. Mapping is based on the average of two measurement applications.

Results and Discussion

Urban transformation activities are taking place intensively in Kadikoy district. According to the data taken from TUIK, according to the data of the year of 2017, it seems that the population residing in Kadikoy has decreased in recent years. The population of 550,801 in 2007 decreased to 451,453 in 2017 (Table 3).

Table 3 : Population change between 2007-2017 in Kadikoy (TUIK, 2018)



Before 2010, asbestos materials are used in the buildings. Asbestos is a carcinogenic substance which is used in many industries such as construction, ship, automotive, etc., and is resistant to fire. When asbestos is absorbed into the air and taken to the body by the respiratory system, it is carcinogenic. That's why when the buildings with asbestos containing materials are demolished, disposal of the asbestos material by the special clothes teams is carried out. Nowadays, the process of urban transformation and the destruction of asbestos buildings must be carried out carefully.

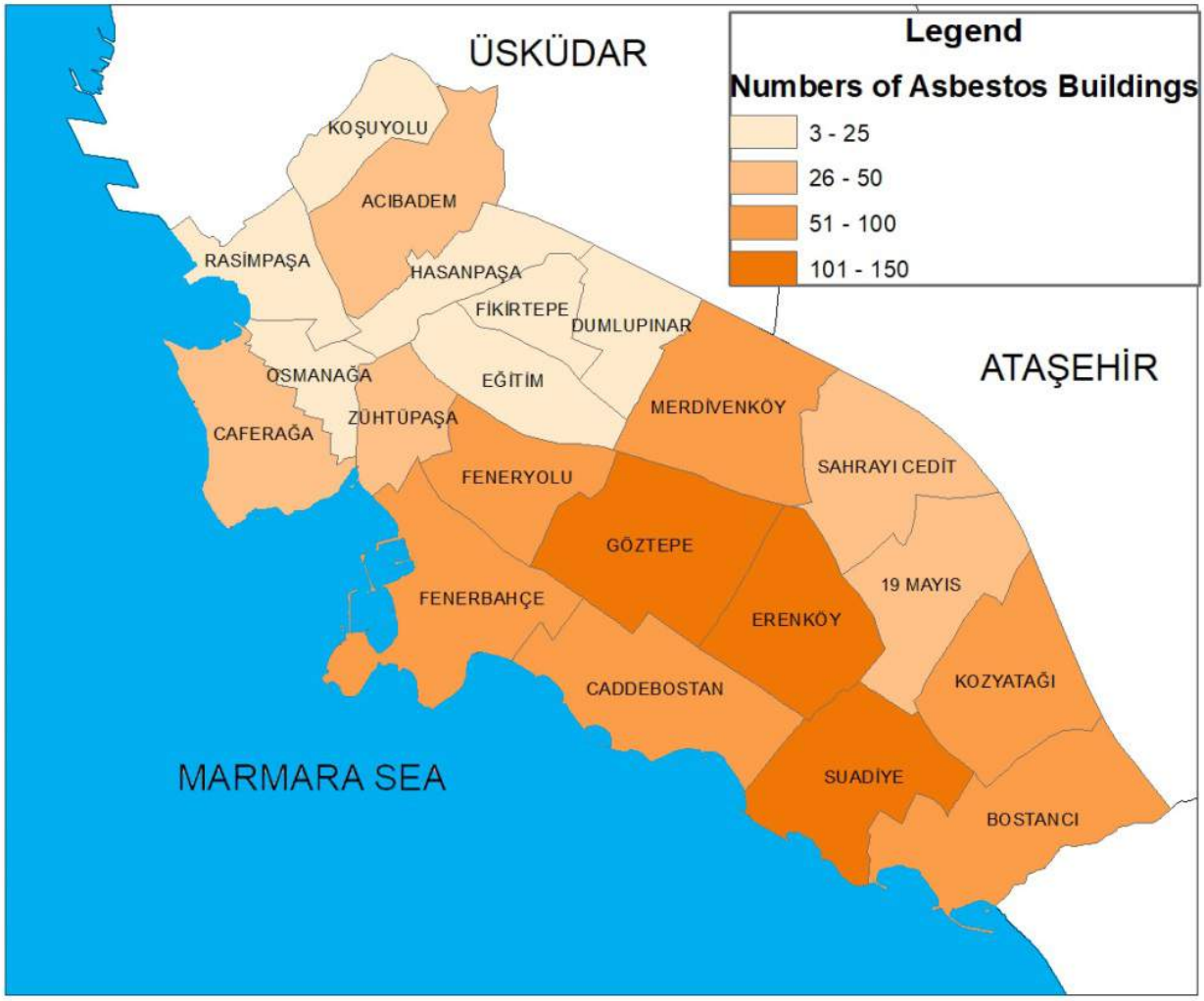


Fig. 4. The number of asbestos buildings in the province of Kadikoy between 12 November 2012 and 27 April 2017.

It is known that asbestos is found in 1 out of every 3 buildings destroyed in Kadikoy.[1] The number of asbestos buildings detected between 12 November 2012 and 27 April 2017 belonging to Kadikoy district in Figure 1. The asbestos building according to Fig. 2 was mostly detected in Bostanci, Erenkoy, Goztepe and Suadiye. Fikirtepe has a special condition due to also demolisged withotr the number of risky buildings. It is one of the places where the demolition processes are performed intensely today.

[1] http://www.milliyet.com.tr/halk-sagligina-asbest-darbesi-gundem-2605169/

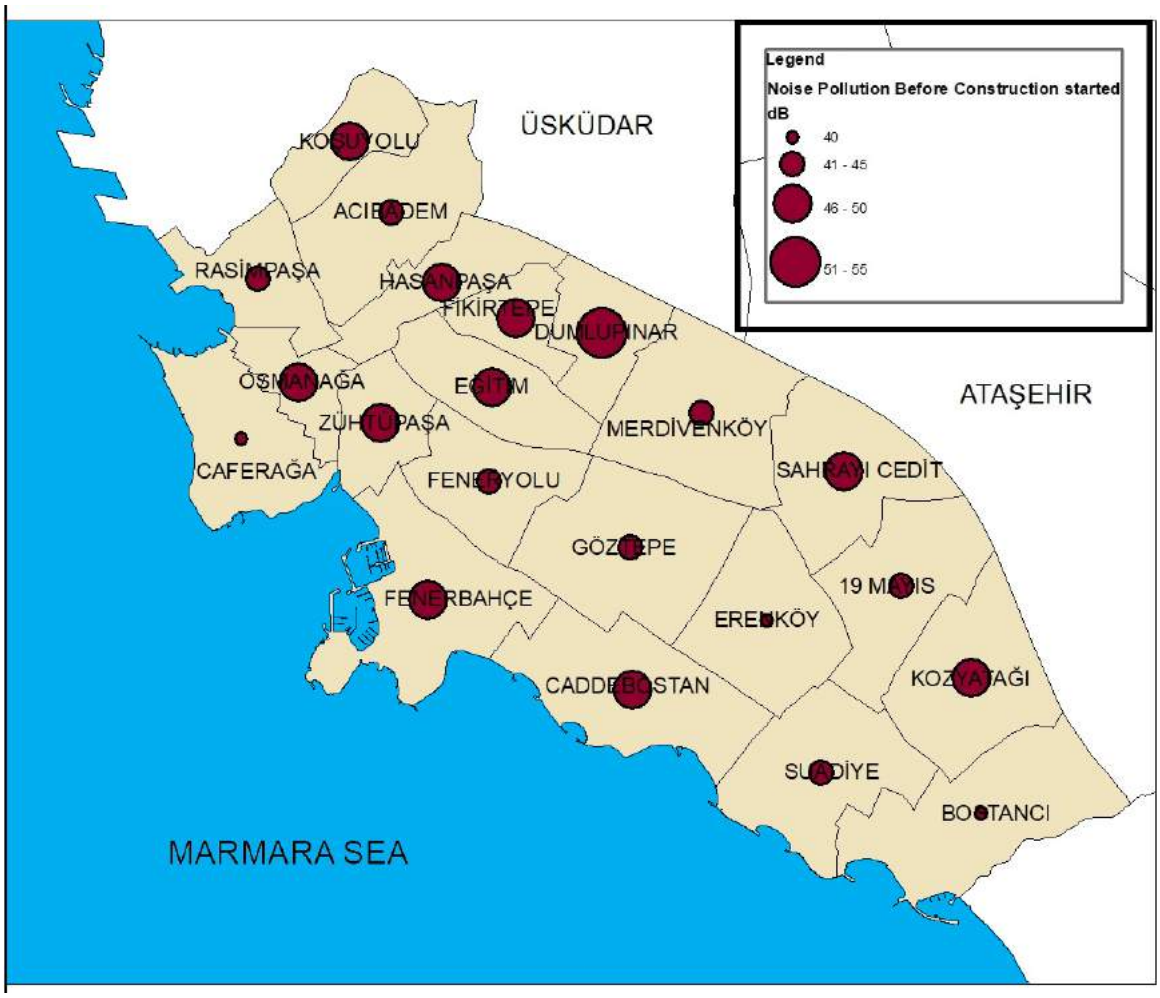


Fig. 5: Noise levels before construction activities started between March-May 2017.

Noise levels of environmental pollution typologies caused by urban transformation from March to May 2017, results of noise values were mapped by "Toold Device" and "Splend Apps" applications. First, the results of two different applications before construction begins are detailed in Figure 5. Before the beginning of construction, noise values change between 40-55 dB in Kadikoy.

Fig. 6: Noise levels during construction activities between March-May 2017.

According to Figure 3 and Figure 4, noise pollution levels are different before and during construction activities. Figure 3 shown before construction activities, noise levels are changed between 40-55 dB. These values cause inconvenience, anger, sleep and attention disorders with reference to Tablo 1. In addition, Figure 6 shown that noise levels are changed between 52-70 dB. These values cause increase of blood pressure, the acceleration of the heartbeat and respiration.

Noise is considered to be much more with urban tranformation acvitivities which occur construction and demolition wastes in the coming years. Therefore, it is necessary to make urban plans in order to decrease the noise effect.

5. Conclusion

Istanbul is one of the cities where urban transformation has been intensively experienced. It experienced rapid urbanisation due to industrialization and the increase of population. Urban tranformation may cause environmental problems. One of the these environmental problems are noise pullution. Noise pollution is a major environmental problem in many urban areas. There is an increase in noise with urban transformation which construction demolition activities. In this study, noise pollution from environmental pollution typologies originating from urban transformation was mapped via ArcGIS program.

The presence of asbestos in destroyed buildings threatens the health of the people living in Kadikoy where there are lots of destroyed buildings. It is determined whether there is asbestos in the building to be demolished before the destruction of the building by Kadikoy Manicipality. However, every municipality does not realize this process in Kadikoy. It is necessary make legal arrangements in order to minimize the environmental problems of the urban transformation process. It is important to reduction of CDW for sustainable city. Consequantly, with waste minimization, we use both our limited resources efficiently and create less environmental pollution. Recycling of wastes are more important than before.

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INVESTIGATION OF SOME SOIL PROPERTIES DEPENDS ON HABITAT FRAGMENTATION IN THE GREEN BELT URBAN FOREST ECOSYSTEMS (KAHRAMANMARAS AHIR MOUNTAIN STUDY CASE)

TURGAY DINDAROGLU, HASIBE CELIK

Abstract

Green belt forest ecosystems, which provide significant aesthetic and ecological functional contributions to urban spaces and urban people are among the most affected terrestrial ecosystems due to excessive population growth. Today, these ecosystems are losing their integrity and productivity of their functional services out of the very close to the residential areas.

In this research, the fragmentation status and soil characteristics of forest ecosystems, which are described as green belt that has been afforested since 1960s in Kahranmaras province, Ahir Mountain surrounding the city have been analyzed. In this study, 30 fragmented habitats were detected using Landsat8 satellite images. 60 surface soil samples were taken from these forest ecosystems which are dominated by limestone bedrock and which are seen to the south and have an average altitude of 845 m. With these soil samples pH, electrical conductivity, texture, dispersion ratio, fading point, organic matter content, cation exchange capacity (CEC), lime content, porosity, bulk density, grain density and water retention capacity were analyzed.

In the study area the fragment size in the green belt forest ecosystems ranges between 0,54 ha and 69,9 ha and the distance between the fragment ranges from 4,79 m-980 m.

According to soil analysis results change between these values; pH value 7.25-8.74, EC 67.50 mmhos/cm-347 mmhos/cm, dispersion ratio 32.61%-91.55%, fading point 17.42%-39.40%, organic matter content 0.39%-11.53%, CEC 11.97 cmol/kg-27.47 cmol/kg, lime ratio 0.90% to 43.08%, porosity 26.74%-71.03%, bulk density 1.06 gr/cm3-2.10 gr/cm3, particle density 2.08 gr/cm3-2.92 gr/cm3 and water retention capacity 15.12%-176.02%.

In addition to habitat size, the distance to other habitats in the study area has been found to closely influence the characteristics of the habitat and soil characteristics. According to correlation analysis, the tendency of organic matter content, porosity ratio and water holding capacity to decrease, the tendency of bulk density and dispersion ratio to increase as habitat areas become smaller. Decreasing the size of the forest area and increasing the distance to other forest parts has caused the dispersion ratio to increase further. Due to the fact that the habitats are separated from each other by small pieces the sensitivity of erosion is increased out of the dispersion ratio in the field. According to the results of the regression analysis R2 value between fragmentation and soil properties was determined as 0.45 (Sig <0.05). The historical background of fragmentation in forest ecosystems also affects the relationship between them. The formation of some parts of fragmentation in recent years is thought to reduce the importance of the relationship between variables.

Green belt of forest ecosystems should be protected and should not be allowed to different land use in urban development plans.

Keywords: Green Belt Ecosystems, Fragmentation, Remote Sensing, Urban Ecology

WATER MANAGEMENT IN LANDSCAPE: AN EXAMINATION OF WATER FUNCTION WITHIN THE SCOPE OF SOME LANDSCAPE PLANNING AND DESIGN PROJECTS

DUYGU DOĞAN ŞÜKRAN ŞAHİN, HALİM PERÇİN

Duygu Doğan [1], Şükran Şahin [2] Halim Perçin[2]

[1]Pamukkale University Faculty of Architecture and Design, Departman of Landscape Architecture

[2]Ankara University, Faculty ofAgriculture, Department of Landscape Architecture

Abstract

Water resources are rapidly depleted in our of ever-increasing urbanisation. The balance of use and protection must be well established in order to hand down the resources to the future generations. The biggest challenge is to develop high scale water management plans with low scale designs that do not create future social and environmental problems while enabling the cover the need of the communities.

The purpose of this study is to examine water management practises in the current planning and design projects, and assess whether high scale decisions are appropriate to the low scale design decisions. To that end following projects are examined: Tübitak KAMAG Project No 109G074, Project for Assessing Landscape Character Analysis and Tourism and Recreation, Ankara Hacıkadın Landscape Design Project for Recreation Area within Forestry, Ankara Payamlıtepe Landscape Design Project for Recreation Area within Forestry, Construction Plan with a Focus of Landscape Planning and Protection and Landscape Design in Uludağ National Park Sarıalan-Çobankaya-Karabelen-Kirazyayla-Yılanlıkaya Locations, Reclamation to Nature and Landscape Rehabilitation and Recreation. Analyses that identify the water feed areas within mentioned projects are addressed, and high and low scale decisions are referred to within the mentioned analyses. Harmony of the taken decisions are investigated in comparison to the design criteria. Methods used are assessed under different categories such as technological, methodical, temporal and spatial at the end of the study.

Decisions that will be taken on all scales from spatial planning to design must be in harmony with each other and realistic solutions must be introduced. Within this scope, identification of water feed areas is of vital importance in terms of planning and design activities for the protection and handing down water resources to the future.

Keywords: Groundwater feed, surface water flow potential, planning strategies, design strategies

1. Introduction

Water resources are rapidly depleted due to reasons such as urbanization, increased population and climate change. Sustainability of resources depends on a delicate balance of protection and use. In that

context, the solution is to develop high scale water management systems and decisions that ensure covering the needs of the people, and also low scale designs according to those decisions without creating social and ecological problems.

Landscape design involves significant results in directing and making use of water process (Figure 1). The biggest impact of settlement on hydrology is due to the fact that the flora such as forests and meadows are turning into impermeable structures such as roads and buildings. Due to decreased green land, rainwater cannot be absorbed by the soil, and feed to underground water is hindered. As a result, a significant amount of rainwater is discharged into sewage or rivers through surface drainage. That leads to overflowing of riverbeds and floods, while at the same time having a negative impact on the stream bank erosion. Decreased green areas lead to decreased transpiration, which is water evaporation from leaves of plants, whereat the urban climate may be negatively influenced in terms of comfort criteria of climate Whitford et al. 2001, Şahin et al.2011).

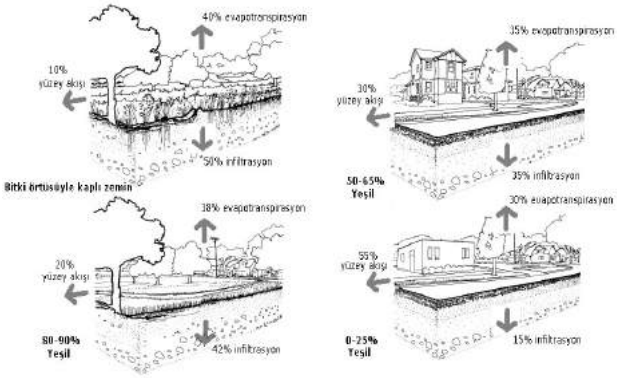


Figure 1 Rainwater Drainage and Infiltration According to the Amount of Green Land (Bonsignore 2003, Şahin et al.2011).

Moving on from the facts above, the identification of underground water feed areas was regarded as mandatory in order both to detect where the continuation of natural cycle would be and to be able develop landscape design criteria.

In the light of the previous descriptions, the aim of the study is to examine the water management activities on current planning and design projects, and also to assess the compatibility of high scale decisions with low scale decision of design. In this context, the study examines following projects;

TUBITAK KAMAG Project No 109G074 Assessment of Landscape Character Analysis and from the Perspective of Tourism/Recreation on Provincial Scale, Ankara Hacıkadın Landscape Design Project for Recreation Area in the Forest, Ankara Payamlıtepe Landscape Design Project for Recreation Area in the Forest, Landscape Planning and Protection based Construction Plan and Landscape Design Activities for Uludağ National Park, Sarıalan-Çobankaya-Karabelen-Kirazyayla-Yılanlıkaya Locations, as well as the Project for Restoration and Rehabilitation of Nature and Recreation.

2. Material and Method

The main material of the study is comprised of the areas of four mentioned projects. The first one, TUBITAK KAMAG Project No 109G074 Assessment of Landscape Character Analysis and Its Assessment from the Perspective of Tourism/Recreation on Provincial Scale is a planning activity on the scale of

1/25000, and covers the Province of Malatya. Malatya is positioned in the Eastern Anatolia Region between 35 54' - 39 03' North latitudes and 38 45' - 39 08' East longitudes (Anonymous, 2011). It is surrounded by Elazığ and Diyarbakır on the East, by Adıyaman on the South, by Kahramanmaraş on the West, by Sivas and Erzincan on the North (Figure 2a) (Kaymaz, 2014; Doğan and Şahin 2017a).

Ankara Hacıkadın Landscape Design Project for Recreation Area in the Forest and Ankara Payamlıtepe Landscape Design Project for Recreation Area in the Forest are planning and design activities, and these areas are the forests that belong to the state on the North of Ankara with 148 ha of Hacıkadın (Figüre 2b) (Perçin et al., 2012a) and approximately 417 ha of PayamlıTepe (Figüre 2b) (Perçin et al., 2012b).

Landscape Planning and Protection based Construction Plan and Landscape Design Activities for Uludağ National Park, Sarıalan-Çobankaya-Karabelen-Kirazyayla-Yılanlıkaya Locations, as well as the Project for Restoration and Rehabilitation of Nature and Recreation is within the boundaries of Uludag National Park in Bursa Province (Figure 2c).

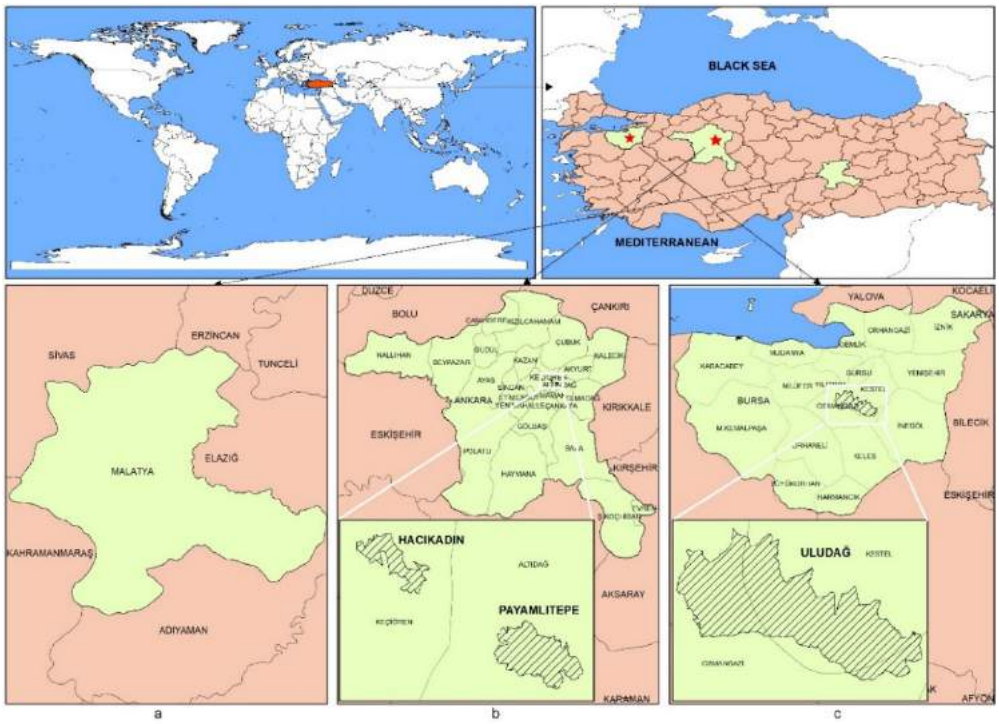


Figure 2 Locations of the study area

Water management activities within the mentioned four Projects are tackled from the perspective of planning strategies and design principles; and the compatibility is assessed comparing high scales decisions with low scale design decisions within the scope of the study.

3. Findings

We benefited from Buuren (1994)'s Analysis for Hydrological Landscape Structure implemented on Regge River water basin in Netherlands to identify the feeding areas for underground water which need to be protected for ecological functionality. Geological structure and the characteristics of soil are determinant parameters of this method which enables the detection of infiltration and exfiltration zones, as well as the sites that need protection on highest level ecologically.

According to Buuren (1994), generally the underground water feed (infiltration) zones are important areas fort the development of the ecosystem. Changing the flow path of groundwater both underground and

overground lead to destruction of interaction and features within the landscape or manifestation of different natural conditions.

The modeling of underground flow system is highly complex. In this respect the concept of "underground water flow" developed by Toth (1963) lays the ground for understanding the importance of water flow within the ecological relationships in landscape (Figıure 3). According to this concept, water flow systems can be explained via the locally and regionally important subsystems that are formed in a hierarchical order which overlap with one another. These flow systems have different spatial units within the landscape that are or are not interwoven with one another within the groundwater flow (Buuren 1994, Şahin et al.2013)

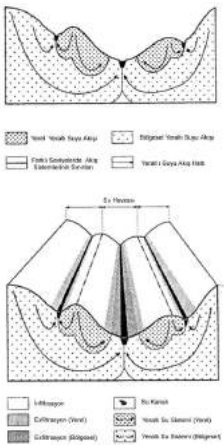


Figure3 Method of Water Permeability Analysis of Landscape (Buuren 1994; Şahin 1996 Şahin et al.2013)

Methods of analysis used within the study are explained under relevant headings.

3.1. Analysis of Water Permeability

In the light of what has been said, we made use of Analysis of Hydrological Landscape Structure method implemented on Regge River water basin in Netherlands by Buuren (1994) while investigating the water permeability (Şahin et al.2011).

Geological structure and characteristic of the soil within the area of study are determinant parameters of this method which enables the detection of infiltration and exfiltration zones, as well as the sites that need protection on highest level ecologically. Steps in Figure 4 are taken in adapting the method to the study area (Buuren 1994; Şahin 1996; Şahin 1998; Kurum and Şahin 1998; Şahin 2005a; Şahin 2005b; Şahin et al.. 2005c; Şahin and Dilek 2006; Şahin 2001; Şahin 2007; Dilek et al. 2008; Uzuna nd Gültekin 2011; Uzun et al. 2010, Şahin et al.2011).

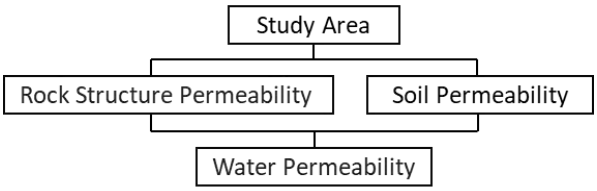


Figure4 Method of Water Permeability Analysis (Buuren 1994; Şahin 1996, Şahin et al.2011).

3.2. Surface Flow Analysis

We made use of Surface Flow Curve Number (CurveNumber/SCS CN) method which is widely used in examining the surface flow potential in landscape/land planning (Şahin et al.2011).

Curve Number is a parameter useful in calculating the amount of water that flows during precipitation on a land. The determination of CN value depends on planner as well as the interpretation of the data of land and soil in which land use or flora, type of plantation and hydrological conditions play a role. As CN value goes up, surface flow increases and vice-versa. This method is relatively more successful in small and homogenous land, if applied to larger areas verification and additional soil analyses are required (). Obtained CN (surface water flow curve number) values are inserted in the formula below to calculate the maximum water retention potential (S) after the surface water of the basin starts flowing (Şahin et al.2011).

$S=(25400/CN)-254$

The S value (mm) obtained is calculated with the amount of precipitation to reveal surface flow value (). Formula () used to calculate the surface flow value can be seen below ().

$Q=(P-02xS)^2 / (P+08xS)$

Q=Amount of surface water flow (mm)

P=Rain water (mm)

Methods explained under the headings of water permeability and surface flow analysis are used to examine the water function of the landscape within the investigated projects.

3.3. Examination of Water Function within the Scope of Planning and Design Projects

The scales, the scope (planning, design), subject, field status (national park, urban forests) and location of areas within the studies are pretty different from each other. Each landscape is unique. In addition to that, the scale and the scope of the projects at hand are different too. Hence, even though the analyses and methods used are common, the reflection to the design projects (material used, land use) will be different.

Analyses about the water function in the design projects within the study are tackled under the scope of functions which is one of the three components that create a landscape under the heading of Landscape Character Analysis and Assessment.

In our country, decisions are taken and physical plans are created according to administrative boundaries in current land use plans. However, the continuity of the ecologic function of the landscape does not end at the administrative boundaries, it takes place within boundaries set with natural vital processes (Treewek, 1999). Our studies take the boundaries of natural landscape into account primarily, besides the administrative boundaries. Especially in studies related to water functions, systems that have an impact on water function should be considered. In this scope, the area of work is set according to existing river systems by identifying the water basin that covers the area of work. Buffer zones are set within the boundaries around the design areas to express the impact area (500m in Uludag National Park, 200m in Ankara Hacıkadın and Payamlıtepe Forest Recreation Zones) (Figure 5a, Figure5b, Figure5c)(Doğan and Şahin 2017b).

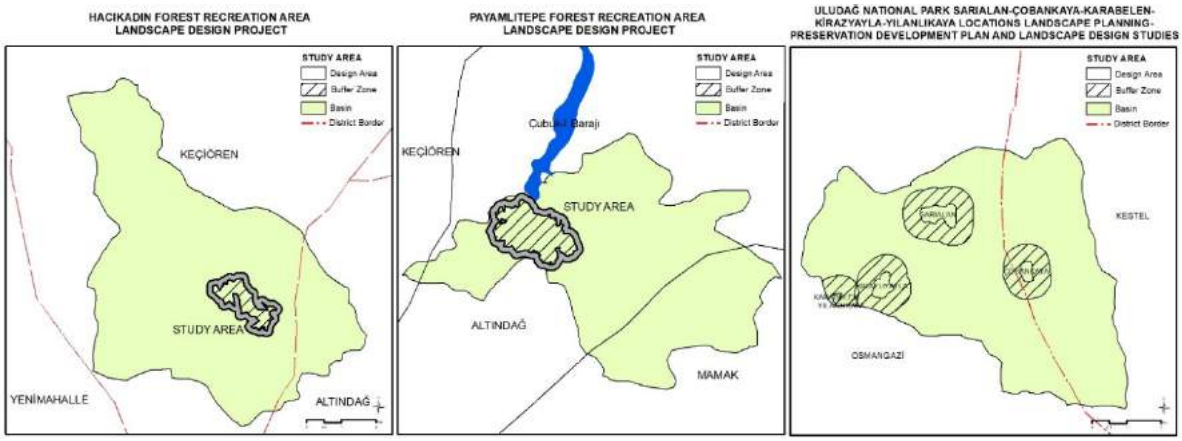


Figure 5 (a) Hacıkadın Forest Recreation Area (b) Payamlıtepe Forest Recreation Areave (c) Uludag National Park stıdy areas

Analyses, design projects and details of examples about the processes in the projects examined in the light of what has been said are given under relevant headings.

3.3.1. Tübitak KAMAG Project No 109G074 Landscape Character Analysis and its Assessment from the Perspective of Tourism/Recreation on the Provincial Scale

This Project is implemented by Şahin et al (2011) from 2010-2013 in order to identify Landscape Character Analysis on Provincial Scale in Malatya. Functions are tackled within the project as one of the three components that make up of the landscape. Water permeability and surface flow analysis are also discussed within the scope of the study.

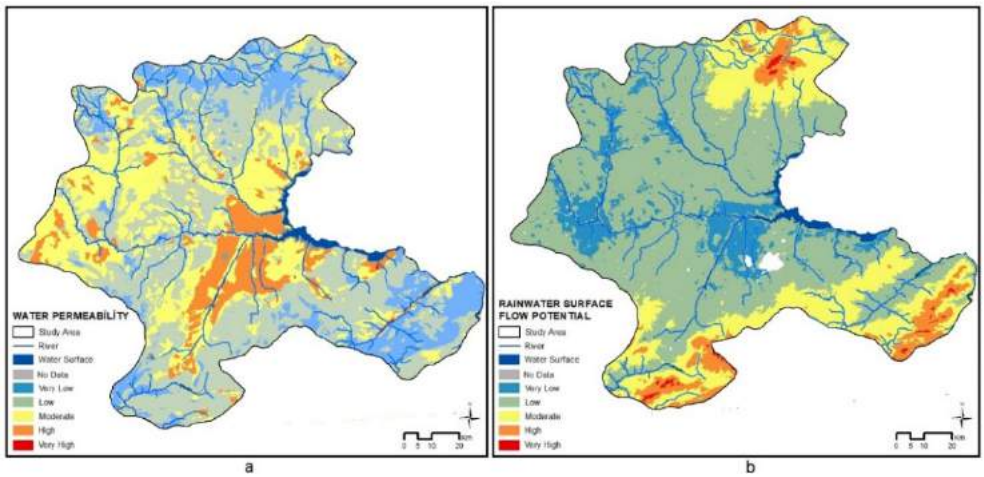


Figure 6 Water permeability map of Malatya can be found in Figure6a, and surface flow potential map in Figure 6b (Şahin et al 2012)

Water function is assessed within the scope of general targets of Landscape Protection-Improvement-Management Strategies (Table1), general strategies and comprehensive strategies within the project. General Strategies are set without considering what the function is. So, general strategies will not be examined.

Function	Function Grade	Target/Policy

Surface flow potential	High	Control of significant surface flow
	Moderate	Control of surface flow
Water permeability	High	Protection of significant underground feed areas
	Moderate	Protection of permeable areas

Table1 General Targets about Malatya Province's Landscape Functions

Comprehensive strategies are developed according to the overlay of landscape function value with General Landscape Strategies, LCA and LCT as well as the landscape targets of each landscape function which were identified in previous phases (Şahin et al 2013). Therefore, one character area of the Project is selected as the example area and comprehensive strategies were set for this area. Comprehensive landscape protection-improvement-management strategies for the selected Apricot Gardens Landscape of Kale in Malatya Province are demonstrated in Table2.

Landscape Design (Grade 1)	Landscape Function Grade		
Natural Areas (D)	High	Moderate	Low
Water Permeability (SU_GCR)	SU_GCR_D1	SU_GCR_D2	SU_GCR_D3
Surface Flow Potential (YAP)	YAP_D1	YAP_D2	YAP_D3
Agricultural Land (T)	High	Moderate	Low
Water Permeability (SU_GCR)	SU_GCR_T1	SU_GCR_T2	SU_GCR_T3
Surface Flow Potential (YAP)	YAP_T1	YAP_T2	YAP_T3
Settlement(Y)	High	Moderate	Low
Water Permeability (SU_GCR)	SU_GCR_Y1	SU_GCR_Y2	SU_GCR_Y3
Surface Flow Potential (YAP)	YAP_TY	YAP_Y2	YAP_T3

SU_GCR_T 1	Not using chemical substances for agriculture activities/organic agriculture
SU_GCR_T 2	Minimization of use of chemical substances for agriculture activities considering the pollution level of underground water
SU_GCR-D1	Protection of significant underground water feed areas, and plantation sites to that end
SU_GCR-D2	Areas that require measures that will increase water permeability (water harvest) and prevent underground water pollution
SU_GCR_Y 1	Rain water management plan should be prepared and surface should not be covered with impermeable material
SU_GCR_Y 2	Rain water management plan should be prepared and water harvest zones should be established

Table2 Comprehensive landscape protection-improvement-management strategies for Apricot Gardens Landscape of Kale in Malatya Province (Şahin et al.2013).

3.3.2. Ankara Hacıkadın Landscape Design Project for Recreation Area in the Forest

Landscape development projects are prepared for the picnic and recreation areas in Hacıkadın State Forest Area with a size of approximately 148 hectares, located in Altındag District by Percin et al from 2012-2013 as the outcomes of this project. Water permeability (figure 7a) and surface water analysis (figure 7b) are addressed regarding the underground water feed tackled under the functions as one of the three components that make up of landscape under the headline of Landscape Character Analysis and its Assessment under the scope of Preliminary Phase, which is completed within the first phase of the project. General design strategies set are as follows:

- North-eastern boundary of the project area has moderate grade permeable soil. Green texture should be improved in this area in order to improve underground water feed. Impermeable surfaces should not be created in these permeable areas by the selection of equipment material.
- South-western boundary of the projects area has soil with high potential surface flow for rainwater. On the other hand, low rainfall decreases the risk. Rain water drainage should be done in these areas in the projects considering the peak rain season.
- A soft transfer will be designed for the drainage systems in the project area and its periphery.
- Geological permeability is high in all area. As the soil parameter permeability is moderate, general permeability is too. This highlights the importance of soil management in terms of underground water feed.
- Structures will be avoided in areas with moderate and high level of surface flow and flora will be developed to strengthen the underground water feed.
- Drainage channels will be put on the sides of the road to control water flow.

Design project carried out according to these general design strategies and principles is demonstrated in figure 7c.

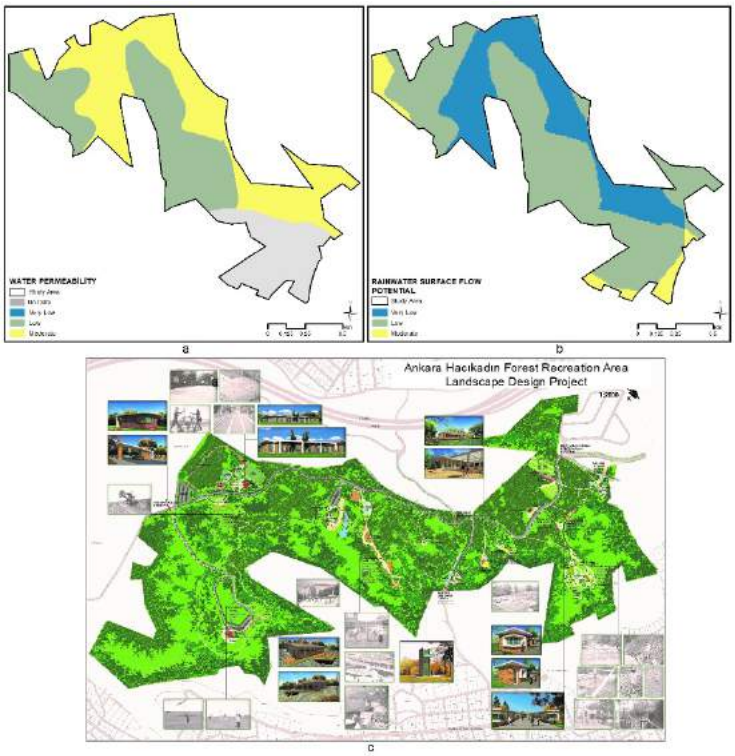


Figure 7 (a) Water permeability (b) Surface Flow Potential (c) Conceptual plan (Perçin et al.2012a)

3.3.3. Payamlıtepe Landscape Design Project for Recreation Area in the Forest

Landscape development projects are prepared for the picnic and recreation areas in Payamlıtepe State Forest Area with a size of approximately 417 hectares, located in Altındag District by Percin et al from 2012-2013 as the outcomes of this project. General design strategies can be found below, which are developed considering the water permeability (figure 8a) and surface water analysis (figure 8b) about the underground water feed addressed under the functions as one of the three components that make up of landscape under the headline of Landscape Character Analysis and its Assessment under the scope of Preliminary Phase, which is completed within the first phase of the project.

- Impermeable surfaces will not be created in permeable areas.
- Rain water drainage will be made possible in areas with high surface flow.
- A soft transfer will be designed for the drainage systems in the project area and its periphery.
- Structures will be avoided in areas with moderate and high level of surface flow and flora will be developed to strengthen the underground water feed.
- Drainage channels will be put on the sides of the road to control water flow.

Design project carried out according to these general design strategies and principles is demonstrated in figure 8c.

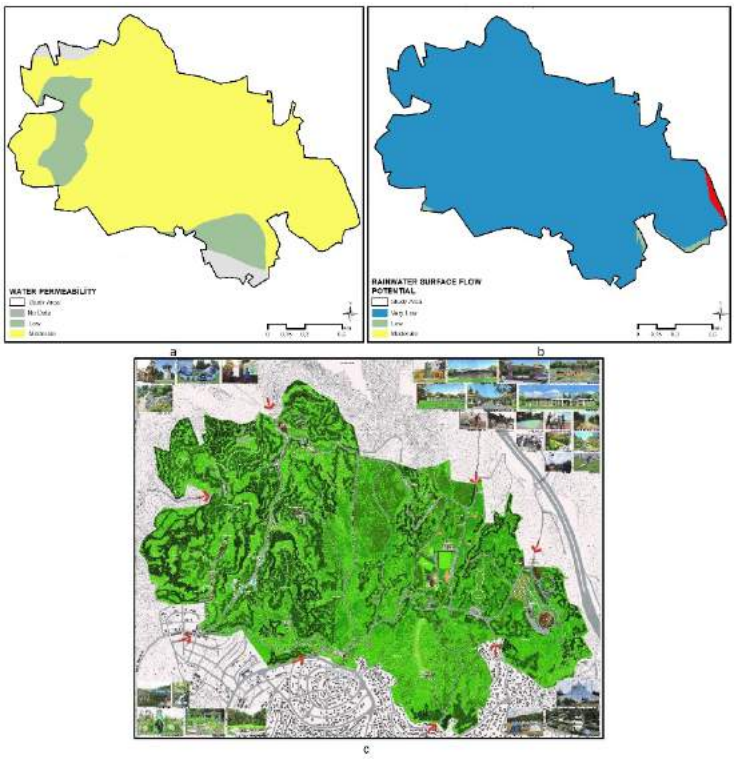


Figure 8 (a) Water permeability (b) Surface Flow Potential (c) Conceptual plan (Perçin et al.2012b)

3.3.4. Landscape Planning and Protection based Construction Plan and Landscape Design Activities for Uludağ National Park, Sarıalan-Çobankaya-Karabelen-Kirazyayla-Yılanlıkaya Locations

Aim of the project is to create a landscape design for the areas of camping with tents and picnicking in Sarıalan-Çobankaya-Karabelen-Kirazyayla-Yılanlıkaya locations within the National Park of Uludağ. Functions component one out of three making up of the landscape is tackled in that sense under the

headline of Landscape Character Analysis and Assessment. Water permeability and surface flow analysis are addressed in the study.

Water permeability map of Landscape Planning and Protection based Construction Plan and Landscape Design Activities for Uludağ National Park, Sarıalan-Çobankaya-Karabelen-Kirazyayla-Yılanlıkaya Locations can be found in Figure9a, surface flow potential map in Figure9b, designs for camel areas in Figure9c.

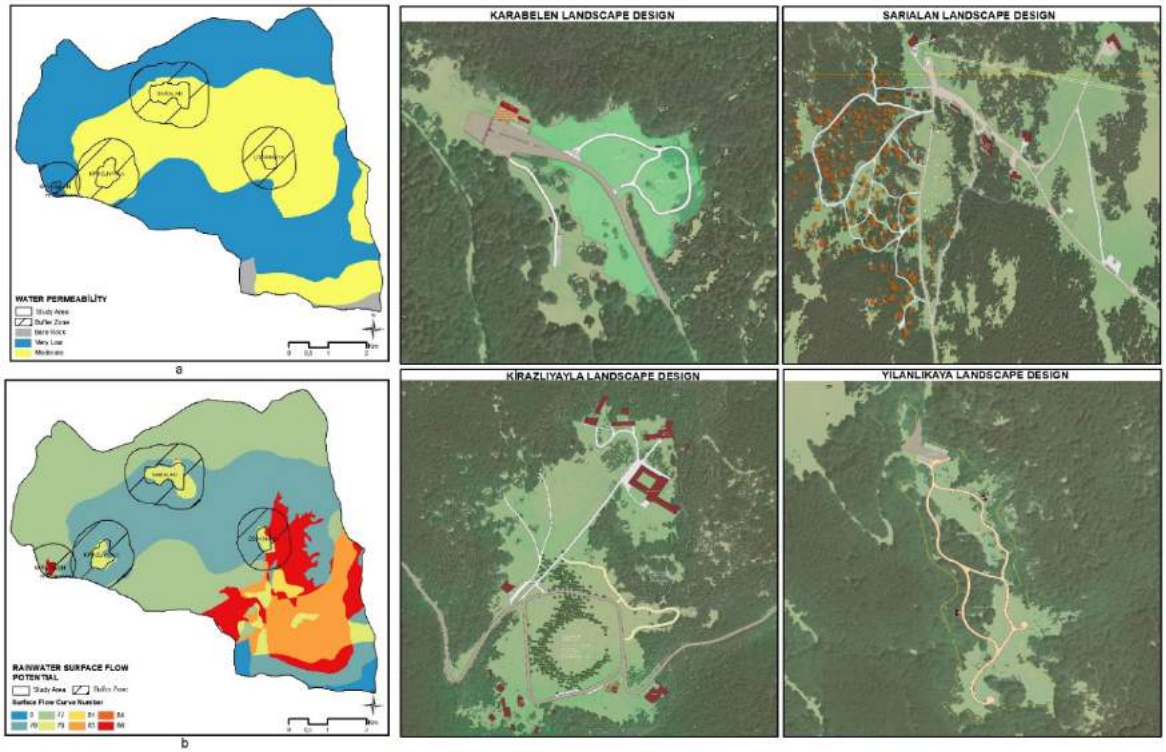
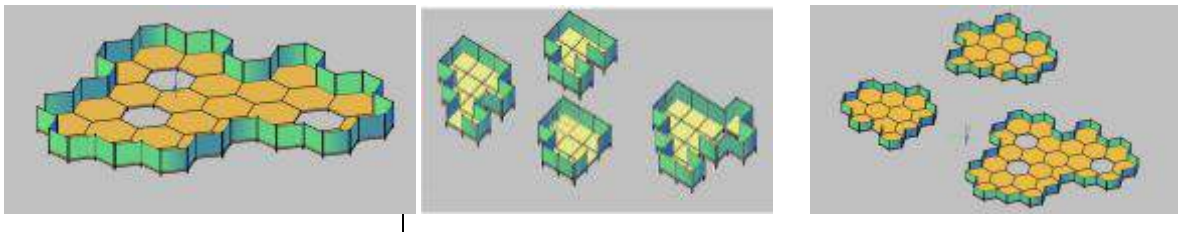


Figure 9 (a) Water permeability (b) Surface Flow Potential (c) Design Areas (Çabuk et al 2011)

The fundamental approach of eliminating the negativities in the current structure is the effort to improve current situation by taking natural factors into account instead of adding new elements in the design of the project area. The characteristics of material used in the design and how they are used are explained in detail below (Çabuk et al 2011).

Too much intervention to the area was avoided. A different understanding is developed in order to create an order in the living spaces with tents in the traditional camping area. As a continuation of this understanding modular systems are designed for the protection of flora and soil surface, and also design does not obstruct surface flow, and the tent areas are protected from rainwater in the living spaces with tents. When these modular systems are not used, they can be removed, so that each area can have enough width within itself and these systems can be adjusted to any desired size. These units are demonstrated in Figure 10, Figure 11 and Figüre 12 (Çabuk et al 2011).



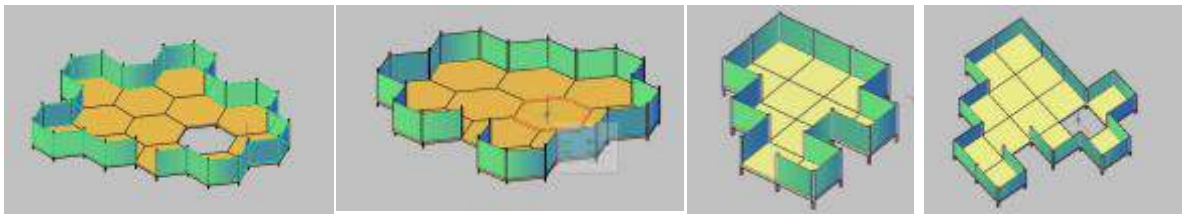


Figure 10 General image of modular systems under the tent (Çabuk et al 2011)

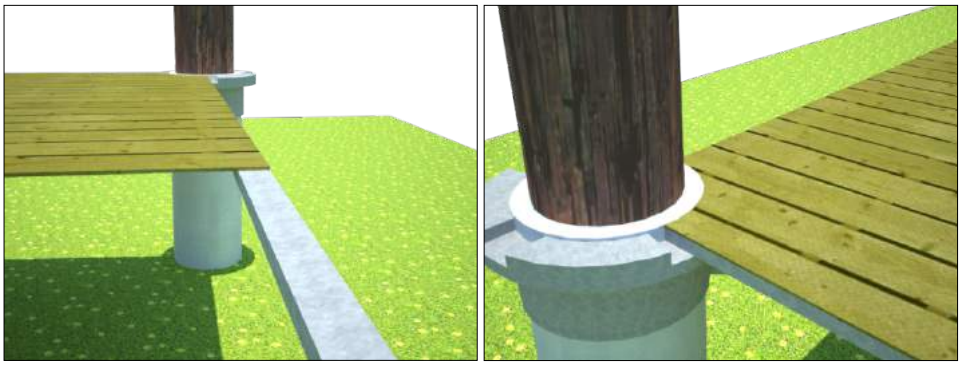


Figure 11 Detailed image of modular systems under the tent (Çabuk et al 2011)

Figure 12 General image of tent floor (Çabuk et al 2011)

Elevated soil surfaces are created for existing rural houses next to each structure where users can easily benefit by sitting and resting (Çabuk et al 2011)

Permeable material is preferred to decrease surface flow and accelerate infiltration. Tracing understanding is developed in all area in order to organize human movement everywhere and minimize human-made damage to the forest. Thanks to this understanding, the users will walk on directions out of completely natural material (for example linear traces that create the perception of a road) instead of artificially constructed road in the forest. Rather than constructing new road in the area, existing ones are utilized for design and they are improved with different material according to the intensity of the use. For example asphalt material is used for 6 m vehicle road; while interlocking cobblestones are used for 5 m roads used by vehicles as well as pedestrians. In addition to that, considering the low level of permeability of material used in parking lots, the suggestion of using grass blocks (recycling material) is developed for this type of areas. At the same time, drainage channels are created on the sides of the road to control the water flow on the roads with same characteristics ()

Various alternatives reflecting the “ecopark” consciousness are provided to increase the temporary settlement quality and make the tourism season more productive. Another common feature found in all these suggestions is that they can be mobile with tires or with structural relations with tires (Figure 13)(Çabuk et al 2011).

Figure 13 General View of Bungalows (Çabuk et al 2011)

4. Conclusion and Discussions

Water function in TÜBİTAK KAMAG Project No. 109G074 Landscape Character Analysis and its Assessment from the Perspective of Tourism/Recreation on Provincial Scale is identified by considering LCA and LCT within the scope of targets and comprehensive strategies, so the higher scales will also be associated with them. This will help taking the best decision for the area in terms of activities to make that place unique when taking low scale decisions.

Design principles developed regarding the water function of the landscape in Ankara Hacıkadın/Payamlıtepe Landscape Design Projects for Recreation Area in the Forest are as follows:

- Landscape protection-improvement-management strategies should be taken into account for the integrity and the continuity of the landscape
- Reflection of necessities especially for management of rain water and soil
- Preparation of structural and plant projects in line with landscape protection-improvement-management strategies
- Considering water budget in plant design

Project area, the inland of forest is a picnic area and thus is an important area for water function. According to Bayazıt (2003) flora will prevent surface flow, facilitate water entry into ground, inhibit raindrops putting pressure on the ground and increase permeability and thus it is a factor that increases infiltration. Gray (1973) has proven that no matter what the hydrological ground group, flora increases infiltration, and the highest infiltration is on forest ground (Arslan 2008). Strategies to be developed for this area should be taken into account in the design decisions. High scale decisions are considered when identifying design principles within the scope of the Project.

As the Construction Plan and Landscape Design Activities for Uludağ National Park, Sarıalan-Çobankaya-Karabelen-Kirazyayla-Yılanlıkaya Locations will be implemented within the boundaries of national park, the design decisions are taken accordingly. Modular systems suggested for areas with moderate water permeability will prevent the cramming of the soil. Permeable material suggested for pedestrian paths and parking lots will accelerate the leaking which will minimize the surface water flow.

4.1. Technological Assessment

Data inserted in the mentioned methods within the studies should be updated. It is relatively easier to update data with today's technology. For example, the current land use data on soil can be integrated to today's conditions to increase the reliability of the analyses.

4.2. Methodological Assessment

Methods used in the projects are stil in-date however they have some shortcomings.

Analysis of water permeability assesses soil and geological permeability however it does not address the flora. Even though the flora transpires some of the water absorbed from the soil by the roots back to the atmosphere, it prevents the degradation of the ground by protecting it. Lack of flora or an empty ground results in crusting due to rain drops or other factors which degrade the structure of the ground. Crusting takes place by the transfer of very fine material to the pores that are on the surface or very close to the surface. Crusting inhibits leaking (Arslan 2008). Therefore, this factor should not be ignored in water permeability.

Detection of CN value in the surface flow analysis is totally up to the planner and is a result of the interpretation of land soil data. The CN value used in the examined projects were taken from TÜBİTAK KAMAG Project No. 109G074 Landscape Character Analysis and its Assessment from the Perspective of Tourism/Recreation on Provincial Scale from the flora with data detail on a scale of 1:25000. These values can be used in high scale studies, but they need to be more detailed for low scale studies. For example, the CN values used in agricultural lands in the studies ignore the terracing practices that can only be observed in low scales. However, the terracing for plantation increases the leaking (Arslan 2008).

Both methods should be used together while examining the water function of the landscape. Because one parameter ignored by one method is used in the other (ie flora for the analysis of water permeability).

4.3. Temporal and spatial assessment

Water function of the landscape can also be assessed as temporal and spatial (change). Because landscape always changes. The environmental conditions that exist today are the result of incidents that have been ongoing since past. There will be a different landscape in the future ().

It is possible to understand the development of landscape and how it will be in the future by observing how it changed from past until today. So, change should be taken into account when any function of the landscape is examined (Koç ve Şahin 2008).

Acknowledgements

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OTTOMAN FACTORY BUILDINGS AND THE CITY: SITE SELECTION

DIDEM BOYACIOGLU

Abstract

Since there is a strong relationship between the industrial plant and its site, decisions for the selection of the site of the factories have an important impact on the development of the macro-form of the cities. The goal of this study is to explore the factors that affect the site selection decisions of Ottoman industrial buildings through the survey of original documents from Ottoman Archieves. Because of the redundancy and diversity of the original documents related with the industrial buildings located in İstanbul and peripheries, the study is limited within this scope. It is understood that site selection of the Ottoman factory buildings is an important phase that is taken up in detail. It appears to be a complicated process that many factors, such as proximity to water sources, proximity to raw materials, source of power, networks of transportation etc., have to be taken into consideration. Finally, exploring the site selection decisions of Ottoman authorities not only enriches our knowledge about the factories of 19th century but also contributes to our understanding about the development of industry in the city.

Keywords: Ottoman factories, 19th century, site selection

THE POTENTIAL OF TRADITIONAL SOLUTIONS IN SUSTAINING URBAN ENVIRONMENTS THE CASE OF THE NEW CITY TAFILELT IN ALGERIA

IMEN DENCHE, SAMIRA DEBACHE, ANTONIO FEDE

Abstract

The logical implementation of new cities in reference of their cultural and built heritage seems to be in the heart of sustainable urban and local development. The Mozabite community is constantly-since the Middle Ages-found the best ways, how to systematize and transmit their know-how, expertise and traditions of life to the future generations, especially those concerning their social environments and defending nature. This paper aims to study the case of the new city Tafilelt in Algeria, a communautary housing project that is built with a traditional and rational architecture. Thereby, it is qualified as sustainable, ecological, and exemplary city in arid and dry climate. The reorientation of its ancestral urban planning and traditional expertise claimed towards the reduction of conflicts between man and nature, the improvement of the quality of living, the promotion of the primitive values of community assistance and the recovery of Social-cultural life patterns. Nowadays, Tafilelt city is in the current national and international debates about climate change, sustainability in arid zones, and successful Sahara's experiences. This research seeks to highlight a series of logical lessons that can be acquired from the reinterpretation of cultural and built heritage in sustaining urban environments. The participation of tafilelt's citizens and their total implication in all its construction levels was also analyzed and translated into an improved urban space with enhanced. this study relates the past with the future, and heritage values with sustainable urban development. In general, this article gives more importance to the logics, traditional strategies and practices of the inhabitants in the process of implementing a sustainable framework. It purports to illustrate how traditional builders have presented a series of logical solutions, which offered a better living environment, Considering that, the reinterpretation of cultural and built heritage has so much to contribute in order to build sustainable cities.

Keywords:

REBUILDING AN URBAN EMPTY SPACE. THE AREA WHERE THE ERETENIO THEATRE ONCE STOOD NEAR THE RIVER RETRONE IN VICENZA, ITALY

ENRICO PIETROGRANDE, ALESSANDRO DALLA CANEVA

Enrıco Pietrogrande, Associate Professor, **Alessandro Dalla Caneva**, Ph.D.

Department of Civil, Environmental and Architectural Engineering, University of Padua

Abstract

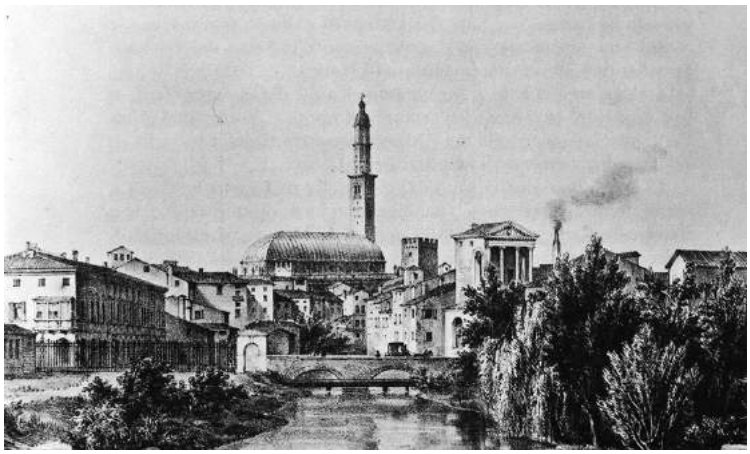
Vicenza is an ancient city located in the Veneto region, not far from Venice, in the north-east corner of Italy. This work specifically refers to the area of the Eretenio theatre on the bank of the River Retrone. The theatre was bombed and destroyed in 1944. Intimately part of the historic center of Vicenza, this abandoned area gradually lost its functional and social identity. The idea of rebuilding that degraded place has long been the object of discussion on the part of local authorities. The Eretenio theatre area is one of the subjects recently investigated by our students at the 'Architectural and Urban Composition 2' course taught on the master's degree in Architectural Engineering at the University of Padua. Students were required to present project hypotheses to reconfigure the lost unity of this symbolic part of the city. The history is considered an indispensable tool to know the deep reasons of the urban structure, which can be used to control the change of functional systems (political, social and economic). The Eretenio theatre area was proposed to our students as an opportunity to suggest new ways to manage the passage from past to future in the shadow of Andrea Palladio's architecture.

Introductıon

The following pages consider a case study themed on the reconstruction of the historic Italian city centre missing buildings due to acts of war and other traumatic events. Indeed, the empty space resulting from the demolition of a building is a deep wound in the historic urban fabric, a fabric composed of relationships that bring the public space to life. Transformations oriented in different directions can be made to this alteration but in the past Italy has often suffered reconstructions completely incompatible with the merits of the valuable historic and artistic context.

In the specific case explained below, in the past, it has been rejected the idea to propose a new building where before the Second World War a monumental building stood. The missing volume has left an interruption in the urban fabric but this tear can be mended. This should be in a similar way when the remedy is being attempted in a historic city in contrast to the incoherent dissonant buildings hurriedly built in the period of economic growth that marked the 1950s and 1960s.

Furthermore, the trend in urban redevelopment particularly in Italy has been towards studying and documenting the urban context in which the transformative reconstruction will take place. This trend considers investigation of the urban facts and their interpretation in the context to be a real and true first phase in the planning project.



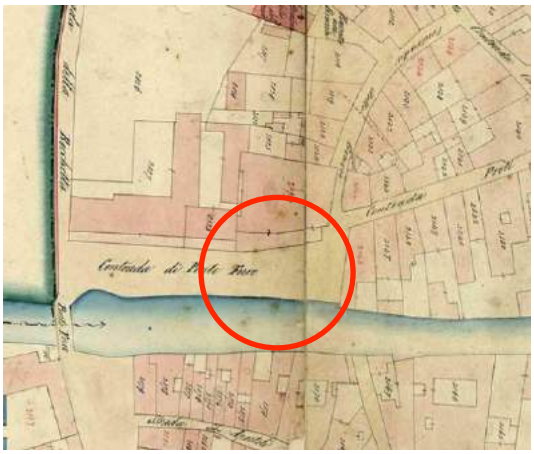


Figure 1. View of the River Retrone and the city of Vicenza with the Basilica designed by Palladio in the background. The Eretenio theatre used to stand to the left of the picture, over the bridge.

Figure 2. Austro-Italian cadastral map showing the position of the Eretenio theatre in Vicenza, 1846.

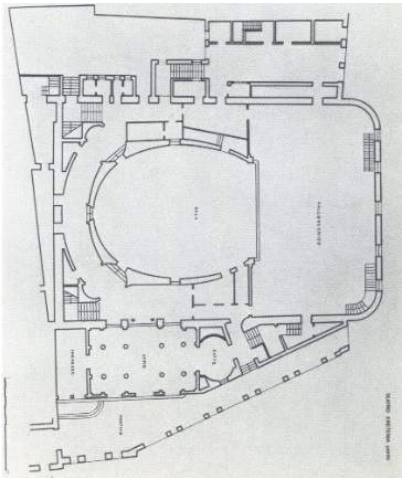
Figure 3. Main entrance to the Eretenio theatre in Vicenza and portico on Viale Eretenio (Ferrini collection, Vicenza). Photograph taken at the beginning of the Twentieth Century.

Figure 4. View inside the Eretenio theatre (Ferrini collection, Vicenza).

The context

The area studied is located inside the Medieval wall of the historic city of Vicenza in the Veneto region of Italy. The area has a strong connection with most important symbols of the city, some of which are still present and that testify to both a thriving past and a lively present. Here runs the River Retrone and passes the Furo bridge, here stands the sixteenth century palace of the Palazzo Civena Trissino whose architect was Andrea Palladio, and here also stood the Eretenio theatre which this article concentrates on (Figures 1 and 2).

The Eretenio theatre was built at the end of the XVIII century and is still rooted in the memories of elderly Vicenza inhabitants (Formenton, 1867; Schiavo, 1978 and 1984). It stood next to the palace designed by Palladio near the River Retrone. The job of completing the project in relationship with the city was assigned to the architect Ottavio Bertotti Scamozzi who was a prestigious exponent of neoclassicism (Olivato, 1975). The east façade faced the river and was divided into two parts whose colonnaded portico followed the line of the road. The shorter part, in line with the Palazzo Civena Trissino, hosted an ample portico which proceeded to the theatre entrance. The other part was inclined to the theatre hall and the stage, and was composed of five arches with surfaces decorated with ashlar work interspersed with rosette medallions portraying famous dramatists. People coming from the city centre found their way to the wide theatre entry portico through the narrow portico flanking the Viale Eretenio (Figure 3) while the entrance hall was preceded by three base steps in case of flooding from the river. Then inside the theatre building, there were three rooms above the portico of the entrance hall. Furthermore, there was the possibility of entertainment in the wide entrance hall where the theatre café was found. The theatre held about 1250 spectators distributed in the stalls and on the 4 orders each composed of 25 boxes (Figures 4 and 5). It had extraordinary acoustics which were so refined that the breath of the actors could be felt.



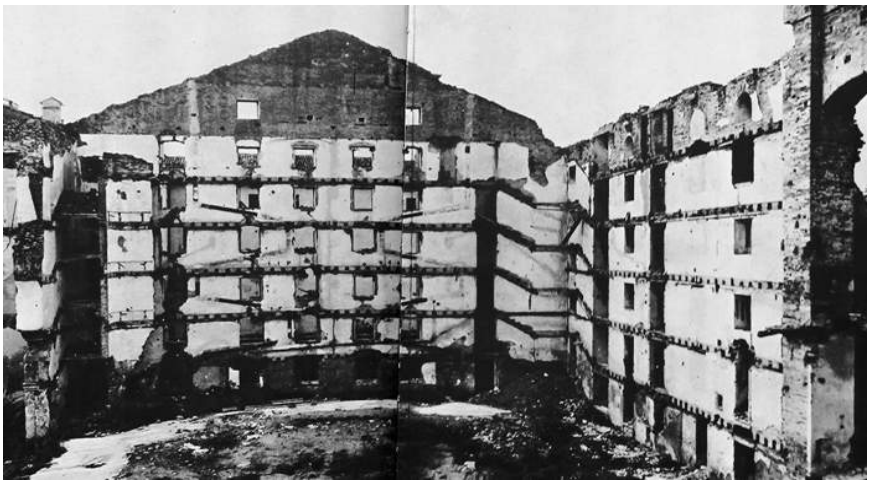
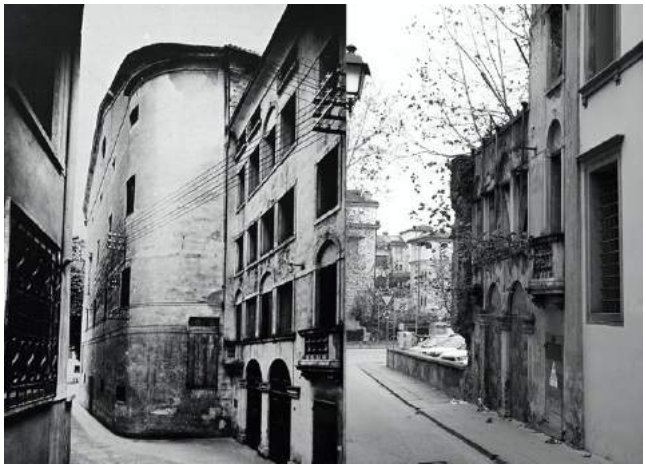


Figure 5. Eretenio theatre, Vicenza. Plan. The two portico sections and the entrance oriented east towards the River Retrone can be seen at the bottom of the drawing. The front onto Via Contrà delle Grazie is on the right. Part of this with the service entrance has been preserved.

Figure 6. View of the ruined Eretenio theatre after its destruction in the Second World War by bombing (2 April 1944).



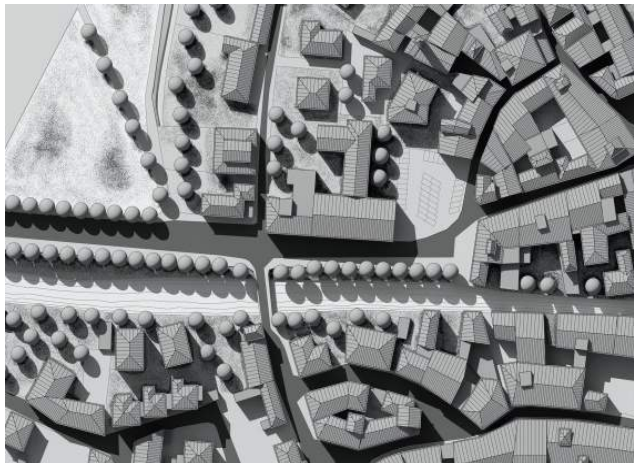


Figure 7. The stage of the Eretenio theatre seen from the downward slope of Via Contrà delle Grazie and showing what remained of the façade after the 1944 bombardment.

Figure 8. Planivolumetric plan, current state. The area in which the theatre was located at the conjunction of Viale Eretenio and Via Contrà delle Grazie is now a public car park, and rounded in form. From the work of the student Diego Cavestro.

The Eretenio Theatre was inaugurated on the 10 July, 1784 and competed with the most famous theatres in Europe throughout the XIX century putting on many works by Rossellini, Bellini, and Donizetti. It was significantly restored around 1850 during which the stage was enlarged over the Via Contrà delle Grazie. Notwithstanding the repeated successes also favoured by the introduction of electric lighting in the hall in 1883, the Eretenio Theatre suffered competition from the *Teatro Verdi* (Cogo, 1949). The shows at the Eretenio Theatre also suffered a progressive decline due to cinemas being introduced in Vicenza. Indeed, the Eretenio Theatre itself became a cinema during the First World War (Bacci, 2014).

Furthermore, the Eretenio Academy was closed in 1936 and the property passed definitively to the Vicenza town council (municipality) in 1940. Initial maintenance was only decided upon in 1943 and was composed of repainting of interior and new gilding of the stuccowork. Then Vicenza suffered heavy aerial bombardment from 1943 with important buildings in the historic centre and surrounding areas being destroyed. On the evening of the 2 April 1944 the Eretenio Theatre was not spared. Only the outer perimeter walls remained (Figures 6 and 7) and were demolished fifteen years ago on the grounds of public safety as they were dangerous. Unfortunately hardly anything is left today. Going along Via Contrà delle Grazie the walls that anticipated the wide stage can be made out and these now delimit the open air car park that was adapted to the area on which the theatre stood. In part walled to consolidate the structure, this short section of outer perimeter wall along Via Contrà delle Grazie includes three semicolumns with Doric capitals and a small portico.

The place is extraordinary due to its environmental and architectural quality. The River Retrone flows slowly along the tree-lined axis of Viale Eretenio and extremely prestigious architecture is aligned along Viale Eretenio such as Palazzo Civena Trissino, which was built in 1540. Using the surface on which the theatre stood as a car park devalues the actual condition of this part of the urban fabric in Vicenza and the memory of the city itself (Figures 8 and 9).

Figure 9. Panorama of the area. From the left, Palazzo Civena Trissino which was designed by Palladio, the empty space caused by the 1944 destruction of the Eretenio theatre which has not been rebuilt, the entrance to Via Contrà delle Grazie and that of Via Carpagnon, and lastly the building situated between Via Carpagnon and the River Retrone. From the work of the students Chiara Duranti e Anna Mason.

The didactic experience

Several proposals for the redevelopment of the area are now presented. They were developed on the Urban and Architectural Composition 2 course at the Department of Civil, Environmental and Architectural Engineering at the University of Padua taught by the authors. The planning projects refer to the degraded area inside the historic centre of Vicenza on which stood the Eretenio theatre and this is an area that needs to find a role and purpose inside the city. It now presents as an empty urban space (Espuelas, 2004), but the monumental bulk of the theatre used to act as an element stitching the urban fabric between the Palazzo Civena Trissino that aligns its portico alongside the River Retrone and the residential built-up area along Via Contrà delle Grazie. In general, the planning choices presented aim to enhance the quality of the urban spaces and the pre-existing artistic history is used as a mechanism to trigger the revitalisation of the urban fabric including from a socio-economic point of view.

The plans presented revolve around the same principle: the restoration of the abandoned, disused, and distorted urban areas, which are points of discontinuity in the cityscape, by formal proposals in continuity with the historic forms inherited from the past. The compositional techniques adopted by the students refer to the building principles inherited from the historic city. So the city is thought of as a place of relationships between the forms. The students were invited to study the effect in the space produced by the forms, an attitude that is a reminder of the experience of the travelling architects of the first few decades of the Twentieth Century when they redesigned urban spaces and their form in their sketch-books using their appreciation of landscape, “in the first few decades of the Twentieth Century our young travellers approached the Tuscan and Umbrian piazzas and the conformation the differing places on the peninsula with a more or less deliberate purely visibilist attitude" (Mangone, 2002). Consequently, the students thought of the project in relation to the pre-existing with which they established functional relationships to construct urban places provoking a “poetic reaction”.

Figures 10 and 11. From the work of the students Massimo Ramazzotto and Valentina Zuecco. Site diagram and view from the River Retrone of the piazza in front of the cylindrical volume that contains a library.

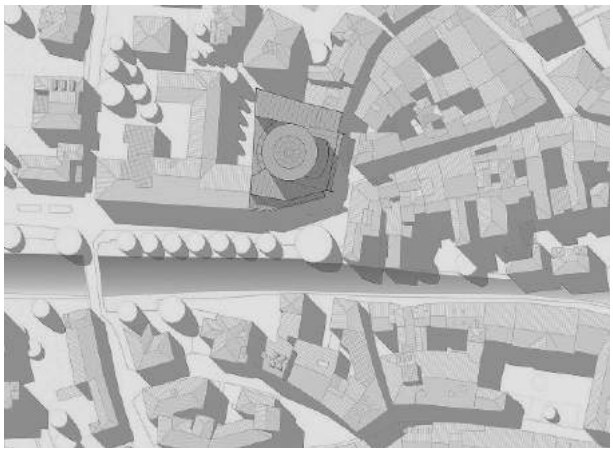
Figures 12 and 13. Planning project for the area where the Eretenio theatre stood. View of the new piazza in front of the library. View of the suspended walkway which runs alongside the course of the River Retrone. From the work of the students Massimo Ramazzotto and Valentina Zuecco.

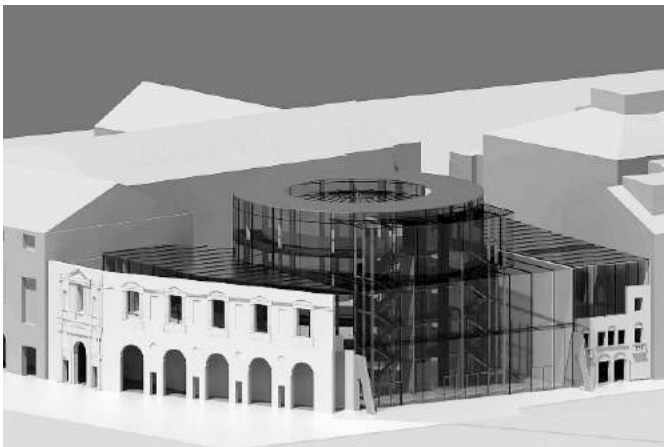
The proposals presented draw inspiration from the character of the great civil architecture. In fact, irrespective of fashion, this seems to generally constitute a significant point of departure in redeeming certain urban contexts that often lack a specific identity.

Next, the theme of cylindrical form plays a central role in the planning hypothesis proposed by the students Massimo Ramazzotto and Valentina Zuecco (Figure 10) The purpose of the body of the cylindrical construction targets the hosting of a library and pays homage to the library in Stockholm by the architect Gunnar Asplund which is also explicit in the function. The idea of the cylindrical form was chosen because of its monumentality and ability to relate to the urban context visually (Figures 11 and 12), and the plan by these students clearly makes a statement of opinion about the issues affecting the development of the area. Along with viewing this as an opportunity to compose a plan within the precise but indispensable limits of the area, the students interpret the planning experience by giving themselves the objective of

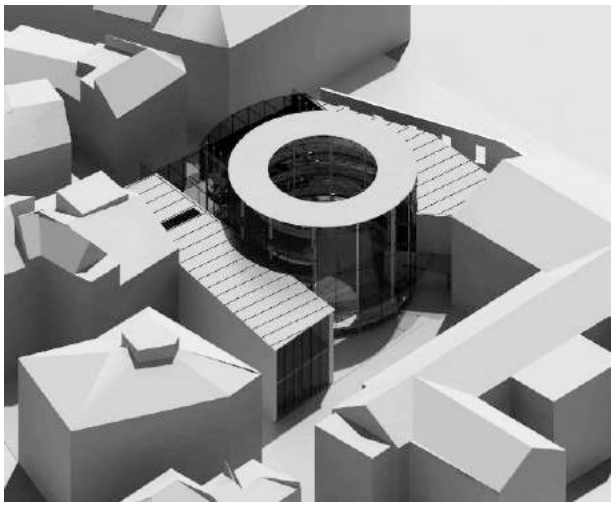
establishing relationships and meaningful connections with the main urban facts in the conviction that this attitude can produce a new role and value inside the city.

Therefore, this plan reconfigures the area by assuming and discovering a completely new form in its renewal. It is clear that the reasons motivating the proposal are the fruit of choices over and above the reasons for a stringent functional programme and are above all dictated by a more general desire to reconfigure the whole structure and layout of the area. The general idea from this point of view is to construct a new urban pole by arranging an L-shaped volume that defines two different spatial environments. The first is the piazza by which the cylindrical bulk of the library will stand. The second is the new piazza of the market opposite the Palazzo Civena Trissino. The arrangement of the volume along the banks of the River Retrone remakes historic examples such as that of the corridor by Giorgio Vasari in Florence and the organisation of the piazza of the central market place in Ljubljana by the architect Jože Plečnik (Figure 13). The two-level volume does not separate the piazzas as they are thought of as porticos or permeable space between the public spaces of the city. The reading rooms that complete the library are located above the portico.





Figures 14 and 15. From the work of the students Maddalena Purgato and Silvia Venturini. Proposal for the construction of a new theatre. Layout of project plan and aerial view from the east.

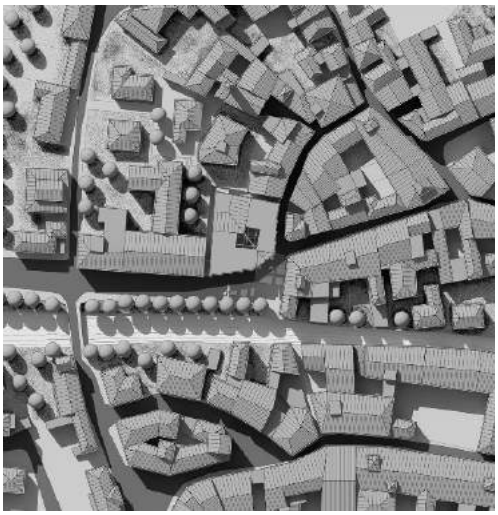


Figures 16 and 17. Aerial view of the glass cylinder that contains the new Eretenio theatre and view from the entrance looking towards the outside. From the work of the students Maddalena Purgato and Silvia Venturini.

The planning idea of students Maddalena Purgato and Silvia Venturini reproposes the building of a new theatre but provide collective spaces permeable to the city. The proposal is still based on a cylindrical form and from a formal point of view the characterising elements are identified by the circular theatre hall around which the volumes dedicated to the collective functions such as a dance hall, a restaurant, and a room for temporary exhibitions are arranged. Continuity on the roadside façade is provided by the philological reconstruction of the old Eretenio theatre façade, by the restoration of the existing façade on the Via Contrà delle Grazie, and by a new volume in glass for the entrance to the foyer which is very permeable to and from the external urban space. The formal elements that characterise the project are clearly identifiable in the urban fabric and they are rigorously aligned with the pre-existing historic buildings (Figure 14). As a result the cylindrical theatre hall shows its monumental presence in the city.

However, the students propose a building that does not exclusively correspond to the purpose or to certain figurative demands but it knows how to become a significant construction that not only satisfies a need but also represents and symbolises it, that is, manifests the idea in its construction. Indeed, Schinkel spoke of architecture as being construction elevated to feeling. In the case presented by these students, the aim of creating a monumental form is obtained by examining examples from history. First and foremost the Globe Theatre in London, then the theatre of the world in Venice designed by Aldo Rossi, and the New Globe Theatre in New York by Norman Foster. All of these examples rework the typological idea of the building with a circular central plan. In fact, the cylindrical form of the theatre hall (Figures 15 and 16) is deliberately differentiated from the other parts of the building, the latter in stone, with a glass skin (Figure 17) so that its form is perceived in a distinct way.

The intention of making the area the location of a congress centre underlies the planning proposal of the students Gianluca Iraci Sareri and Edoardo Rudella. The theme of the congress centre is played out by arranging a volume so that it is aligned on the roadside in line with the existing historic buildings (Figure 18). Then continuity is solved by reproposing the duplication of the architectural part of Palazzo Civena Trissino in the new elevation/façade which is interpreted using language that looks to modernity.



Figures 18 and 19. Proposal to develop a congress centre. Layout of project plan and view from the inside towards the open space delimited by the River Retrone. From the work of the students Gianluca Iraci Sareri e Edoardo Rudella.

Figure 20. View of Viale Eretenio and the entrance to the new congress centre. From the work of the students Gianluca Iraci Sareri e Edoardo Rudella.

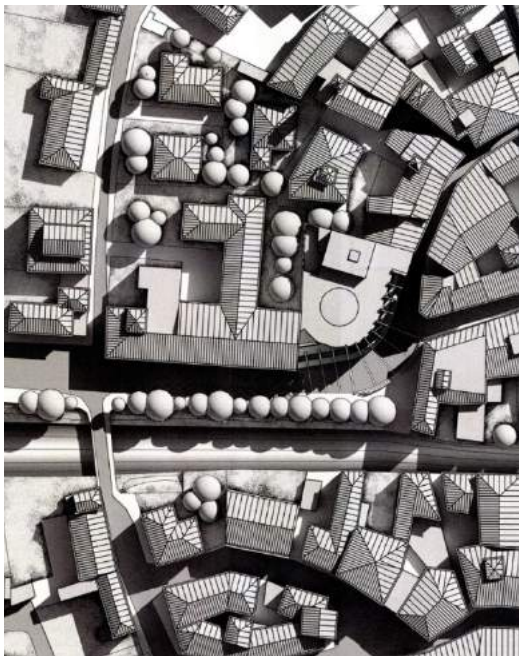
Figure 21. Work of the students Gianluca Iraci Sareri e Edoardo Rudella. Proposal of a new theatre on the site where the historic Eretenio theatre once stood. Façade on Viale Eretenio looking towards the course of the River Retrone. The façade of the sixteenth century Palazzo Civena Trissino appears on the left of the drawing.

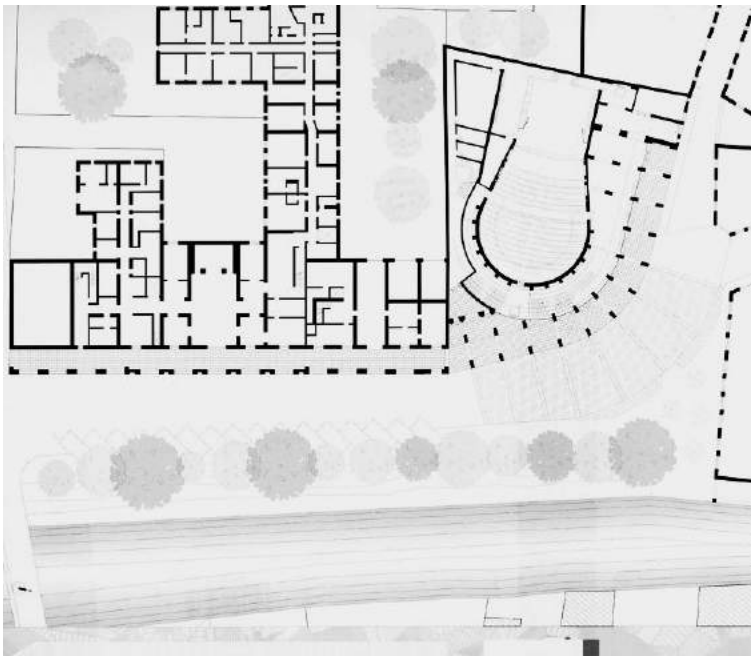
Consequently, the brutalist choice of visible load-bearing reinforced concrete structures is integrated with wooden cladding on those parts with cladding (Figure 19). The compact volume planned occupies the entire perimeter of the development and this contains the congress hall and the triple-height entrance foyer. In fact, the latter is arranged in strict relationship with the external urban space due to the glass façade defining spatial continuity between the inside and outside (Figures 20 and 21).

The same principle of saturating the development area with a compact volume is adopted in the planning proposal made by students Vidale and Zuliani (Figures 22 and 23), who like Purgato and Venturini also provide for the construction of a new theatre. The alignment along the road front is solved by reproposing the portico type theme which once again takes up the rhythm of the façade of Palazzo Civena Trissino (Figure 24). The portico mediates the entrance into the foyer from Viale Eretenio where the original entrance of the Eretenio theatre is to be reconstructed as it was while access for the artists is from Via Contrà delle Grazie, improving the historic façade that survived the 1944 destruction of the old theatre. In addition, the portico and foyer are mediated by using a glass façade to repropose spatial continuity between the inside and outside. Next, the façade on Via Eretenio is solved by repetition of layers of double thickness concrete that confer a monumental appearance to the theatre as the students intend. The layers take up the idea of a succession of trilithic portals again and through which passes an aerial walkway on the first floor that enhances the visual relationships with the city.

Conclusions

The urban voids of the historic city represent an opportunity to regenerate parts of the city by conferring a new role and meaning on them. This is not just rethinking exclusively new functions for the abandoned area but involves creating forms that know how to dialogue with the settled framework of the city by constructing urban spaces in which the community can recognise itself. Moreover, the project is not required to intervene with surprising effects using muscular architecture that only values itself and the personal ambition of the planner.





Figures 22 and 23. Layout of project plan and plan of the draft planning proposal for a new theatre. From the work of the students Lorenzo Vidale and Federico Zuliani.

Figure 24. Façade of the new theatre in continuity with the façade of the Palladian Palazzo Civena Trissino. From the work of the students Lorenzo Vidale and Federico Zuliani.

It is more the case that the architecture needs to fit into the context discretely by interpreting the rules in the settlement, the character of the place, and its atmosphere. This is achieved by constructing spatial sequences in which volumes are arranged in continuity with the existing ones, respecting the alignments as much on the horizontal as on the vertical plane. There is no need for the forms of the plan to mimic the historic forms of the city. Above all, the form needs to interpret the reasons for the construction of the urban space into which the plan will be inserted.

In particular, the urban gap, the unresolved empty space that Vicenza inherited from war in recent history, makes this Venetian city the ideal place to experiment and verity the construction principles for the compact city. The planning experience of the students represents an attempt at coherent construction in the historic context into which the project will be inserted. Therefore, the city is planned. It is the plan that moves on the level of the form, regulation should not make it rigid since this leads to the renunciation of the planning of the modern city, as history teaches. Today the methods of transformation scenarios show that they do not finish like this. Plans, laws, and regulations are more occupied with thinking of a regulatory system appropriate to the aesthetic needs of architecture. So the regulations have evolved in such a way as to establish quantity without providing information on the form of places. Architecture has consequently been uprooted from the role it fulfils, that is, giving form to the city through a clear formal idea. Laws and regulations have been issued in progressively abstract terms that have defined methods and construction that no longer concern the physicality of the city. Urban regeneration plans can become a valid instrument in constructing the urban form in the moment in which they consider architecture to be an instrument for the quality of the space in its role as a discipline that makes volumes available in space by designing the relationships between the physical forms. In conclusion, this is the point of view from which the students have examined the planning experiences they developed and presented.

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SMART URBAN PUBLIC SPACES - TOWARDS A BETTER CITY LIFE

AHMED RADWAN, AHMED A.ELGHANY, MOHAMED

AHMED HONSEY RADWAN, Associate Professor of Architecture & Urban Design, Faculty of Fine Arts Helwan University,Cairo Egypt.

AHMED ABDEL GHANEY MORSİ, Associate Professor of Architecture & Urban Design, Faculty of Fine Arts Helwan University,Cairo Egypt.

MOHAMED MAHMOUD FARİD, Assitant Professor of Architecture, Faculty of Fine Arts Helwan University,Cairo Egypt.

Abstract

Smart cities as a concept have been widely used in the past decades on various levels, many types of research have been talking about how our cities will look in the near future with the various applications of smart technologies, in different fields and areas related to the city. One of these areas is the urban public spaces of our cities, and how they will look when applying smartness on them. Smart urban public Spaces are spaces that use technology to assist and help the usage of urban public spaces, while Smart urban public spaces are supposed to meet today's trends of technology and architecture, It also affects the social, cultural, economic and ecological level of the community. Smart Urban Public spaces have experienced a change in their meaning & Function in the age of technological interconnectedness. Due to the development of smart and networked technologies and services, new opportunities have become available for city dwellers. This continuous evaluation can serve as a basis for the further development of the smart networking of public spaces, to meet the needs of the city dwellers and to increase the attractiveness of such urban public spaces. The objective of the smart digital networking of public spaces is not only the improvement of the accessibility, utilization or aesthetics of such spaces but also help in better understanding of the behavior of the city dwellers, especially In important megacities like Cairo where the application of new technologies is demonstrated by means of improved urban mobility structures, increased energy efficiency of buildings and local pollution emission reductions, in addition to social connectivity and networking.The Research is an attempt to answer some questions, how Smart and innovative technologies can make urban public spaces better, and how these smart Urban public spaces can improve people lives in their cities accordingly.The research methodology applied in this paper will be through making a literature Review ,analysis of smart Urban public space concepts, technologies applied, benefits of applications and various challenges. The paper will explore also some global Case studies of smart urban public spaces, then concludes by examining the opportunities of application in Cairo, as a megacity, whether on the level of Current urban public spaces or future urban public spaces.

Keywords: smart cities,urban public spaces,smart urban spaces.

Introduction

As Per United Nations, World Urbanization Trends, 2014, Today, 54% of the world's population lives in cities. This figure is expected to reach 66 % by 2050. 80% of Europe is expected to be urbanized by then and the Americas are expected to have reached an even higher level of urbanization. Against this

backdrop of rapid urbanization, Smart Cities must continue to perform and engage with citizens. They need to be safe, healthy, attractive and resilient whilst offering inhabitants a sense of community and belonging. (United Nations and Department of Economic and Social Affairs, 2014).Current developments in economy, technology, society, climate, demographics and more are pushing cities and communities towards 'Smartness'. A 'Smart City' is based on a strong, highly interconnected and reliable technical infrastructure and communications network that enables new applications and services to cater to the needs of all inhabitants and stakeholders. Traditionally, urban living is associated with a better quality of life and benefits such as better health, higher levels of education and improved access to social, economic and cultural resources and facilities.(Dennis van de Meulenhof, 2015) "However, rapid developments and the changing character of urbanization are making it harder for municipalities to deliver on these promises. If poorly managed, high population density can actually result in decreased quality of life. The growing number of urban residents places more demand for valuable resources such as water, food and fossil fuels. The production of waste, toxins and pollutants is also increasing proportionately. Today, we find ourselves on the brink of a new era of technology-driven urban development, for which digital technologies will be a key enabler. Smart Cities are increasingly changing from a physical network of buildings, roads and streets to a digitally connected eco-system of sensors, processing power and actuators; a 'digital blanket' over the city.(Dennis van de Meulenhof, 2015)

The research objectives:

In order to achieve the highest quality of life in the cities and based on the findings of many researches that the high quality of life in cities and then urban spaces reflected positively on the sense of belonging to the community and raise the level of productivity for citizens. This research aims at clarifying the relationship between the quality of urban spaces, smart solutions and advanced technology, in an attempt to analyze the correlation between smart solutions and quality of life, and thus reach a road map to achieve a good level of quality using smart solutions. With the projection on the Egyptian situation.

The importance of the resaerch :

The importance of this research stems from the fact that it attempts to link smart solutions, digital technology and quality of life with urban Public spaces. This is very important for all cities in the world, but it is becoming more important for cities in developing countries that suffer from problems in urban spaces such as functional , structural problems & formality in general.

Hypothesis:

Urban Spaces enhance the quality and performance of urban services with information and communication technologies. But just what does 'Smartness' mean and how is it realized, in addition to the question of could smartness add to the quality of our urban public spaces or not.

The research methodology:

The research methodology will rely on the initialization of concepts in order to find the relationship and uncover the link between the urban spaces as a basic stock of cities and smart solutions as an influential variable. And then move on to the value analysis of both variables to reach the relationship between them. Then use the comparative approach and analyze the successful models to determine the implementation criteria for the interventions that can be achieved to convert a traditional or typical urban space to another intelligent.

Hypothesis:

Urban Spaces enhance the quality and performance of urban services with information and communication technologies. But just what does ‘Smartness’ mean and how is it realized, in addition to the question of could smartness add to the quality of our urban public spaces or not.

What is public space

A public space is a place that is generally open and accessible to people. Roads including the pavement, public squares, parks and beaches are typically considered public space. To a limited extent, government buildings which are open to the public, such as public libraries are public spaces, although they tend to have restricted areas and greater limits upon use. Although not considered public space, privately owned buildings or property visible from sidewalks and public thoroughfares may affect the public visual landscape, for example, by outdoor advertising. Recently, the concept of Shared space has been advanced to enhance the experience of pedestrians in public space jointly used by automobiles and other vehicles.(Nadezda Kuzilenkova, 2016) Public space has also become something of a touchstone for critical theory in relation to philosophy, urban geography, visual art, cultural studies, social studies and urban design. The term 'public space' is also often misconstrued to mean other things such as 'gathering place', which is an element of the larger concept of social space. One of the earliest examples of public spaces are commons. For example, no fees or paid tickets are required for entry. Non-government-owned malls are examples of private space with the appearance of being public space. (Nadezda Kuzilenkova, 2016)

Figure 14 a public space is a place that is generally open and accessible to people.

The city need to a public urban space.

Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody. As mentioned by Jane Jacobs, in his book The Death and Life of Great American Cities. Urban spaces affect our physical, psychological, and emotional well-being. becoming aware of how we behave in everyday scenarios when we are alone versus when we are brought together in situations like public installations, street art, festivals, markets etc.(Jane Jacobs, 1961)

Importance of urban public spaces.

Generally speaking, there are specific criteria for determining public space. a public space is a place that is accessible to the public at any time of day, such as parks, beaches, squares, roads, sidewalks, etc. These spaces all serve different functions and can easily just be seen in spatial terms. Yet with the effort of communities, they can be turned into lively, creative spaces that bring people together (yang lisa, 2015). While there are plenty of reasons why public space is important, here they are:

Benefits on human health.

Especially in cities or so-called concrete jungles, public spaces such as parks create a relaxing and inviting atmosphere where people can come and decompress from their stressful daily routines at home and work

either by relaxing or being physically active. Parks can also mitigate air, climate and water pollution that is all around us. Some of the most well-known urban public parks are Central Park in New York City, Stanley Park in Vancouver, and Mount Royal in Montreal, Hyde park in London.(yang lisa, 2015)

Building a sense of community, civic identity and culture.

Public space alone does not build community. Citizens who initiate and participate in community building activities and events create community through place making, or what the Project for Public Spaces calls "an effective process that capitalizes on a local community's assets, inspiration, and potential to improve the quality of people's health, happiness, and well-being." That said, a successful public space can inspire and attract citizens to come together and interact in that space. Compare a park that's spacious, has plenty of seating space and greenery to attract citizens, versus a dirty, garbage ridden environment that has not been invested in or used wisely. While community can really be created anywhere, there needs to be space that is open and accessible so that community projects can take place. (yang lisa, 2015)

Driving economic growth.

As an example Place des Arts Esplanade in Montreal; every year, hundreds of thousands of people come from all over the world to visit the many festivals that take place at the esplanade. Markets, are another reminder that open and shared space drives more traffic and is mutually beneficial for business owners and the local economy through sales, taxes, and increases jobs. In 2002, PPS (Project for Public Spaces) surveyed 800 customers from a variety of indoor and open-air markets around the country. PPS discovered that 60% of market shoppers visited nearby stores on the same day; of those, 60% said that they visited those additional stores only on days that they visit the market.(yang lisa, 2015)

Transforming wasted space.

In the TED talk, "How public spaces make cities work?", Amanda Burden, the former director of the New York City Department of City Planning, provided an example of a degraded waterfront in the neighborhoods of Green point and Williamsburg in Brooklyn. The waterfront was abandoned and nearly impossible to access. Consequently, there was little to no traffic or economic activity. It was basically a waste of space in a beautiful city. A group of architects took on the project and transformed the waterfront into a public space filled with green parks and tree-lined paths. Today the space thrives, and even has an excellent transportation system that runs through it. The lesson drawn from this example is that when you create an inviting space, people will come.(yang lisa, 2015)

City character and enhancing architectural diversity.

Especially in urban environments, where skyscrapers reign and concrete is the main building material of choice, a dash of color, a community attraction or public art installation can make a huge difference in the city. Consider Bryant Park in New York City, an urban park in the middle of Manhattan. It is a convenient space for employees and tourists alike to take a break and hang out among planted flowers and tree-lined paths. Art installations are another example of how public space can liven up the city. For example, the annual Luminothérapie exhibition of interactive art at Places Des Arts in Montreal, From Here Until Now, in Winnipeg, or Yue Minjun's A-Maze-Ing Laughter in Morton Park, Vancouver. These installations not only complement the city's landscape but they encourage people to interact with the art pieces and become a subject of conversation.(yang lisa, 2015)

The Difference Between a 'Public Space' and a 'Common'.

The commons comprise those explicitly or, in some cases, implicitly shared resources in which the community as a whole has an interest. At a minimum, these include the community's streets, sidewalks, and public facilities and additionally, among other things, important scenic vistas, architectural character,

and environmental resources. The most famous city park in Massachusetts is called Boston Common for a reason. These places of shared interest are critically important to the urban environment and must be nurtured, protected and, in many cases, improved. Indeed, we would argue that the commons is what gives a community its identity, and knits us together. (Kaid Benfield, 2013)

The Environmental Commons

In the environmental world, the "commons" generally refers to those tangible things in the natural world in which all of us – not just private parties – may have an interest. On a grand scale, this can include the "global commons," a phrase first introduced to me by my colleague Jacob Scherr: for example, the oceans and their ecosystems; the polar ice caps; the atmosphere; threatened species and internationally significant land and riparian ecosystems. Governance over the global commons is generally established, if at all, through international treaties and conventions, such as CITES, the Convention on International Trade in Endangered Species. (Enforcement of international agreements is often problematic.) Domestically, the environmental commons can include water bodies and related ecosystems such as the Great Lakes or Chesapeake Bay; public lands such as the national parks or, more locally, state and municipal parks; the air we breathe. Pollution is also a form of environmental commons, albeit a negative one. (Kaid Benfield, 2013)

These interests are governed by our complex system of local, state and federal law. Note that, critically, a resource need not be publicly owned to be part of the commons: we all have an interest in the sustained production of well-managed forests and agriculture, for example, even though a vast portion of forestland and farmland may be privately owned.

Indeed, the field of environmental advocacy, in its infancy in the ancient days, arose to protect the environmental commons in situations where government was unable or unwilling to do so. It was, and remains, a direct response to "the tragedy of the commons," in which the interests of individuals, if left unchecked, will deplete or harm resources on which the public at large depends.(Kaid Benfield, 2013)

The Urban Commons

We can relate this bit of environmental philosophy because commons is limited to resources found in the natural world. There is an ecology of sorts that pertains to human settlement, our "people habitat," in ways that are distinct from but often analogous to the ecology of natural habitat. People habitat, for example, fundamentally includes the built environment. And, where the ecology of natural habitat is concerned primarily with the health of ecosystems, the ecology of people habitat is concerned primarily with the health of human communities.

By definition, the commons of people habitat are mostly found in urban areas – cities, towns, and suburbs – where about half the world and over four-fifths of Americans reside. Its most visible manifestation is in our shared public spaces: streets, parks and plazas, libraries, schools, waterways, public transportation, public markets, courthouses, and so on. We could include some privately owned and managed sites of public significance such as places of worship, private museums, sports and cultural venues, and university campuses open to the public.(Kaid Benfield, 2013)

What is smart urban space.

The Smart urban spaces theme looks at the public spaces in cities as the area where many things physically come together, it literally provides space for multiple functions and activities, hosts traffic solutions, enables waste management solutions and ICT infrastructures. While Public space is also important for the perception of safety, atmosphere and quality of life in the city, yet enabling social cohesion and interaction is a must. Public lighting is also a considerable source of energy consumption in

cities that offers also new opportunities for ICT based solutions. The aim of the partners involved in the Smart Urban Spaces field is to develop the roadmap for Smart urban spaces. In this roadmap, the options to realize the desired future scenarios of the cities are explored. A desk study will be done to collect available information on technological options. Experts from industry, knowledge institutes and governments will be invited to workshops to share their views on future possibilities. In the roadmap process these companies will be explicitly invited. Through the networks in the cities the local companies will also be invited to co-create the roadmaps. Focus will be on sustainable technologies, sustainable behavior and sustainable organization in order to realize the ambitions in Smart urban spaces and sustainable energy in the public space. Public urban spaces have experienced a change in meaning in the age of technological interconnectedness. Due to the development of intelligent and networked technologies and services, new opportunities have become available for city dwellers. Through these technologies, important information can be collected and subsequently utilized to test and experiment with urban pilot projects. (Roadmaps for energy report, 2018)

Smart connectivity for public spaces

The cities of the future are faced with the challenge of improving the quality of life for their city dwellers, particularly in the context of increasing urbanization. Public space plays an important role here and has thus become a central topic within urban planning circles.

Objective

The objective of the smart digital networking of public spaces is not only the improvement of the accessibility, utilization or aesthetics of public spaces, but also help better understanding of the behavior of the city dwellers, enabled through collection of dynamic data (pedestrians, mobility behavior, environmental data, etc.). The continuous evaluation can serve as a basis for further development of the smart networking of public spaces, in order to meet the needs of the city dwellers and to increase the attractiveness of public spaces.(Nora D. Fandlr, n.d.)

Major opportunities for new technologies

Public spaces offer new opportunities as innovative platforms for the development of smart technological solutions and services. This presents city dwellers with new opportunities to better understand and actively shape their own urban spaces.(Nora D. Fandlr, n.d.)

Sustainability

With the aid of innovative technologies, smart module systems generate their own energy (mainly through solar) and are characterized by exceptionally high efficiency. Complemented by its socially added value, such interventions can make significant improvements to improving the sustainably of public spaces.(Nora D. Fandlr, n.d.)

Modular offer

Smart and innovative technologies offer multiple potential uses. The modularity of the technologies allow core modules can be coupled with additional modules to adapt and expand according to the needs of the city.(Nora D. Fandlr, n.d.)

Smart Urban Space as a Focus of the application area

The Smart Urban Space application area emphasizes a holistic approach on sustainable solutions for public spaces, integrating various functions to improve quality of life. These challenges include, the active use of public space by citizens as part of their living environment, and encouraging health and vitality (including physical, mental and emotional, and the impact of physical activity, exercise, food and sleep patterns), spatial justice and open use, waste and resource management (including circular systems that contribute

to smart use of resources), and climate resilience (e.g. rain water management and heat stress).(Punit sethi, 2017)

Desired solution spaces include:

Pleasant, multi-functional and safe urban environments for all citizens, preserving the cultural identity of the city.

An attractive and healthy urban environment, improving life expectancy and diminishing differences in life expectancy and quality of life.

Public green spaces and infrastructure that encourage healthy lifestyles and social interaction.

Integrated urban planning of both public and private spaces to contribute to climate resilience.

Rainwater management as an integral part of the system to provide protection from flooding and make water available as a resource.

Interconnected urban and rural areas promoting a strong local economy, with local, circular flows of resources and a high quality of life in cities.

Smart, resilient systems and grids facilitate secure, real-time information, enhancing urban life and increasing the quality of services.

New business models and services based on access to data, with new forms of collaboration and financing.

Facilitate healthy daily living by integrating personal, contextual (physical& socio-cultural environmental) and technological factors to develop/optimize person and value-centered complex health systems.

Healthy outdoor climates (sound, air, wind, etcetera).

Solutions for food production and urban farming in cities to meet the increasing demand as a result of growing awareness of sustainable food styles, food security and the quality of life through green space.(Punit sethi, 2017)

Active Public Space

More than 70% of the EU's citizens live in urban areas: cities and urban areas are centers of economic development, services, knowledge and creativity. The public space is the soul of the City, the place where all its features come together. It is an area of overlap and interconnection, the place where the character and the culture of a Society is materialized. If the public space we inhabit today was basically constructed prior or during the Industrial Revolution, the Information Society is now beginning to bring new principles and technologies with which to rethink the functioning and structure of the streets, avenues, squares and parks. Public space can now be transformed in Active Public Space, fostering people interaction with flows of energy, materials, services and finances to catalyze sustainable economic development, resilience, and high quality of life.Smart Urban Technologies are essentials for the change and consist on a combination of software and hardware that allow real-time data capture, energy generation, storage and reuse, material adaptability, real-time management of time-uses and citizen-space interaction.(Creative Europe Programme EU, 2015)

Figure 15 UN World Urbanization Trends, 2014 APS (Active Public Space) is an EU co-funded project with the aim of developing knowledge on Active Public Space.

Project objectives

Increasing architecture's integrating and innovative role in implementing sustainable urban development. Fostering the exchange of knowledge and best practices in the application of smart urban technologies for the transformation Public Spaces into Active ones. Contributing to bridging the existing skills gaps on smart urban technologies among architects and urban-planners. Enhancing citizen participation in European urban sustainable development processes. Increasing visibility for European architecture and urban spaces, raising public awareness of the role of architecture and urban planning in sustainable urban development.(Creative Europe Programme EU, 2015)

Project activities

Collecting and publishing the state of the art on European active public space. Development of a workshop programme in Barcelona, Prague and Vienna aimed at providing architects and urban-planners with skills on smart urban technologies, sharing knowledge and good practices and experimenting with citizen participation on urban sustainable development processes. Publication of an on-line "How to implement urban smart technologies Guide "Organization of a total of 3 urban installations (Barcelona, Prague and Vienna) where citizen participation will be put at the service of urban sustainable development. Implementation of a final major symposium, in order to present the project's results among selected international representatives (architects and urban planners). Co-production of a touring exhibition on best practices and learned experiences to be held in Barcelona, Prague, Vienna, London and Copenhagen Development of a wide-reaching dissemination programme aimed at increasing the visibility of the role of European architecture and urban planning role in implementing sustainable urban development.(Creative Europe Programme EU, 2015)

The importance of smart urban public spaces

The concept of "smartness" can be seen in several features , such as:

A- User experience feedback:

The study of the movement habits of citizens and the knowledge of their own experience. Especially pedestrian mobility, particularly in the most vulnerable group of people with disabilities. The data collected can help decision makers to improve or change features in the public space to give accessibility to a greater number of users. Also, data collected and provided to users of the public space accessibility can affect the decision to go or not to a certain public space than another.

B- Data accessibility and personalization:

Ideally, people will not be overwhelmed by excessive amounts of information that indeed exist, because they will not be any more undistinguishable receivers of a neutral broadcasting. Contrary, a set of smart software is able to filter information on their behalf. Today, we can already see such applications, that vary in the level of control and may range from amazon's proposals on future buys, or Facebook's proposals on social interaction (friends, groups, events) to the new personalized maps by Google. While some of them may only have an advisory character, others filter information, so that parts of it never reach the user. A future of "ambient intelligence" would suggest that we only get to access pre-selected information, as processed by algorithms customized to our personality. In order to understand some possible effects of this state to our relation with public space, we can see the example of the personalized Google maps. Google promotes its new maps, as offering "a map that's unique to you, always adapting to the task you want to perform right this minute". The way it works is that it only shows highlights, which it assumes to be directly connected to your search. Every click on the map results in a new customization, as it "instantly changes to highlight information that matters most". By using the map, your account is enriched with information of your searches and clicks, so that Google can always build "even more useful maps with recommendations for places you might enjoy", based on your profile.

The difference between urban public space and smart urban public space:

	Urban public space	Smart urban public space
Accessibility/connected	Physically only	Physically and digitally
Visually attractive	yes	Yes, and VR can add to it
Eco-friendly	According to city governance	Mostly eco friendly
Sociable	Yes	Yes
Inclusive	Yes	Yes
Management	governmental, rigid	collaborative, adaptive
Event coordination	regulated, time consuming	Spur of the moment,
User experience feed-back	Manual surveys, infrequent	Digital surveys, in the moment
Interaction with the space	Limited	Vast, evolving

Table 3 showing the difference between Urban public space & Smart Urban Public Space (Surabhi Pancholi, Tan Yigitcanlar and Mirko Guaralda, 2015)

The effect of smartness on urban public spaces

The objective of the smart digital networking of public spaces is not only the improvement of the accessibility, utilization or aesthetics of public spaces, but also help better understand the behavior of the city dwellers, enabled through the collection of dynamic data (pedestrians, mobility behavior, environmental data, etc.). The continuous evaluation can serve as a basis for the further development of the smart networking of public spaces, in order to meet the needs of the city dwellers and to increase the attractiveness of public spaces. With the aid of innovative technologies, smart module systems generate their own energy (mainly through solar) and are characterized by exceptionally high efficiency. Complemented by its socially added value, such interventions can make significant improvements to improving the sustainably of public spaces. (PÉREZ-DELHOYO et al., 2017)

Urban metabolism

Urban metabolism can be used as a tool to monitor material flows and optimize metabolic footprint (resource inputs and waste outputs) to reduce ecological impact, whilst improving livability. Like organisms, different cities have different metabolisms. Analysis from a detailed case study in Perth shows that different parts of a city (walking, transit and automobile urban fabrics) also have different urban metabolisms. Urban metabolism analysis is essential for identifying urban design leverage points that will enable the transformation of Australian cities from some of the world's most resource intensive to sustainable cities. A smart city, therefore, is one that measures material flows, and makes this data widely available as information flows to those people who are able to influence urban outcomes. Urban metabolism can inform evidence-base policies to optimize sustainable urban designs.(Giles Thomson, 2016)

Application tools to make public spaces smarter.

The word smart includes various features as technological and inter-connected, but also sustainable, comfortable, attractive & safe. It is a model of city on which governments are betting to provide a balanced urban development. Aiming at technological innovation to improve management of urban processes and quality of life of citizens, this is a direction followed by some local administrations in Europe that are starting projects, and setting agreements to redraw cities. In relation to the objectives fixed by the EU, supported by pacts and formal commitments, all cities are involved in this transformation process that should turn them in different ways in smart cities (Sansaverino et. al., 2014). Integrating citizen participation as a real part of smart cities policy at all levels of decision and implementation is a main ambition of The European Innovation Partnership on Smart Cities and Communities. It brings together cities, industry and citizens to improve urban life through more sustainable integrated solutions (European Commission, 2015). Rising from practice, the smart city is especially a do strategy, it is a collection of several projects, initiatives and actions, carried out both by public and private organizations. Therefore, as these initiatives are the result of spontaneous choices by different actors, depending on their own interests but also on the specificity of a city, the collections are very heterogeneous. To design a definition by observing one or several case studies means to write a definition describing a specific smart city, and not a standard (Hollands, 2008)

The rapid development of new information and communication technologies (ICTs) promises to transform urban Governance into smart city governance, since these ICTs enable city governments to carry out their tasks more effectively and efficiently (inter alia Walravens, 2012; Hoon et al., 2013). Most of smart cities are based on a very strong digitalization of services for the inhabitants and all other stakeholders. In this matter, smart communities are understood as a collection of interdependent human-cyber-physical systems, where ICT represents the sensing and actuating cyber-infrastructure to estimate the state of human and physical systems and assist in adapting/changing these systems (Nahrstedt et al. 2016).

Wi Fi services in public places can be a feature to attract different and more users to sites leading to a greater use of these spaces. Bringing more people outdoors can make public spaces more alive, deserted places can be revived. More people improve also the safety of these places and can mean diversity, thus contributing to reduce social inequalities and to increase cohesion and tolerance. Since participating in real and virtual spaces can contribute to the public discourse, which in turn can stimulate political action and develop more democracy. At the same time, perhaps none of these will happen, as internet and ICT may prevent existing public life making private activities in public spaces shrink or diminish. The availability of Wi Fi hotspots does not mean necessarily the access to information is greater or the dissemination and diversity of ideas increase (Hampton et. al., 2009).

Wi Fi reaching public spaces is already challenging designers and landscape architects to meet the needs of people living in an increasingly connected world. The Wi Fi hotspots do not require only new signs to inform their existences but for making the use of ICT and mobile devises outdoors more comfortable already new street furniture is being designed. This new furniture could have further influence on the urban landscape. In Paris, six different kinds of intelligent street furniture are being already tested. This includes the Digital Harbor, a kind of open kiosk with a plant covered roof, equipped with swivel seats and tabletops designed for laptop computers. It offers free Wi Fi connection and recharging points for electronic devices. In Belgrade, users of the Tašmajdan Park can recharge the batteries of mobile phones, tablets, and multimedia devices with solar energy. Solar powered benches are planned to be installed in Boston offering similar services.(Costa and Erjavec, 2015)

Application tools examples

Improving urban accessibility

Through an urban accessibility monitoring system based on the urban dynamics analysis, i.e. the study of the movement habits of citizens and the knowledge of their own experience. Specifically, the work is focused on pedestrian mobility, particularly in the most vulnerable group of people with disabilities.

As a result, an integrated system has been designed, which covers the following aspects: first, data collection, i.e. obtaining the citizens' location and experience;

secondly, structuring and storage of the information collected; and finally, the collection, comparison and analysis of the flow of citizens' movement.(PÉREZ-DELHOYO et al., 2017)

The system is based on the automatic reading of citizens' locations. It continuously obtains individual locations through both RFID and GPS technologies. The contents of RFID tags or GPS locations are received by the acquisition devices. In addition, an application for mobile devices has been designed to let users report in real time about their own experience. It is possible to send comments, photos and reports anonymously through it.

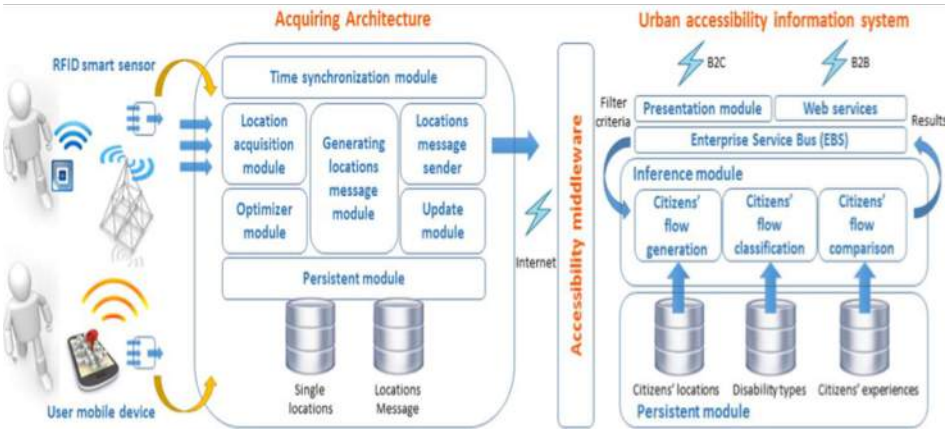
The analyzing architecture implements the urban accessibility information service located in the centralized part of the overall architecture of the system. The urban accessibility information service is supported by the Enterprise Service Bus –ESB – integration infrastructure. The results are shown in two ways: according to the paradigm Business to Customer –B2C –, which allows the interaction of users with the system; and according to the paradigm Business to Business –B2B – that connects consumers with the system using Web services to improve decision-making. Both protocols can define search filters to supervise a specific urban area. (PÉREZ-DELHOYO et al., 2017)

When the system receives an information search, it begins the process of inference consisting of the following steps:

citizens' location information, is structured and completed to build movement flows of citizens.

Citizens' flow classification module 'analyses the generated routes and creates patterns of behavior classified by type of disability. To accomplish this, disability types must have been facilitated by people with disabilities.

These patterns are processed by the 'Citizens' flow comparison module, 'which compares the paths of citizens with and without disabilities. In this last step, the final addition is the information of citizens' experience of the application designed for mobile device.



a method has been designed, based on the urban dynamics analysis, which allows the evaluation of the effective accessibility in urban environments and the control of its maintenance over time systematically.

The proposed system provides support in making decisions to prioritize improvement actions in public space. It also allows the collection, recording and analysis of spatial data and information about the real state of accessibility. These are all accomplished from the urban operation itself, by including mechanisms to give voice to people with disabilities. The obtained data will enable better design for improving pedestrian mobility in cities. (PÉREZ-DELHOYO et al., 2017)

Augmented reality.

While the presence of screens in physical space constitutes one of the most immediately identifiable forms of augmented reality, there are many other ways of uniting atoms and bits, such as the presence of wireless networks and, more generally, the association between spatial sequences and digital resources that is at the origin of ubiquitous computing. The era has passed when the virtual was opposed to the real and seemed to threaten its stability. The link between atoms and bits has become banal, and refers to a range of aims, including civic projects to make useful information available to the public, and commercial and educational motives, without mentioning the contribution that augmented reality makes to the control of complex systems and to scientific research. Through the range of information that is displayed on fixed and mobile screens, from the digital terminals installed by municipal authorities – such as the interactive panels of Urbanflow in Helsinki or LinkNYC in New York – to smartphones that enrich their users' interpretation of their immediate environment, augmented reality has begun to change public space. It offers a whole array of applications related to tourism. For example, a few years ago the town of Cluny in Burgundy, eastern France, trialed screens that allowed visitors walking around the ruins of its abbey church to visualize the Romanesque building as it was in its heyday.(Antoine Picon, 2015)

Augment reality as a method to impose biophilia.

Biophilia is defined as being "the inherent human inclination to affiliate with nature"

some biophilia effects can be achieved with no physical or tangible link to 'nature' or living systems at all. Indirect experiences of 'nature' or living systems, which may include artistic representations of nature, virtual reality and other illusions of nature can also generate biophilic psycho-physiological responses. (Philip Roos et al., 2016)

Augmented-reality terminals showing a reconstitution of the church of Cluny, Cluny, Burgundy, France, 2011 The abbey church of Cluny, one of the largest Romanesque churches ever built, was almost completely destroyed at the beginning of the 19th century. In cooperation with the engineering school Arts et Métiers Paris Tech, the city of Cluny has tested the use of augmented-reality terminals enabling visitors to visualize the church as it was prior to its destruction. (Antoine Picon, 2015)

An experimental LinkNYC connection point or 'Link', New York City, 2014 LinkNYC aims to replace the ageing network of public pay telephones in New York City by 'Links', iconic connection points offering wireless technology. Links will enable free phone calls everywhere in the US. They will provide a touch-screen tablet interface and digital displays for advertising and public service announcements (Antoine Picon, 2015)

İnteractive reality

The extent to which mediated reality has the capacity to change expectations of urban design is hinted at with Pokémon Go, and its layering of an imaginary reality over the 'real' world, and the Wizarding World of Harry Potter (WWoHP) at Universal theme parks in Florida, where After purchasing a wand containing an infrared reflector at the tip, a visitor can wave the wand in a particular motion at predefined spots where concealed infrared triggers and receivers lurk, thereby producing some kind of effect, like causing a book in a shop window to open up and reveal its dark secr ets, a magical umbrella to rain down water, or invisible ink to reveal itself on a scroll (Varnelis, Kazys, 2016. Architecture After the Event Horizon – in Volume #49: Hello World! September). This may or may not be a 'model for the future sentient city', but it shows that if the urge was there, the means exist to layer an otherwise mute or sensorily arid urban

environment with almost any conceivable effect. It becomes possible to imagine that the denizens of such a city could experience a biophilia rush from jungles, densely flowering gardens, or exotic waterfalls as a part of the city, all illusory and generated by computer technology.(Philip Roos et al., 2016) Quick Response (QR) codes are most commonly seen on products and packaging in stores. These can be scanned by smartphones to gain additional information such as a coupon, or even to opt into a contest. San Francisco-based CMG Landscape Architects, in collaboration with MRY Architects, see the interesting graphic quality of QR codes as a possible paving pattern for their project on Lower Sproul Plaza at UC Berkeley, a birthplace of free speech. (Amanda Walter, 2011) The codes would be visible (and scan-able) from upper floors in the surrounding buildings or from Google Earth. In a nod to the fast pace of technology developments, firm owner Willett Moss says, "I like that the technology would become dated, not unlike the mid-century buildings that surround it, but the pattern would still function, simply, as a paving pattern." The content accessed through the codes could provide background information on the site or be used for commercial purposes by the students who are the primary owners of the plaza.

Similarly, QR codes have been applied to the design of building facades like the N building near Tachikawa station in Japan by teradesign and Qosmo, as an alternative to advertising billboards, and MVRDV's design to remodel a disused building in Dijon France with a QR covered exterior. (Amanda Walter, 2011)

In Seoul, Korea, QR codes are at each of the city's bus stops. Users who scan the code have access to real-

time information on services and schedules, even the location of the bus itself. The City of New York's Department of *Figure 16 Buildings now includes QR codes on all of its posted construction and electrical permits—making all the information about the construction, from the site manager's phone number to the contractor's prior violations, available to anyone with a smartphone. (Smart Phones and Public Spaces, 2014)*

Location based technology

A location-based technology, Broadcastr, streams audio content relevant to where the listener is at that moment. Users record, index, listen, and share audio content online directly through their mobile, tablet, or personal computers. Broadcastr CEO and co-founder Andy Hunter says, "Story and place have always been intimately connected. Designers know this better than probably anyone else. By using audio, Broadcastr lets you access information about the world without pulling you out of it—your hands and eyes are free."

For example, the Bryant Park Corporation has contributed stories on Broadcastr about "Manhattan's Town Square." As a user walks through Bryant Park, they can listen to a couple of minutes for the background on the park's famous chairs, about the Thursday night yoga program, or a story about how the park hosted an educational vegetable garden to help New Yorkers grow their own food during World War I.(Amanda Walter, 2011)

Opportunities to make an urban public space smart

Smart crowd control for kyoto station deployment as a case Study:

Deployment of smart urban public spaces is challenging, because it is difficult not only to attach sensors to the spaces but also to involve the visitors in situ; it can be awkward or prohibited to ask them to participate in experiments. Furthermore, it is usually impossible to shut visitors out of the space and occupy it in order to conduct experiments with study participants.

More than 300,000 passengers pass through Kyoto station, the main railway station in Kyoto City, every day. In this station we installed a guidance system that tracks passengers to help their navigation based on their current positions (Nakanishi et al., 2004). Beyond conventional navigation systems, which passively present route information, the system proactively sends instructions to the individuals' mobile phones to control their routes and avoid congestion. The system's primary application is crowd control in emergency situations (Toru Ishida and Satoshi Koizumi, 2008)

Socio economic values of smart Urban Public space

1-Adaptibility = savings

Boarding for a Bridj bus to downtown Boston from Brookline, Massachusetts, 2014 The traditional interpretation of urban transport systems as networks is being challenged by services such as the Boston-area Bridj buses, the routes of which do not follow fixed patterns but adapt to the overall rhythms of the city as well as to customers' demands through data mining and a smartphone interface. The timetables adapt in real time to their users' needs on the basis of millions of data on commuter journeys collected from sites such as Google Earth, Facebook, Foursquare, Twitter and LinkedIn. After entering the desired departure and arrival points in a smartphone app, Bridj users are assigned pick-up and drop-off points. Through contact with data mining practices and making use of the possibilities of interaction with users that are offered by smartphones, the designers of transport systems are thus exploring new directions that lead to solutions which are more flexible than traditional networks.(Antoine Picon, 2015)

2- Real time updates = Faster intervention in case of crisis

It allows mapping to become dynamic, updateable either automatically or on demand, zoomable and/or clickable; in a word, interactive. In the control rooms and neo cybernetics inspired simulation programs of the smart city that are emerging before our very eyes, such maps allow us to keep track, often in real time, of what is happening within technological systems and infrastructures, energy grids, water and sanitation systems, road networks and public transport. Rendering what happens visible, they are linked to control panels and allow operators to intervene in order to regulate or resolve crisis situations.(Antoine Picon, 2015)

Public Works Operations Center, Rock Hill, South Carolina, 2011 In facilities like this one, what happens in urban infrastructure such as the water supply network and water treatment plants can be monitored in real time. The map displayed on the right screen on the wall goes hand in hand with various diagrams and charts that document how systems are running.(Antoine Picon, 2015)

Melbourne as case study of smart urban space.

In 2013, the city of Melbourne in Australia issued ID numbers and email addresses to its trees in order to allow citizens to report threats to trees' health and to guard them from vandalism. linking them to human data networks. This is an example of a digital bridge between humans and non-human nature that links the well-being of both the trees and the people through awareness that is mediated by electronic means

The project began as part of Melbourne's Urban Forest Strategy with the noblest of purposes: Protecting the trees. According to the melbourne governemental website; “Melbourne’s tree population is vast – it have 70,000 council-owned trees, worth around $650 million. Trees are a defining part of Melbourne parks, gardens, green spaces and tree-lined streets contribute enormously to the liveability of the city. But the trees were under threat. More than a decade of drought, severe water restrictions and periods of extreme heat, combined with an ageing tree stock, have put our trees under immense stress and many are now in a state of accelerated decline. As a result, it was expected to lose 27 per cent of current tree population in the next decade and 44 per cent in the next 20 years. Combined with this loss, Melbourne’s urban forest is facing two significant future challenges: climate change and urban growth. City of Melbourne’s Urban Forest Strategy seeks to manage this change and protect against future vulnerability by providing a robust strategic framework for the evolution and longevity of Melbourne's urban forest.”(Melbourne City council Report, 2013).

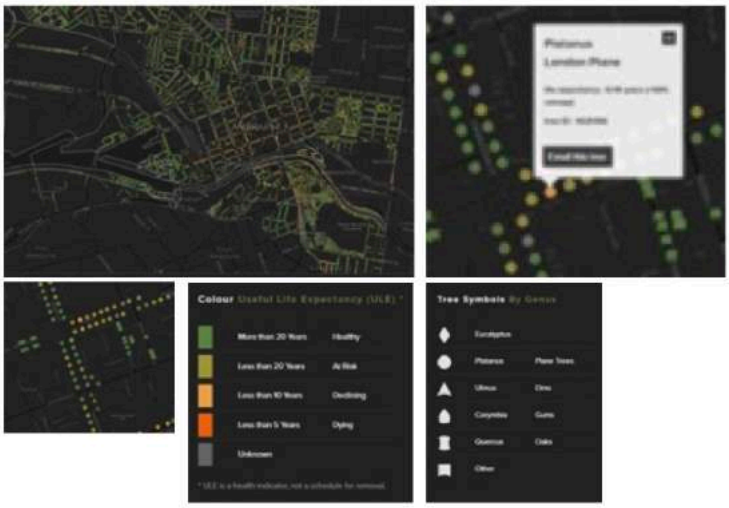


Figure 17 a digital map of the city, through which trees are browsed by location, genus, age expectancy and a unique email address for each tree to report on it the condition of the tree or any vandalisim .

Discussion ‘’ the egyptian situation ‘’ :

There is no doubt that the urban context reflects the character of the society, the environment, and the local culture and identity and the smart technology have the power to redefine the urban space,based on that, the puplic admiration of new technology will have a significant impact in the heavy use of smart solutions through designers. To some developing countries , Egypt as well , using and applying systems is regarded as a strong statement about the country’s economic, social , cultural Aspects. Therefore ,This use if not codifies and used in accordance with the a well organized methodology that knows, what must be done and what should be avoided. the result will be a negative impact on both the culture (may lead to local identity loss and frustration) and the economy (raising energy consumption , light and sound pollution).

For sure there are some positive impacts like : Generating new city landmarks and Reframing existing monumental buildings , it can inhance both individual and mass communication , so it can act as a new style of promoting urban tourism . when the use of smart technology has negative and positive aspects, it lead to the need of the an approach to evaluate the use of this technology.

The researchers were adopted in preparing the evaluation methodology to his personal view of the previous display various forms as well as reviewing of some acadimic publications (Denisse. I,2011)(Martin .B and others) (Source: Peter.D.and Kim.H,2010)(Patrick .T, Eva. H,2012))Hendrik W,2010(.which concluded that there are some citeria can act as main axises of evaluation :

1- The urban space morphology : perciptibility, close distance effects, and long distance effects.

2- The smart intervention :which include the size and value , location and its form . the type , level and color of light , the level of abstraction , and the information included and the way of interaction .

3- Technology: the level of technology “ high,medium , low “ .

4- Information: the content and the message included (Data, text , film) and how it is suitable for the stackholders.

5- Interaction: the type (direct \ indirect) , self expression possibilities , and controllability .

These criteria should be studied in conjunction with cultural , economic, physical and social environments and conditions , the order of priorities for the criteria should be defined in accordance with the impact of these environments . in case of urban space of monumental and historical content , the priority should be for the urban space morphology , and in case of commercial or entertainment content the priority should be for information and interation criterions

Conclusion

It is well evident that Smart urban public spaces is the normal growth for any Urban public space. The way to apply this “smartness” is vast and cannot be summerized because of how it depends on both new technologies, funding and user adaptibility , in addittion to creating new Guiding Law pretaining to the protection of the data of the end user while giving the best possible service. The ability to collect instantaneous data regarding crises can help prevent the loss of lives or public property by automaticilly involving the emergency services or starting an automated evacuation without the need for a person to call in the crisis.

The fast adaptibility of the smart systems is yet to be fully developed , and the new non traditional networking such as Bridj bus traffic wise , is expected to help in lessing the carbon foot print and also will be more efficient and money worthy to the end user.

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ASSESSING SOCIAL SUSTAINABILITY IN INFORMAL SETTLEMENT

SHERINE ALY, ASMAA NAGAH

Prof Sherine Aly, Professor of Urban Design in Architectural Engineering and Environmental Design, Arab Academy for Science and Technology, Alexandria, Egypt.

Arch Asmaa Nagah, Architect, Bachelor degree in Architectural Engineering and Environmental Design from the Arab Academy for Science and Technology, Alexandria, Egypt.

Abstract

Currently, almost a billion people live in informal settlements. The majority of them exist in the developing world countries. Informal Settlements can be seen as a series of small islands isolated from one another by strong physical barriers as highways, flyovers, parking lots and vacant lands. They are self-grown and not influenced by plans or land use regulations and therefore, they look very similar to old districts which are known for their narrow streets holding one social class and their residents have sense of belonging to the place, not to mention that the social factors of these areas are correlated to the special structure of the street networks, therefore networks were described as cohesive.

These communities have advantages and disadvantages where some of the advantages are the random planning of these communities that led to their cohesion; as they are characterized by their very near streets and houses which resulted in this social cohesion in this community. On the other hand, some of the disadvantages are that the majority of planners want to pull them down to rebuild them rather than upgrading them, even though these communities have very noticeable points of strengths. To add to the disadvantages, these communities are categorized as illegal in the heart of cities. The people there live under bad social and financial status, occupation of agricultural lands and deserts have taken place, besides, there is an absence of transportation in the city, misuse of natural resources, increase of crime rate, poor housing planning and infrastructure, informal economy, poverty, social conflicts and child malnutrition. This phenomenon becomes very clear in the Greater Cairo Region.

Social sustainability is a new and different entrance for urban design. It was applied to the majority of informal settlements in developing countries. It is the relationship between the coherence and cohesion among people in a built environment.

The aim of this paper is to assess the principles of social sustainability in informal settlements , Which is one of the most important indicators that ultimately affect communities in the last century.

To achieve this aim, the research is based on three approaches: Induction& Deduction which examines the previous theories on the informal settlements, their types, forms, the reason of existence, and the history of these communities in GCR, and how they contributed in urban and environmental problems. Also highlighting the definition of social sustainability, its principles, and indicators. Another approach is an Analytical one that is responsible for analyzing some relevant examples of informal settlements establishing social sustainability principles and a Check list is deducted for assessing Social Sustainability principles through Surveys, questionnaires and interviews.

Keywords: Social segregation, informal settlement, social cohesion, social sustainability

INTRODUCTION

Cairo is one of the most populated cities in Africa and the Middle East and it's a primary example for the urban space with various centers having the sides of insufficiency in social aspects, as well as the economic one. The rapid urbanization which this country witnesses created small chains of small islands isolated from each other by strong materialistic barriers. At the beginning of urbanization that started after world war 2 that later increased at the time of president Gamal Adbel Nasser, people started to immigrate from rural areas to cities. This resulted in the appearance of settlements which dominated Great Cairo Region , the suburbs of the city and they became segregated communities.

Many reseaches on informal settlement were made, and many of the researchers have mentioned only the problems and the points of weakness of these places. Researchers had their own concepts of the development of these informal setlements through demolishing and rebuilding them. Unfortunately, none of them was capable to speak out about the points of strengths of these areas .This paper discusses the definition, characteristics of informal settlements and social sustainability principles and indicators , examples , leading to an evaluation for an informal settlement in Alexandria .

Problem Definition:

In 2050, total population of Egypt will reach about 140 - 145 million inhabitant which led to the appearance of informal settlements

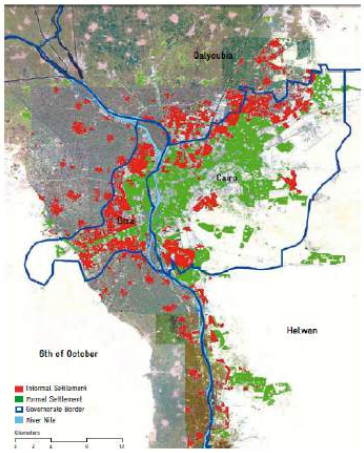


Figure 1: Informal settlements in GRC: they look like a belt of poverty surrounding GCR

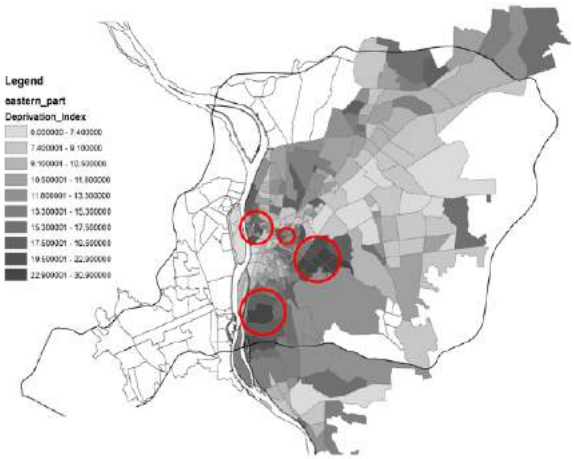


Figure 2: The Deprivation Index2 in Cairo showing that many deprived Areas are located in strategic locations within the city (Source: UNDP Egypt, 2008)

Methodology:

Inductive and deductive methodologies were used to examine the previous theories on the informal settlements, their types, forms, the reason of existence,the history of these communities in GCR, and how they contributed in Urban and environmental problems , as well as highlighting the definition of social sustainability, its principles, and indicators. Then Analytical Methodology was used to Analyze some relevant examples of informal settlements achieved social sustainability principles.Finally the methodology used in the Surveys are, questionnaires and interviews will be conducted with the informal areas' residents along with their surrounding neighborhoods.

DEFINITION OF INFORMAL SETTLEMENTS,SLUM AND UNSAFE AREAS

-INFORMAL SETTLEMENT:

-Suggested by the UN-HABITAT- are: Areas where groups of housing units have been constructed on land that occupants have no legal claim to and occupy illegally. They also may be defined as: Unplanned settlements and areas where housing is not in compliance with the current planning and building regulations.

SLUM AREAS:

Is defined as a heavily populated urban area characterized by substandard housing and squalor. According to the UN-Habitat slum terminology has become the big umbrella for various forms of settlements including squatter settlement ,illegal subdivisions, various building type which range from checks to permanent structures where basic services are limited or do not exist.

UNSAFE AREAS

Are defined as areas where the buildings are built in locations that have a threat to human life, including danger rock slides, flooding..etc. these areas include as well buildings that are constructed with recycled or reused material in one or more of their elements. These buildings are characterized of low resistance to natural disasters and deteriorated buildings

COMPARISON BETWEEN INFORMAL SETTLEMENTS,SLUM AREA,UNSAFE AREA:

Table 1: Comparison between informal settlements, Slum area, and unsafe area

Source: Abdelhalim,2010

The REASONS FOR APPEARANCE & OTHERS ARE CHARACTERISTICS OF INFORMAL SETTLEMENTS:

Point	*Informal settlement*	*Slum areas*	*Un safe areas*
Population density	High density	High density	low density
Water	Inadequate access to water	Inadequate access to water	Lack of water
Housing quality	Poor-medium	Poor	Deteriorated buildings
Security	Insecure residents status	Insecure residents status	Insecure –threat on human life
Inhabitants	Low income	Low income	Very poor
Plot dimensions	Small plots	Small plots	Big plots
streets	Very narrow	Very narrow	Un defined street network
Public participation	No public participation	No public participation	No public participation
Infrastructure	Illegal infrastructure	No infrastructure	No infrastructure

Migration.

Poor urban governance.

Negligence of rural areas.

High-Density Population

The refusal of rural areas 'residents to deal with the government's institutions.

Income Disparity

Social Exclusion

Weak Economy

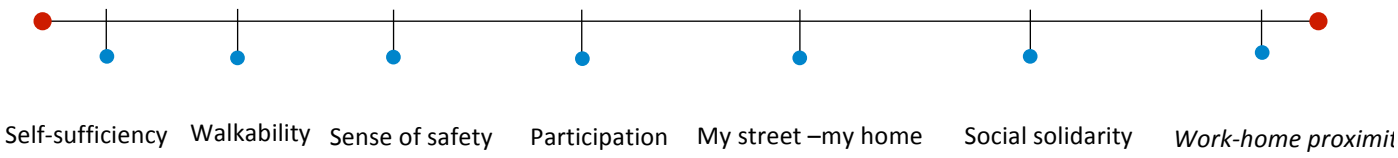
Land Speculation

Lack of basics services

Lack of Job Opportunities

Inadequate and insufficient housing

ADVAVTAGES OF INFORMAL SETTLEMENTS:



TYPOLOGY OF INFORMAL AREAS IN CAIRO:

These settlements are on agricultural lands, former desert state lands in deteriorated historic core and deteriorated urban pockets. The majority of informal settlements structured on agricultural lands ,plays an important role in urbanization, especially those located on the outskirts of the city. As for the former desert state Lands, they were taken over by force.

2-SOCIAL SUSTAINABILITY:

In the next few years, more than half of the inhabitants of earth are expected to live in the city. According to the United Nations Population Fund (UNFPA) in 2006, around 6.6 billion would occupy urban areas. this indicates that cities are going to be crowded, unhealthy and more violent. This will threaten cities that are already struggling with social clashes, environmental deterioration and the collapse of basic services.

The world today has become the center of ongoing social transitions that has to do with globalization and urban growth; consequently, debating social changes in the present has become more important than the past due to the ongoing social issues. This has turned eyes towards social sustainability as an important condition to achieve environmental and economic sustainability, as they can't be established with the absence of social justice.

DEFINITION OF SOCIAL SUSTAINABILITY:

Social sustainability is one aspect of sustainability or sustainable development, it is known to be a process of creating successful areas that empower well-being through understanding what people need from urban areas where they work ,live, and it is the idea that future generations should have the same or a greater access to social resources as the current generation (—inter-generational equity).

Social sustainability combines designing urban space, physical places, social world and infrastructure to support social and cultural lives, social infrastructure besides the public participation systems. Also it combines a number of different ideas on social justice, social needs, encompasses human rights, labor rights usually described through social capital, social cohesion, as well as, social well-being. Social sustainability is a quality of societies and positive condition within communities. It signifies the nature-society relationships, mediated by work, as well as relationships within the society. Finally Socially sustainable communities are equitable, diversed , connected , democratic ,and provides good quality of life.

Goals of Social sustainability:

Equity	**Equitable opportunities and outcomes**
Diversity	Encouragement of diversity and different values
Interconnectedness	Systems and structures in community

Quality of life	Ensuring that the communities basic needs are met
Democracy and public participation	Democratic processes and accountable governance structures

Table2: Goals of Social Sustainability

Source: barron and qauntlett,2002

CHARACTERISTICS OF URBAN SOCIAL SUSTAINABILITY:

The Scottish Executive Authority has defined socially sustainable communities as communities which make people feel safe in their houses and reinforce their feelings of trust, pride and sense of belonging. In addition, job opportunities, education and places that help in raising children are provided for connecting people with the surrounding environment.

Social sustainability is meant to create communities which are filled with life and aimed to make all surroundings attractive for living, work and investments; a work committee led by Mr. Berkeley and Tim Dixon was assigned to understand the importance of social sustainability for urban planning. Berkeley‘s group released an article by Professor Tim Dixon under the title —Putting the **S** word into sustainability: can we be more social?

Professor Dixon saw that people, economics and urban places are as important as environmental issues.

There has been an increasing global interest lately to establish social sustainability among policy makers, academics, governments and different agencies. They have tried constructing houses, planning and upgrading urban areas in an attempt to create practical means in terms of expenses and to measure the quality of life. To achieve this, researches were conducted on social sustainability and their relations with built environment and in accordance, a number of factors have been determined:

- **‘Physical factors’** include decent and affordable housing, access to opportunities, high quality public services, good quality and sustainable public realm with good transportation connections.

- **‘Non-physical factors’** encompass safety, local social networks, social inclusion, spatial integration, cultural heritage, a sense of belonging and identity and wellbeing.

Non –physical factors	*physical factors*
Education and training **social justice: inter- and intra-generational** **participation and local democracy** **health, quality of life and well-being**	• Attractive public realm • local environmental quality and amenity • Accessibility (e.g. to local services and facilities/

social inclusion (and eradication of social exclusion) **social capital** **safety and security** **mixed tenure** **Fair distribution of income** **social order** **social cohesion** **community cohesion (i.e.cohesion between and among different groups)** **social networks** **social interaction** **sense of community and belonging** **employment** **residential stability (Vs. turnover)** **Active community** **organizations** **cultural tradition** **Diversity**	• employment/green space) • Walkable neighborhood: pedestrian-friendly • Decent Housing • Inclusive design

Table3: Urban Social Sustainability

Source: Dempsey & The social dimension of sustainable development: defining urban social sustainability 2011.

PRINCIPLES OF SOCIAL SUSTAINABILITY:

Social sustainability has become a very important element that is usually discussed by the European governments lately. These governments have also tried to specify the criteria and topics inclusive to the term of social sustainability, where it hasn't got one definition due to the diversity of opinions to define this term. Each policy maker and writer has decided to put criteria to the term according to his own studies on this topic, and therefore; these diverse points of views are being displayed in an attempt to get to know social sustainability principles in the local communities.

But whenever any of these researchers comes out with any principle, another researcher starts criticizing him, and says that social sustainability is achieved by different principles. So, each researcher had his own principles which differ from the other, from that time the concept of principles started, and that was on 2001 until this day we are living. This table explains each researcher with his/her idea.

Principles based on Researchers					
Epsd2004	Hans – bockler 2001	Koning ,2001	Sam H.(2002	Gauntlet, E. & Barron, L.(2002)	Vulnerable members
1- Empowering education 2-Providing job opportunities 3-Improving individuals living conditions	1-Life style, job, basic needs, safe and security and public participation	1- Providing services 2- Providing safety and security 3-Cultural diversity	1- Cultural identity 2- Empowerment 3- Accessibility	1-Social Equity 2-Diversity 3- Interconnectedness 4-Quality of life	1-Equity 2- Diversity 3- Interconnectedness 4- Quality of life 5-Democracy 6-public participation
Baines and Morgan & sinner et al (2004)			Cuthill (2009)		
1- basic needs 2- social wellbeing 3-Social capital 4-Equity 5-Social and cultural dynamism			1-Social justice 2-Social /community well being 3-Human scale development 4-Engaged governance		

Table4: Principles based on Researchers

Source: Author

Finally :in the light of the previous explanation for Social Sustainability, Social sustainability is a newly introduced science that has no clear principles. Every era, new scientists put principles for social sustainability. These principles different from one scientist to another; this is primarily due to different cultures existing in each country. Therefore, in this paper, The principles are concluded through adding different tables coming from various studies (table consisting of principles based on the definition ,table based on the dimensions and goals of social sustainability, another table is on the urban social sustainability that describes the different characteristics of urban areas to achieve social sustainability and finally the table composed by the researchers who called for applying social sustainability).

INDICATORS OF SOCIAL SUSTAINABILITY:

In the UK, the Oxford Institute for Sustainable Development (OISD) conducted some researches in 2009 and produced a report entitled Measuring Socially Sustainable Urban Regeneration in Europe. As part of this project, the authors developed a framework and asset of social sustainability indicators for measuring the social dimensions of urban regeneration' (Colantonio & Dixon 2009).

Figure 3: Indicators of Social Sustainability, Source: The Berkeley Group, 2013

Through these indicators and the list of principles for social sustainability, a check list has been concluded to assess urban communities that successfully achieved social sustainability to a certain extent. This is the main aim for this paper. :

ASSESSEMENT OF SOCIAL SUSTAINABILITY (PRINCIPLES + INDICATORS):

Social and cultural life		**Amenities &infrastructure**		**Voice & Influence**	
Principle	*Aspects*	*Principle*	*Aspects*	*Principle*	*Aspects*
Equity	1-social justice 2-Education and training 3- Fair distribution of income 4-labor rights 5-job opportunities 6-provide basic needs 7-public spaces 8-Accessibility(local services and facilities)	Communication & Interconnectedness (Transport links)	1-Accessibility 2-Acess to public transport 3- Availability 4- integration 5- Affordability 6- Comfort 7-Helps providing means of transportation of good conditions	Empowerment and responsibility (Willingness to act)	1-decision-making 2- providing support to 3- giving local people _voice' helping to provide solutions problems 4- Local self-reliance 5- Provision of space for cultural assertion and Spiritual welfare. 6- The willingness to work alongside with each other 7- Ongoing cooperation between people to
Sense of community and belonging (local identity)	1- cultural traditions 2-green spaces and landscape 3-social interaction 4-Public spaces 5-Gathering places and active area 6--social mutual rules 7-Physical and social attributes contribute in creating a positive local	Residential stability	1-satisfaction with home 2-Affordable housing 3-Affordability 4-solidarity 5-Social Exchange and social equality 6- giving social and economic mixed housing 7-decreasing the average renting costs		

	unique identity. Landscapes, history and social events have the same role as well (street celebrations, cultures and traditions etc….)				make small new projects to improve their neighborhood 8- Integration and cohesion encourage solidarity between people
Safe and security **(Feelings of safety)**	1-Active community 2-Providing good lighting to streets 3-Monitoring 4-Low crime levels 5-Daily interaction with others 6-control accessibility to certain buildings and streets 7-open visibility to site 8- the urban design for the area helps creating a more visible environment that enable people of easily seeing each other in the streets 9- feeling secure when they walk in the streets alone in daylight or at night	Walkable neighborhood	1-walkability 2-Encourages pedestrian activity and minimizes environmental degradation 3-provides opportunities for interaction and exchange 4-Density 5-Mixed use 6-Livability 7-Complete Streets help reduce carbon emissions 8-encourage healthy and active lifestyles 9-provide children with opportunities to reach nearby destinations in a safe 10-empower public transport	Public Participation /local democracy (Ability to influence)	1-Social mixing 2-connected and democratic 3-human interaction 4-citizens 5-Community cohesion 6-Organizations 7- provide a good life 8- organized activities between neighbors 9- civic sociability‘ 10- Flexible supervisions and public participation 11- Advocacy to have future residents residing in the community of a council or a person of high position in this community responsible for making decisions and gathering people
Local Facility	1-The availability and diversity of basic public amenities 2-Services that exist are meant for all society classes especially for the youth and children of all ages 3-The availability of public spaces to	Distinctive character	1-The location gives a unique touch to the place through uniting the heights of all buildings 2-Providing wide green areas 3-Providing open public spaces (green fingers, civic squares, playgrounds and variation in streets		

	encourage social integration.			12- Participating to take decisions on the surrounding environment and local facilities
Social Capital (Links with neighbors)	1-Connectivity 2-Safety 3-Character 4-Diversity 5-Shared Values 6-Trust 7-Social Cohesion 8-God will 9-Reciprocity 10-bonding Networks 11-Bridging Networks 12-Group membership 13-Civic engagement 14-Social Networks 15-Work and projects that are built in the same neighborhood helps in the presence of social relations and strengthens weak social bonds which are commonly known as latent neighborliness or collective efficacy	Local Environmental Quality and amenity (Community Space)	1-Community facilities 2-Open spaces facilities 3-provision of community space 4-Those providing physical and mental care and development, such as health services, nursing homes, childcare and pre-schools 5-Open space amenities provide opportunities for recreational activities, ecological and environmental preservation 6- Providing residents with community facilities in this neighborhood/community. 7-Providing facilities especially for young children of different ages, and spaces for people to socialize	
Health ,Quality of life (wellbein	1-preventing, and controlling disease, injury and disability 2-housing quality 3-Providing facilities and health care 4-Balance between work and leisure time 5-Socioeconomic support 6-complete physical,	Street layout	1-Designing streets that encourage social interaction between people where these streets are highly permeable 2-The location of buildings and designing of streets make it easy for people to find them 3-Organizing a network of streets and determining the routes by making special routes for pavements, bicycles and car	

g)	mental, and social well-being 7 -Street design and layout to maximize seasonal 8-opportunities for solar efficiency and prevailing 9- The residents' are satisfaction and comfort with life and with the local area they live in.		lanes 4-Different streets' widths to suit the different activities held in them Making people more friendly
Diversity	1-encourages social interaction 2-tolerance, 3-cooperation 4-engagement in society between jobs.	Inclusive Design (Adaptable Design)	1- Equitable use 2- Flexibility in use 3- Simple and institutive use 4- Durable &adaptable 5- Public spaces that can be adapted for different uses. 6- Flexible and adaptable external spaces 7- Flexible and adaptable housing 8- Flexible use of lands and buildings 9- Flexible and adaptable community bases and buildings (eg temporary, multi-use buildings).
		Attractive public realm	1-Historical &local context 2-Flexibility 3-Adaptability 4-Adaptable design 5-Local identity

Table5: Checklist of Social sustainability

Source Authour

3-Examples:

Medline ,Colombia; Kidbrook settlement; SYDHAVNEN/SLUSEHOLMEN COPENHAGEN:

This part explains 3 examples of infromal Settlements housing is not in compliance with the current planning and building regulations , and the main aim for each example is to achieve social sustainability , The prvious checklist is used assess social sustainability in each example.

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issues	**Medline ,Colombia**	**Kidbrook settlement England**	**SYDHAVNEN/SLUSEHOLMEN COPENHAGEN**
location	Brazil, the Latin American 	South east London,  England	 Copenhagen, Denmark
<u>Problem definition</u>	-Medellín is a violent city in a country known for long-term, violent conflicts - high levels of exclusion and inequality	-Bad design and an enclosed inward-facing layout isolated it from neighbouring areas -high levels of violence and crime	The neighborhood suffers from socially isolated residents with a high rate of unemployment and drug abuse.
<u>geographically</u>	 <u>on Hills</u>	 <u>Isolated and suburbs</u>	 <u>Inside harbors ,and manufacturing area</u>
<u>Type of development</u>	<u>Redevelopment</u>	<u>Redevelopment & Renovation</u>	<u>Renovation</u>
<u>Characteristics of Urban transformation in informal districts to achieve social sustainability</u>	1-metrocable 2-imagineries workshops 3- Library parks 4- Small business support 5- Workshop& Activities 6- Public spaces 7- Housing	1-local social events 2-safety 3-a mixed communities 4-halton court-local youth-toddler groups 5-locally driven and locally responsive 6-green fingers	1-eductionalfacillities 2-green and recreational spaces 3-mozarts square 4-transport modes 5-mixed land use 6-temporary events 7-traffic safety& crime

	8- Urban Identity& local interventions		prevention 8-housing a association & city council

Table6: comparison between examples

Source: Author

When these examples were analyzed, and compared to each other, it was found that each example had its own environment, and each example had a different way to reach social sustainability. For instance, in the first example (Medline, Colombia) new elemensts were added such as metro cable. And this has achived from the (checklists) equity , safe and security , diversity, social capital , and Communication & Interconnectedness (Transport links) . imagineries workshops which helped in Public Participation /local democracy (Ability to influence) , public spaces , such as liberary parks and new schools for children . In addition to the small business support which achieved social capital , also workshops , and festivals which revived their traditions and enhanced Sense of community and belonging (local identity).

Providing them with housing made them feel residentinal stability . when it is analyzed and compared with the Previous principles of the social sustainbility 72% was achived (from table 5,Checklist for social sustainaility) .

The second example, which is Kidbrook settlement that is located in London, in England which used redevelopment and renovation. It mainly added some new elements and demolished some old and deteriorated buildings (and it caused many problems) on the contrary of the first example .Berkeley Group has developed these settelements , and it was the first to speak about social sustainability as a nobel goal to achieve . Therefore it kept their traditions , Sense of community and belonging (local identity). They always felt safe and secured , To the extent that their people can walk by during the night safely , because they are protecting each other.Providing them with public transportation has helped them communicate[Communication & Interconnectedness (Transport links)] . This informal settelement has transformed into mixed community which is full of schools , these schools include different classes of people either poor or rich ones . And this has achieved spreading diversity and cooporation between them . The design of this redevoped settlement is based on the interaction between people in green fingers , public and private spaces . Moreover , walkable routes has achieved different elemens of the table , one of which is that it became an example of [Social Inclusion (Local Integration)] This integration motivated the local inhabitants [Public Participation /local democracy (Ability to influence)] to make some deciogions that has to do with their societies . when it is analyzed and compared with the previous checklists of social sustainbility , 76% of the social sustainbility was achived (from table 5,Checklist for social sustainaility).

Finally the third example is Sydhavnen Copenhagen bounded by, respectively, large traffic arteries, Water fronts, green areas and industry , this settlement is improved to reach social sustainability , and it was provided with educational facilities for the youth to give them a chance to interact together. And there are two departments of the municipal employment center that works with the recruitment. This has achieved equity and job opprtunity . Beside having green spaces has helped them having social meetings [Local Environmental Quality and amenity (Community Space)] .The spread of squares is the main reason behind them celebrating and having festivales and gave the Settlemetn distinctive character . The feeling of security and safety is represented in crime prevention . Housing association and City council has particapated in having social community and prosperity . When it is analyzed and compared with the

previous of checklists of social sustainbility , 57% of the social sustainbility was achived(from table 5, Checklist for social sustainaility).

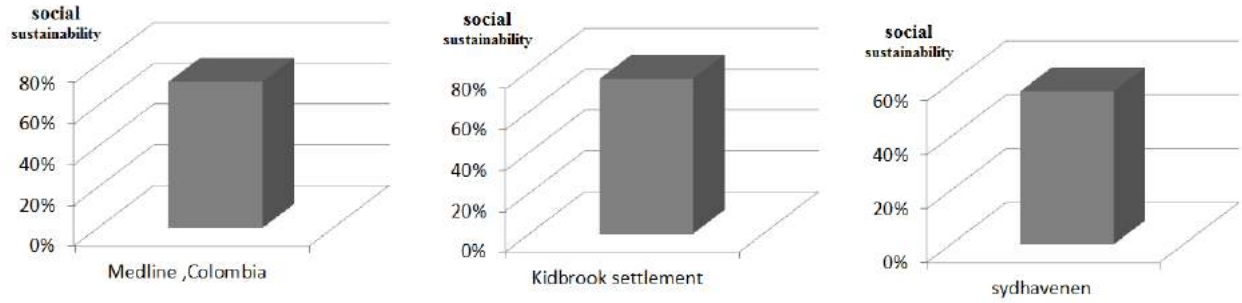


Diagram 1: The previous diagrams explain the percentage of each example, how much it has achieved of social sustainability. Source: Author

4-Case study:

GHEET EL ENAB is located in Alexandria in (Karmouz, district) , it is surrounded by (Mariout Lake) , and the new bus station . It is divided into two parts, in the East side, there is mahmoudiyah canal. The government has built a new settlement in 2016 beside the old settlement (GHEET EL ENAB), they also provided this settlement with many services, and however, local inhabitants refused moving to the new settlement. And that is the reason why social sustainability will be measured in this informal settlement to make sure whether this settlement includes social sustainability or not which helped them feel the sense of belonging

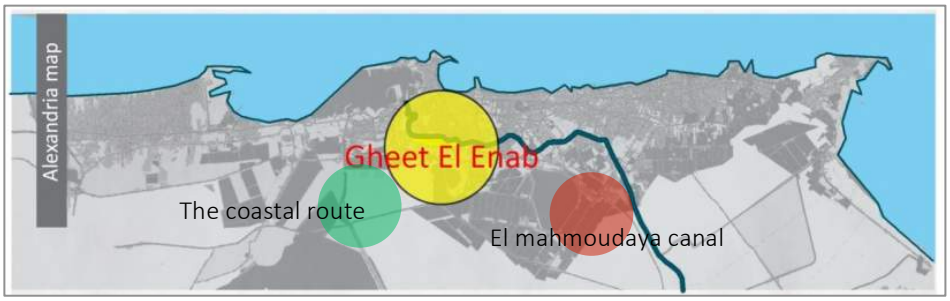
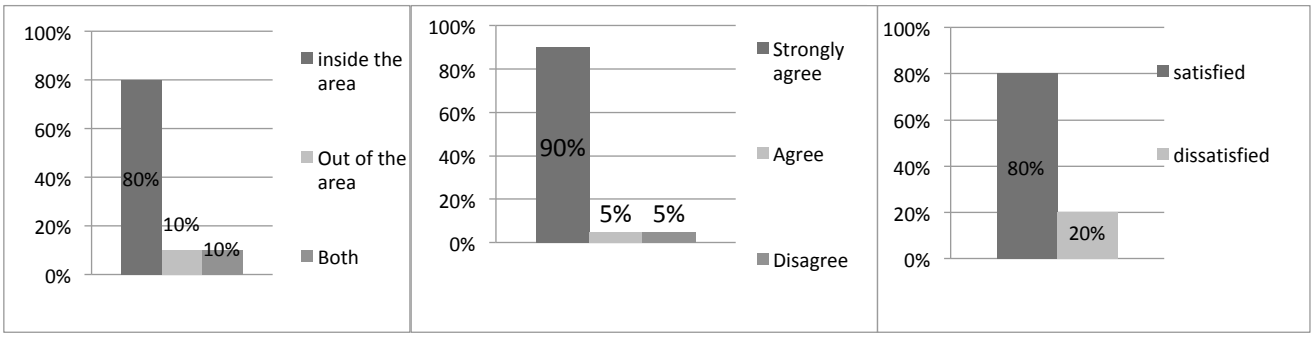


Figure 4 :Map indicating the study area within Alexandria, Egypt. Source:http://www.google maps

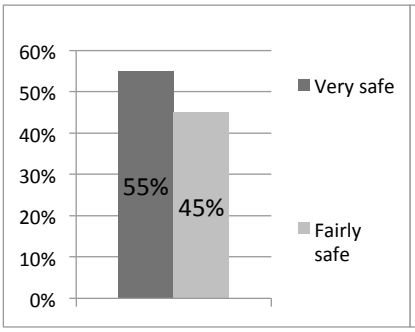
The below statistics are made upon several questionnaires that was distributed on people to measure the percentage of social sustainability in GHEET EL ENAB settlement. the people were chosen randomly , for instance some of them were lawyers , carpenters , contractors , trader/artisan , teachers , housewives , engineers , and even some of them were managers .

1-Workplace **2-sense of community (local idenity)** **3-Health ,Quality of life (wellbeing)**

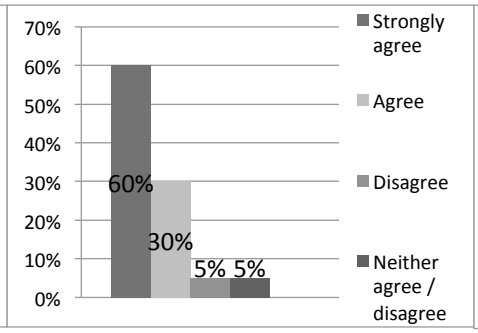


The previous statistics proved That: 55% of the inhabitants of Gheet El Enab confirmed that it is a comfortable, familiar, and secured place. Moreover, 90% of these people feel that they belong to this settlement, because they have inherited their father's and grandfather's traditions and habits . Such as the cases of death, weddings, disasters, feasts, festivals, Ramadan nights and Christmas evenings. In fact they are not planning to leave this settlement at all. 75% think that the settlement is full of services and

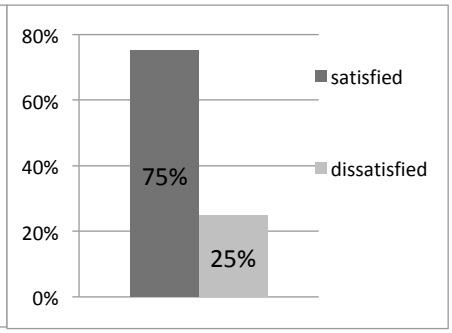
4-Safe and security (Feelings of safety)



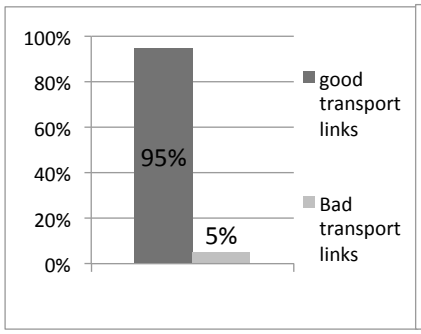
5-Social Capital (Links with neighbors



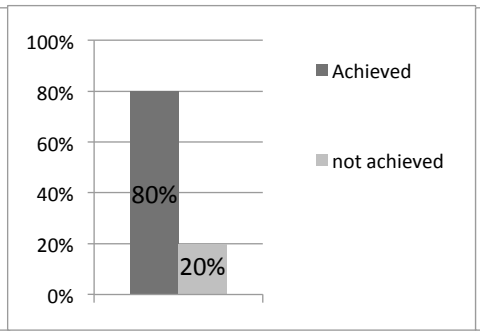
6-Local Facility



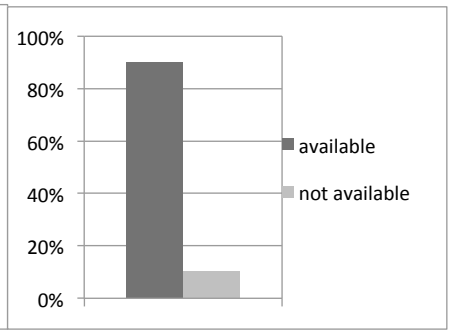
7-Communication & Interconnectedness (Transport links)



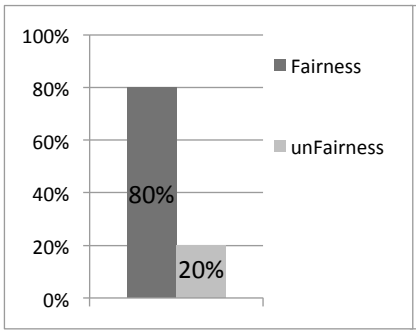
8-Social Inclusion (Local Integration)



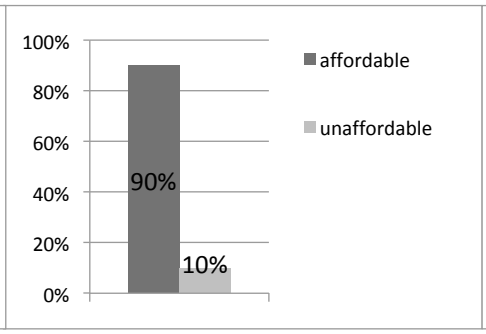
9-Local Environmental Quality and amenity (Community Space)



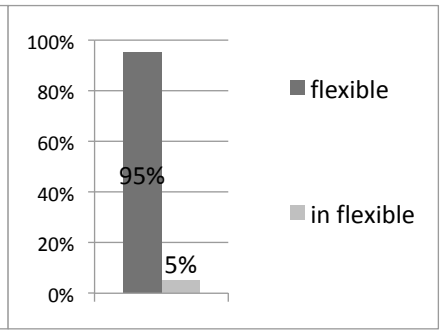
10-Equity



11-Residential stability



12-Inclusive Design (Adaptable Design)



lots of schools, nurseries, hospitals, private clinics, supermarkets, Mosques, and churches. There is a place that lays in front of Mahhmodya canal that holds many religious lessons , it is named (Sedi Ali elsamak), beside this place there is a recruitment office for the Youth . 60% of them has trust in their neighbors and they take advices from each others . Also 95 % of them can see that the settlement has an easy access to public transportations like bus-stations, microbuses, and (TOK TOKS) that facilitates reaching downtowns . Houses are affordable whether it is for rent or ownership, and it cannot be denied that 10 % of them are affected by the new rent because it is much more expensive than the old ones. Finally it is

concluded that this settlement has achieved some of the indicators for social sustainability by 75 %, so it would be better if this place is redeveloped rather than removing it.

5-CONCLUSION:

Today the world is facing so many problems; one of them is the unplanned and distressed neighborhoods, especially in the developing countries. Because the governments and urban policies usually looks at these informal settlements as if it is a (timing bomb) which might explode in their faces, and they always seek destroying it . On the other side, the other countries always work on encouraging people to stick to their life-style and their traditions through the creation of revitalization efforts to improve these settlements. All the urban policies must be able to plan for a sustainable future when it comes to the individual's needs and urban systems.

Focusing on these unplanned- settlements, it is apparent that these are very complicated areas that has the normal disadvantages and advantages which are mostly (neglected) . Such as social relationships, and human ethics that should never be destroyed. That is why scientists and researchers have tried to acknowledge these sustainable relationships inside these urban settlements, through social sustainability which contributes in achieving social justice which might not be in most of the African countries . Social sustainability has been measured in these urban settlements to highlight the positive aspects by some indicators and principles that has been concluded from this paper . These measurements have been applied on some informal settlements In Alexandria (Gheet El Enab) , which the urban policies seek removing it completely , however , their inhabitant never accepted leaving their neighborhood , environment , and families . and the following was concluded :

The sense of belonging that the local inhabitants have for their settlements

Their cooperation, and support in hard times and distress.

The availability of different services and affordable housing

So that is why this local area have achieved many indicators and principals for social sustainability. And the advantages of this place are much more than the disadvantages of this local settlement. Consequently, the planners must reconsider developing this area not destroying it .

t last but not least, the assessing of social sustainability in informal settlement is considered the actual evaluation for the priorities whether to develop or remove.

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IMPLEMENTATION OF INTERACTIVE MEDIA CITY

JING CHEN, XINYUAN CAI

Jing Chen, Ph.D, Huazhong University of Science and Technology,

Xinyuan Cai, Professor, Huazhong University of Science and Technology,

Abstract

Based on relevant existing research at home and abroad, this paper establishes a new object of study, having pioneering exploration and research to the basic theory of media city, and will propose an open research framework and a new concept system. It is the first time to bring city into the scope of media research, and the concept of media city is put forward, that is, "city is media",and the city appears as an intermediary. And from the perspective of interactivity, study and discussinteractive art related to "interactive" and its important links with urban design, urban media space research and audience research. The theory of media analysis and urban design interdisciplinary are applying to carry on the theoretical analysis, and it researches the city media characteristic as the basic theory. In theory, it may create a new paradigm of new media city design and research in our country. This paper discusses how the media city space adapts to public new life-workcommunication way and new-style aesthetic way in the information society.

"Interaction" has developed into today. Under the background of contemporary cultural life, it has been covered by the digital technology brought about by the development of the information era to the new stage. This "interactive" form has more emphasis on the user's experience and the form has also become diversification. With the advent of the digital age, artistic design has shown its emphasis on participation and experience in interaction. this paper summarizes the internal and external features of city media space interactivity and the design thoughts of this kind of city space in terms of the starting points, techniques, connotations of the designs and public feedback. Researches on the technical characteristics of interactivity space constructions employ multimedia technologies mostly; the "integration" and “interactivity" of multimedia technology are its main features. The mass interaction in urban space often needs to be finished with the help of a virtual mediation.

Key words: Media City; interaction; User experience; Digital Technology

1. Interaction between city of medium and space

1.1City of medium

Medium refers to the media or tool that make interactions among things. In the writings of M. McLuhan (1964), "The medium is the message," and all media can have some kind of connections with the human being. The medium is always everywhere and at there. Urban space is of utmost importance as city value and urban planning culture. Our understanding of concept of the City of Medium is various factors related to the urban space and the external image in the information age. Referring to media information carrier

theory, the “City of medium” refers to the intermediary material entity taking the urban space as a carrier, and the city as a carrier loading a large number of cultural symbols and commercial information, which is a carrier that provides all kinds of information. In this sense, the city is the medium and is the material carrier of overall city information.

1.2 Urban Public Space

The urban public space is an essential element for the city composition. The various factors related to the external image of the urban space such as the building surface, street and plaza, leisure facilities, landscape products, visual information and public services are the media space for the city, of which the ground and green land and water surface forms the underground interface of urban space, while buildings, trees and flowers form the side interface of urban space. Urban public space can be divided according to different standards. Detailed division of urban public space can help us to better understand our own living environment. Different kinds of public art work can be created according to the different functions, properties and characteristics of urban public space, which makes public art work be more perfectly integrated into the city itself.

1.3 Interaction among Medium, Urban Space and Human Being

As a form of public art, the main service target of interactive urban public art is human being, and most of them are citizens who have long lived in the city. Interactive urban public art attempts to provide an all-dimensional, three-dimensional sensory experience through interactive technical means in the public space via the modeling language, visual symbols, sound clips, materials, colors, and spatial elements of the works. For interactive urban public art, the main part involved in interaction includes two aspects: the first one is the artist, creator of urban public art work; the second one is the public, that is, the recipient, participant and experiencer of urban public art. These two constitute the subjective existence of experience and consciousness together.

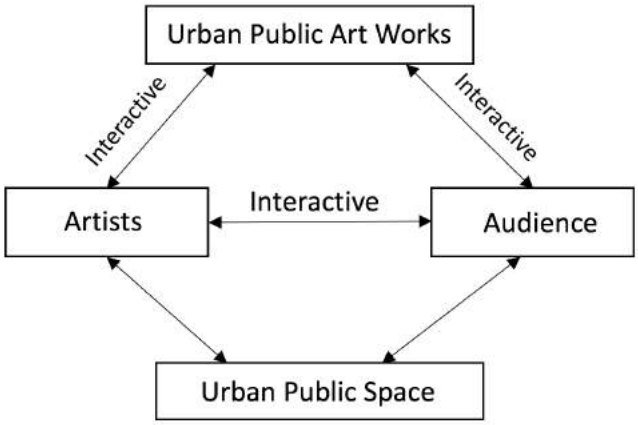

figure 1 . The interactive digram of city public space,
city public art works and city public artistic subject

On the one hand, for the creator of interactive urban public art, who is the former, designer, creator and executor of the entire works. He must take the site, materials used, modeling and technology used, the mood of the audience, the reactions of the general public and the planning and requirements of the municipal department into account. He is also the initiator, leader, and the final responder of the entire interaction. The interactive behavior itself also gives the artist a certain amount of imagination room for expansion, prompting the audience to help him complete the final work and create the occasional effects to detect the public’s views on certain events and social issues.

On the other hand, audience is also another main body of interactive city public art and is a main body with main goal of acceptance and experience. In general, the interaction of audience participating in the urban public art work is their fully perception and experience of the art work in terms of body, mind and behavior. Therefore, the audience's viewing and participation in public art work cannot be understood as a passive process, but should be a process of active participation and evaluation. Taking the art work as the evaluation object, the audience looks at the work with an aesthetic eye and conducts self-analysis and cognition of the work through thinking and behavioral activities, such as association, imagination and perception.

2. Interaction in media city

In accordance with behavior mode, interaction in media city public space can be divided into four types: mechanical interaction, experiential interaction, creative interaction and virtual interaction.These four forms of interaction are not clearly defined and some interactive devices can be considered as several types of them.

2.1 Mechanical interaction

Mechanical interaction in urban public space refers to that people can touch the interactive device from zero distance. Art comes out from the original exhibition frame and integrate into the public life. At the same time, the physical property of this mechanical art itself comes from the original “shelf” and genuinely connect with the public. Meanwhile, this kind of mechanical interaction produced by the physical and physiological nature of the art itself is also the beginning of the interaction "contact" between public art and the public, making designers and artists turn their creative attention to the public.It is not merely the beginning of a visual art, creating more frequent exchanges between public art and the environment and people, so it is a more humanized start.

The famous series of interactive art “Artistic Cattle” originated in Switzerland in 1998 (figure 2), has long been a successful example of City Public Architectonic Art,and been held in large number of countries and regions around the world. When the painted “Art Bulls” arrive in a certain city, local artists, genearl public and citizens will fully mobilize their own imagination,take the cattle as a display platform and paint the design with most representativeness of their own urban culture and hometown characteristics.This art activity is popular in many countries, which has aroused the high social attention and unprecedented enthusiasm and fully mobilized the participation of the public.This interaction does not use any high-tech elements and the work does not change essentially before and after the interaction, so it still belongs to the category of mechanical interaction.

figure 2 . Artistic Cattle

There are numerous similar examples. For example, work created by Japanese artist Ichiro Takeouchi is placed seaside high-rise residential building. With interestingness and bright colors, it make environment lively and vivid and can well guide the participation of children.These early interactive public art works of art can be used for valuable reference for future artists and can be considered as typical cases of mechanical interaction. Meanwhile, on account of reasons such as technical level and social and cultural forms, mechanical interaction has also become the early manifestation of public art interaction. However, the closest combination of this pattern of manifestation with the traditional aesthetic form tends to be widely accepted by the public. In areas with underdeveloped material conditions and science and technology, these kinds of mechanical interactions are not easily adopted by ordinary cities.

2.2 Experiential interaction

Experiential interaction is not limited to getting off the shelf and the public art interaction form that remove labels such no touching and dismantling protection fench, but allow the public to participate in the work, obtain the enjoyment and joy of participating in the art and experience the connotation of public art interaction.This kind of experiential interactive form can be divided into two types: one is common sense, that is, can be achieved without assistance of digital technology;The other one need to be achieved by applying new technical means.

First of all, experiential interaction in common sense is a form after technology improvement through the original means of sculpture modeling such as image interactive installation art created by Barbara Kogg. The artist create and foil the atmosphere of the work by extensively using space and make the audience generate endless associations for space, visual effects, sound and everything that can be perceptible. Then video device can be obtained. Barbara made a comment on his own art: “Art can be defined as the ability to objectify one person’s experience in the world by means of vision, oral transmission, action, and music.”

The works created by the experiential interactive art are used to contain the audience and promote them to convert passive viewing into active feeling in the defined space.This interaction not only requires the audience to see with the eyes, but also to mobilize all senses, including hearing, tactile, smelling, and even taste.In order to activate the audience's feeling desire and disturb their habitual thinking, the factors stimulating the senses in the experiential interactive works are often exaggerated, strengthened or alienated.

In experiential interaction, language communication is also very important communication symbol, the expression way and the processing rule of the interactive space between people and the media city. Language communication can be considered as the carrier of information transmission and communication experience between artists and the public, public and artistic works, works and artists and works and public spaces. The communication of digital public art language oriented by interactive thinking displays the five specialized senses language and psychological language of human being in the works. As the communication medium between the artist's audience and the work with the two-way language as its core, interactive thinking will be presented in the work. The difference between interactive and experiential media cities lies in the important characteristics of traditional public art. The instant participation and feedback of public space of media city is the key factor to meet the demands of the

audience. The analysis of relevant researchers at Harvard Business School in the United States demonstrates that vision proportion of external information through five senses acounts for 83% at maximum. The transmission of interactive information in media city interaction works is also accomplished by visual language to a large extent.

2.3 Creative interaction

Creative interaction refers to the participation of the public in the creation of a work rather than merely application and enjoyment after experiencing the work success.It may seem impossible to involve the general public in the creation. But no matter in current days with constant development of high technology or in the past years, this creative interactive public art works have obtained a strong vitality and began to spread around the world.

Creative public art interaction is bound to become the theme of development of public art in the future.This form of interaction is also the strongest interactive and the highest public participation form among all interaction forms. .Under the background of new technology, the transferring of creation right and transformation of skill value brought by the interactivity of public art is not only a possibility, but also a necessary behavior. This kind of works is not nonlinear narrative, but emphasizes the subjective initiative, participation, bidirectional and feedback of the audience. Unlike traditional public art, the content of a work is no longer completely controlled by the artist himself. Instead, creation right is grasped in the hands of the audience. In the process of interaction, the artist hand over the creative right without protest, so the aesthetic object can also play and share like the fish in the water. One of the typical types of creative interaction is the videography-type public image art and this artistic expression itself exists between the operator and its opposite side. When using artistic means to deduce the relationship between them, some inner complex emotions in spiritual level are often presented through this simple external artistic means such as as Bruce Norman's "video corridor”. This work uses ergonomics as the basis for creation. When the audience enter the work itself, the author has set them as a variable to influence the work so that they have also become a part of the work and the cooperator with installation works in the same time and space. The preinstalled video experience of visitors put the interactivity of the installation works on the agenda. And the interactive multimedia art with more technical color has obviously appeared.

figure 2 . Evoke

Now, even ordinary building walls will not necessarily consist of a single reinforced concrete structure, but appear LED screens or media able to display dynamic images on the walls of indoor and outdoor buildings. Then use the computer and projection display technology to produce interactive art works, turn into a dynamic wall effect and can be more interactive. Evoke authored by American artist Usman HaqUe (see figure 3) is another kind of interactive wall works. The work uses a large projection device up to 80000 lumens to illuminate the outer facade of the entire York Church.With their voices, the citizens "call" the colorful designs from the ground floor of the building, which fly up high to the open sky along with the wall. Only collect the audience's various sounds that this work can be called. A particular voice corresponds to a special color pattern because different people have different frequencies, tones, volume and timbre. Therefore, when many people shout out simultaneously, it produce colorful, dreamy visual effects.And this effect vary in accordance with the acutal situation of the audience on the spot.

2.4 Virtual interaction

Virtual interaction refers to the degree of operability of objects in the virtual environment and the natural degree of feedback from the environment.Virtual interaction can be divided into visual virtual interaction and behavior virtual interaction.Visual virtual interaction refers to the interaction between vision and image, that is, the art works can produce corresponding new images randomly with the changes of sight and action and make audience feel the changes of the works at the same time like in the real world. Behavioral virtual interaction refers to the interaction between behavior and objects in virtual space. For example, the public art works can make different responses in accordance with different instructions of boides of experiencers such as spraying water, changing appearance and color and so on.Virtual interaction realize the interaction between works mainly with the assistance of multimedia, network and digital technology. What the art display tends to be a temporal spatial situation such as the virtual space

of the network and the uncertainty of the spatial structure and it makes the audience's experience process vivid and interesting. As a result, the interactive mechanism of urban public art participation presents a variety of characteristics and styles.

As David Locke, a pioneer in the art engaged in the art of sound and video installation, interpreted “the real nervous system” of his works, he explained thatthese works are "not a control system, but an interactive system," "either party in the system, device and participant is not under control” and “ interactive' and 'reactive' art are different..The changing state of the device is the result of a collaboration between the two elements and the work exists only under combined action.”

Compared with other forms of interaction, art works are relatively less restricted on account of spectacular and techniques of virtual interaction. For experiencers, the feelings of the artist will be more convenient to be experssed and overflow emotion actively felt by experiencer will be expressed more easily in the virtual interaction. For example, artist Charlotte Davis's interactive work Penetration (figure 54 5A7) has adopted a virtual interaction. This work is designed to be an immersive interactive environment, and 3D computer images are the main body of the device. Through this virtual reality device, the audience can realize navigation by relying on a vest full of sensors, which can catch every breath and movement before starting a trip and transfer the information to the system. We all know that respiration provides energy to human body and psychological activity with large consumption can also cause changes in breathing. For example, under mood such as tension, excitement, panic, we will speed up the movement of breathing despite ourselve. Smooth breathing often indicate that the human body is in a calm and relaxed state of mind, so it can be said that the indicators of breathing movement vividly express the state of human body and mind. In Penetration, helmet indicator not only provides visual images, but also creates a potential sense of immersion with all heart in the virtual environment. As visitors change their bodies and minds, images will make corresponding reaction. Because interface technology is a natural process that utilizes intuition of breathers. The viewer's subconscious mind can be connected to the virtual space in multiple ways beyond the joystick or mouse. It also realizes the visualization of the state of the viewer's body and mind.The significance and value of virtual interactive art are created in the process of interaction between virtual works and recipients and obtains endless possibilities.The fictitious and interactive nature of urban public art determines the production and uncertainty of its works, which is the essential change of the status of appreciators in the public art works.It presents an open world to the human being and is considered as a life world constantly flowing to the subjects.

3.Method for interactive design of media urban space

The study of space-building mechanisms helps to understand the principles of the interaction of cities. Urban interactive space construction mechanism mainly reflects the interactive relationship between people and media cities, media cities and environment, and people and environment. The research of technical characteristics of interactive space construction uses multimedia technology. The integration and interaction of multimedia technology are its main features. The public interaction in urban space often requires a virtual intermediary to complete. The user experience and feedback is the main body of interactive design of urban media space.

3.1 User Experience and Feedback

3.1.1 User Experience

User Experience (UX) refers to all the content involved when a user interacts with a product, device, or system. Today we are living in an era that focuses on personalized experiences, which requires designing to treat user as the center and aims to establish a high degree of interaction. Only by establishing an interactive relationship between people and objects, can we accurately obtain user experience feedback to improve the design. Therefore, the establishment of interactive relationship is the basis for realizing the interaction between people, people and objects, and between the objects. The factor of user experience will be studied as the core in the design, and the development trend of design will be more consistent with the development direction of user-friendly interaction.

3.1.2 User Feedback

User Feedback (UF) refers to the system's past behavior results returned to the system to control future behavior. Feedback generally refers to the origin of the sent back to the originating point and has an impact. The scientific concept of feedback is used more in communication science and communication science. In a process, feedback means that the passive party begins to interfere with and influence the active party, affecting the initiative's judgment and behavior. Feedback is the reaction of the controlled process to the control organization. This reaction affects the actual process or result of the system. Through the concept of feedback, we can profoundly understand the functions and dynamic mechanisms of various complex systems and progressively reveal the common links between different forms of physical movement. Feedback plays an important role in cybernetics. Feedback is the basis for the progress of things and an important part of the chain of things. Feedback can be simply divided into the following categories: accepted feedback, self-feedback, and feedback about art.

3.2 The relationship between human-computer interaction technology and urban space

Computer network as a platform for the Exchange Mode, opened the communication mechanism of man-machine conversation. This approach is the core function of human-computer interaction, which can define "interactivity" from two levels: the interaction between people and machines and the online interaction of people through machines.

Human-machine interaction is the interaction between human and machine. Technologies that can communicate with humans are often called interactive technologies. The realization of interactive technology is based on the computer data platform, it is composed of input, output and computer processing three parts: input technology that is, induction technology, machine perception of external changes in the technology, by imitating human vision, hearing, smell, touch, sense and other forms such as camera recognition, speech recognition, odor recognition, touch induction, Natural body Sense recognition technology, the most important way to output is image and sound. With the rapid development of computer real-time CG rendering technology in recent years, the experience of virtual reality can be accomplished by audio-visual simulation, that is, VR technology. At the same time, with the help of biotechnology and new materials other output methods are also in the development of experiments, such as synthetic fragrance, simulated skin tactile, brain waves and external interference, such as nerve, the development of these technologies greatly enhance the reality of VR experience. Computational processing is the core of the entire interaction, consisting of smart chips and implanted coding programs. This technology has grown wildly with the Moore law of the chip, from the initial p-stop logic circuit to single-chip, small, mainframe, PC, and today's ubiquitous mobile intelligent terminals (smartphones, ipads, etc.), the calculation speed is faster and smaller, and programming language from simple logos The development of circuit programming to assembly language, C. Object-oriented High-level Language (OOP) to the graphical programming methods (such as flash, etc.), the artist through these powerful language can create more and more urban space interactive change possibilities.

3.2.1 Interactive Input System

1) How to get the image

In the city public art, regardless of its size, simplified, the image is the most important sensory carrier. We can get the image information through the camera. Camera (Camera) is a video input device is widely used in video conferencing, telemedicine and real-time monitoring and so on, can be applied to the network, with video, voice chat and communication. It is mainly composed of lenses, sensors (Sensor). Its working principle is basically: the scene through the lens (Lens) generated optical images projected onto the image sensor surface, and then converted to electrical signals, after the conversion of AD (Analog-to-digital conversion) into digital image signal, and then sent to the digital signal processing chip (DSP) processing, and then through the USB interface to the computer, The image is visible through the monitor.

In the digital city public Art dog case history, while the audience appreciates and participates in the activity, the camera can judge the target population's number, the behavior or the target's facial specificity, the fingerprint and so on the specific target, and transmits the image result to the processing system to carry on the classification programming and the processing, is one of the most important sources of information obtaining.

2)the way to get action

The way to get action in addition to the transmission of visual images, human movements are also recorded through tactile sensors. In urban public art, the audience is constantly moving in a way that is constantly changing in order to better appreciate the content they are interested in, or to respond to music or lighting stimuli, or other considerations for personal purposes. People get this information through new sensors. Most sensors that read the target distance send some form of energy (light, magnetism, or sound) as a reference signal. This process is very similar to the bats in the air when the prey and the barrier to the ultrasound and judging the position of each other according to reflection. We need different sensors to get different actions, such as the use of virtual reality gloves for the measurement of the human motion. If you want to Simply judge the position of the short distance person can use infrared sensor, ultrasonic sensor and so on. If the need for precise positioning, but also the use of magnetic tracking device. If you need to measure rotation, use a potentiometer. If you need to measure the deflection angle, you can use an electronic compass. The various sensors created by modern technology can meet our various needs.

In the actual operation of the city public art, the physical contact between the human body and the artistic medium is often appeared. We habitually call it "tactile learning" for the technology that studies such physical interfaces. When an audience interacts with a public artwork, the body part (especially the hand) touches the screen or other sensing surface while the signal is received by the sensor and transmitted to the kernel for processing. Some simple and Easy-to-use biography Sensors include sensor resistors, thermistor and capacitance sensor.

In addition to stress, changes in sound, temperature, and light signals can be sensed by the sensor and changed into electrical signals, such as a thermistor determining whether someone is touching the object by detecting an increase or decrease in heat. Photoresistors will change its resistance according to the change of light and determine the intensity and direction of light. As a result of vibration, the change of sound will also affect the sound-sensitive resistor. In the interaction of urban public art, we can take one or some kinds of sensing methods to determine the change of participants ' signals. The most common way is image, touch and sound. such as the 2010 Shanghai World Expo Germany Pavilion Metal Ball, the

use of acoustic sensors, with the crowd shouting voice size, the system of sound loudness and intensity to judge, and output: Accelerate the rotation, swing and constantly transform the image on the sphere screen.

3.2.2 Interactive output system

A complete system output system and input system is also important. Due to special property of urban public art, the artistic image is used to touch readers, thus output system often makes readers enjoy and shock in vision. Let's firstly know about what's the output system of the urban public art. The general form of the marble, bronze, stainless steel and glass fiber reinforced plastics is the sculpture or the midbody of sculpture and architecture in the traditional urban public art. In 1994, in the square of "SFR telecommunication building" in Grande Arche closing to La Defense in Paris New District, the "thumb" of the French sculptor Gaius is magnified to 12m and becomes the urban landmark with Triumphal Arch in Paris. This art is generally considered the important works of the mark. In the roof of a building in University of Oxford, this is a shocking and humorous scene. A shark breaks the roof. The head goes deep into the building, while the huge body is still exposed outside. The output system of the public art shocks people in concept without exception.

However, in the interactive digital urban public art, the situation is changed. The digital art often depends on digital screen display, instead of traditional marble and bronze. Here, the output system probably can be divided into two different types: Firstly, modern framework makes the building façade into the interactive digital content display membrane. Secondly, art is controlled by digit. The artistic appearance—external setting terminal is shown to audiences, including visual and acousto-optic effect.

The first content is easy to be comprehended. With the constant improvement of display technique, screen display has been developed into liquid crystal (LCD) and luminous diode(LED) from early-stage common cathode ray tube(CRT). The development of interface texture forms the different communicating effect of art.

In the second situation, art is controlled by digit, but it doesn't select the display screen as the output system of art. Under the control of sound and light, it is common that external art setting terminal becomes the part to be shown for audiences. The object of any texture and shape can show external contents through the digital control.

In addition to the above-mentioned two situations, there is the combination of them. In other words, appearance of artistic works and screen can't be separated. By taking the induction ball of the Germany Pavilion in Shanghai World Expo—source of power as an example, it is a ball, but it is full of the screen. With the interaction of induction, the screen contents are constantly changing to constitute in a shocking effect.

3.2.3 Interactive treatment: information and programming

A complete digital interactive urban public system also has a core part—communication and treatment, in addition to input and output system. The communication mode often transfers digital signal of result

sensors to the computer CPU or microcontroller and it is operated by rule, which is formulated in line with the effect required by artists. It often needs the complicated procedure design and electric drive system.

1) Communication

In the interactive system, communication generally can be divided into two types: one is the communication between computers and gets involved in various professional protocols. The other one is the other communication between devices. The interactive art applies the communication between devices. The communication between devices has the wide application range, such as video switch, vide mixing, modem, 3D sensor and GPS(Global Position System). In urban digital public art, the protocol similar to equipment is often used. The Synchronous serial communication is a common communication mode between devices. In the wireless field, the micro-controller is very effect in the short-range control. RF(Radio Frequency) and infrared communication are very effective wireless communication mode. Popular modes in infrared communication include remote control, mobile phone and infrared transmission functions of other equipment. Blue Tooth in RF is commonly used. All of these communication technologies indeed change our life.

2) Programming

If communication between devices constitutes in the nerve terminal or blood vessel of the interactive system, the program is the brand or heart to control the interaction of the interactive system. In terms of artists, nothing is more crucial than our brainstorm. Here, program develops a role on realizing the brainstorm of artists and connecting with the “input” and “output” of interactive parties.

4. Conclusion

Today's new media art and technology have infiltrated into all aspects of social life and social culture, which becomes a rapidly developing art form, playing an irreplaceable role in shaping the image of the city and publicizing the city. Buildings based on information technology equipment usually have a transparent and dynamically changing appearances; urban public space is highly open, shared, and has an affinity space, which is in line with the nature of information interaction. The roles of subject and object in the media city space have changed; the “subject-intermediary-subject” aesthetic model has triggered a new interactive space that uses various media as “intermediaries”. The paper starts from the interactivity of media cities, attempts to implement the research on the shaping of urban image by new media arts into practices, and tries to combine the interactive space of cities with the practice of new media arts to provide new methods and ideas for the development of urban public space design.

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ANALYSIS ON THE DEVELOPMENT TREND OF MEDIA ARCHITECTURE UNDER THE BACKGROUND OF INFORMATION AGE

RAN XIAO, JING CHEN

Ran Xiao, Ph.D, Huazhong University of Science and Technology,

Jing Chen, Ph.D, Huazhong University of Science and Technology,

Abstract

The information revolution keeps flourishing, sweeping all walks of life. The architectural design which is closely linked to the work and life of human also undergoes new transformation. Upon the call of information age, the media architecture comes into being, and the emergence of the media architecture arising from the crossed fusion of multiple areas indicates the future of architecture. Media architecture has penetrability, which can represent the relationship among the groups in city, and even among urban histories. The construction of media architecture will also enhance the understating among the countries and the citizens.Media architecture is an important trend of urban development in the future. It will realize the combination of architectural physical space and cultural virtual space, technology and art in the city, and provide the device and communication platform for interactive social activities, being the carrier of "*intelligent city, smart life"*. Based on the definition of media architecture, this paper discusses its characteristics, types, and research status at home and abroad, and based on the social development in China, analyzes the important significance and influence of media architecture on the development of informatization of urban environment and the potential development trend in China .

Keywords

Information Age, Media Architecture, New Media Art, Hyper-surface

1 Definition of Media Architecture

The word "media architecture" first appeared at magazine *a+u* in April 1996. Before that, the concept of *"media architecture"* remained obscure. It lasted until in the 1998 when Stephen Perrella, an American architect, coined the theory *"Hyper-surface"* which combined the virtual information and architecture and combed and analyzed these concepts in a systematic manner.

In recent years, domestic and foreign experts and scholars hold different views towards the definition and connotation of the media architecture, of which, in the opinion of the author, the most authoritative and concrete one is that when Dr. Gernot Tscherteu and Dr. Hank Haeusler, the core members of Media Architecture Institute (MAI), held academic activities centered on "media architecture" in the School of Architecture of Central Academy of Fine Arts in 2013, they defined "media architecture" on behalf of the

academic field, that is, media architecture, as a superordinate one, whose semantic coverage can be introduced to the engineering, technology and materials through the science of building space, then to the social level, to the human level through the social level and ultimately back to the art and architecture. Professor Chang Zhigang(2015), vice president of the Architecture College of China Central Academy of Fine Arts, also proposed that media architecture is a new architectural form that combines architectural façade with digital media images. To a certain extent, it can be regarded as an art device with scientific and technological attributes. In addition to architectural specialties, it also involves visual communication, advertising planning, film and television art, media animation, device art, and experimental art. Many fields such as operation, digital intelligence, semiconductor lighting, green energy saving and so on. This is a trend for the construction of smart city, and also a trend for the future .The author believes that, in fact, the concept of media architecture is the integration of media and architecture, namely, building is media and media is building. Architecture has become the carrier of information transmission and interaction in the city.

2 The Characteristics of Media Architecture

2.1 Pluralism

One of the most pivotal features of media architecture is pluralism. Crossed fusion of natural, cultural, technological and artistic elements gives birth to the media architecture which is associated with a number of fields including architectural design, interior design, landscape design, lighting design, visual

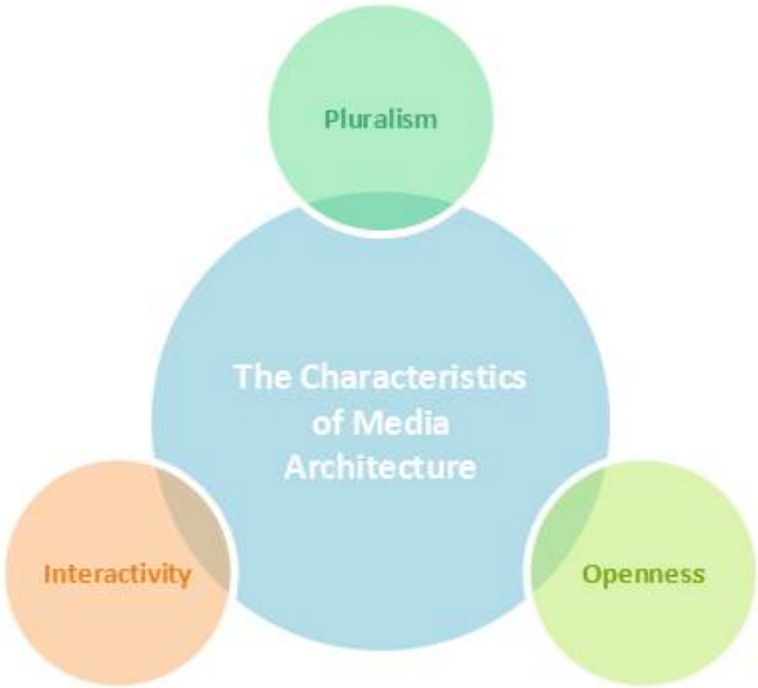

Table 1. The Characteristics of Media Architecture

communication, digital media, experimental art, installation art and performance art. It is the pluralistic comprehensive design outcome integrating the above-mentioned areas, with the architectural design, interior design and landscape design as carrier.

The pluralism of media architecture covers a wide range of contents, with similar but completely different characteristics in each part like the type, function, form, technology, materials, and implementation, which constitutes the implementation process necessary for a media building to undergo pluralistic integration. For example, to enable the media architecture to effectively transmit information need to draw on the knowledge of communication; the selection of building surface materials should take into account the knowledge of materials science and industrial molding design; the lighting technology will be applied to address the problem of building illumination; computer information regulation is indispensable for the control of the surface components. The boundary of the fields that composes the building is increasingly blurred, and the emergence of the building arising from the crossed fusion of multiple areas indicates the future of architecture.

2.2 Interactivity

As information, digitalization and network constantly penetrate our daily life, the form of architecture has begun to change. The media building in the context of information age transforms the model of one-way communication between people and traditional building. Based on digital technology, it combines the dimensional image, sound and realistic space, triggers people's visual, auditory and tactual interaction and fulfills the expansion from two dimensions to three dimensions, so that the sense of experience is not confined to the passive aesthetic visual sense, but gives more emphasis on the spatial experience that originates from the active participation of the public. Architects, artists and online media experts are creators and intermediaries, while the public become the participants, through which the space can perceive the behavior of the public and make the appropriate changes, and the building has a two-way interactivity(Jia Weiyang, 2008).

Meanwhile, with the popularity of digital technology, the interaction between people becomes less, the interaction between people and machine is more frequent. The emergence of media buildings not only changes the characteristics of the building, but also, in fact, provides a platform for the interaction between human, which can get the people closer and safeguard the harmonious, stable development of society in a way consistent with the development of the times.

2.3 Openness

The rise of Internet in the 1990s narrowed the distance of the world in terms of geography and time, which marked the establishment of an unprecedented large platform for information interaction. At the third session of the 12th National People's Congress in 2015, Premier Li Keqiang(2015) proposed the action plan *"Internet +". "Internet +*" strategy is meant to utilize the Internet platform and information and communication technology to create a new ecology in the emerging field by combining various sectors including Internet and the traditional industries.

In the information age, the combination of architecture and Internet leads to the media architecture which carries the function to use space and disseminate information, and constitutes a brand-new and more open platform for information communication. Compared with traditional media, the way that media architecture combines the architectural form and information expression is more advantageous in terms of the size and resolution ratio. And it builds a comprehensive information network platform

through the Internet and digital technology. The media architecture can convey the intention of architects and operators and express the content that the audience want to deliver. It gives consideration to the commercial interests, municipal management and the development of society and culture, forming an open environment for information exchange.

3 The Type of Media Architecture

The expression of media architecture in the present stage can be divided into three types: display technology, mechanical technology and projection technology. Each type has its own characteristics and advantages, summarized as follows:

3.1 Display Technology

The media architecture belonging to display technology is the one with LED (Light Emitting Diode) and LCD (Liquid Crystal Display) as representation language. LED display technology is a large integrated photoelectric display-based system, which utilizes solid-state semiconductor device that can converts electric energy into visible light to form a display system that can carry information. In the early stage, it is wildly used in the design of architecture nightscape lighting, but only combined with external façade of the building, serving as a decoration, without the function of disseminating information. LCD display technology can also be called pixel rasterization imaging technology. By means of plane composition, the media architecture of this type seamlessly connects the conventional imaging or lighting screen which is used as elements of the façade of the building surface, putting up an onscreen media façade on building elevation.

Nowadays, with the combination of computer technology and network, giving the features of media

Figure 1. Outer wall of LED display of US NASDAQ securities market headquarters building

architecture of display technology, such as environmental protection and energy saving, high security, advanced technology, flexible structure and customizability, it becomes the most common type of media architecture, but it also has limitations regarding representing the details of video image and text.

The most typical case of media architecture of display technology is NASDAQ securities market headquarters building located in New York, the United States (Figure 1). The outer wall of LED display is about 50 meters high. Every day it constantly sends the securities information in real time to the public, being a LED display technology-based media for public information dissemination.

3.2 Projection Technology

The medial architecture of projection technology relies on the fundamental principle of optics, employs high-power engineering projector, uses high-light illuminant, utilizes the building surface that can triggers diffuse reflection, takes advantage of network construction of hardware equipment and fusion of professional software, and projects pre-made video, image, or text onto building surface(Zhang Jian, 2013). It creates a magnificent 3D effect through the animated image tailored to the structure and outline of a building. The virtual image and physical building constitute an entity which is hard to distinguish the real part and the fake part. Then added with the sound effect, an authentic and imaginary visual effect arises.

Figure2 . Christmas projection show at Melbourne Town Hall, Australia

The representation of media architecture of projection technology is more natural than the display technology, which has the advantages of quick implementation, short production period, remarkable spatial effect and instantaneous influence. But it still has large limitations, on the one hand, poor persistence, so that it is more suitable for temporary culture or commercial activities; on the other hand,

high demand on the environment. Its effect can be readily affected by the illuminant on the spot, so that it is not suitable for the use in daytime.

During the Christmas season every year, the Melbourne Town Hall will invite artists and creation team to elaborately design an eye-catching 3D architectural projection show (Figure 2). When the changing colors and splendid special effects are projected onto the ancient buildings, the modern technology collides with traditional culture, endowing the city with fresh life.

3.3 Mechanical Technology

The media architecture of mechanical technology capitalizes on the mechanical technology to compose the module of physical structure to form a dynamic surface on the building, so as to represent the information, as if the building surface is covered with a new layer of skin, full of natural vitality. Compared with the media architecture of other types that use video and image to convey the specific information, the media architecture of mechanical technology expresses more abstract information which are often

Figure 3. Swiss Science Center Technorama outer wall

related to the physical environment.

The media architecture of mechanical technology uses physical mechanics and microelectronics information technology control as the cornerstone. It conveys the information in the real, touchable three-dimensional form. The media architecture based on this can be full of natural dynamic beauty. However, its limitations are the long production cycle due to the purely physical construction, and the high cost, which results in the slow or stagnant updating of the building and the waste of resources; abstract information transmission cannot be perceived directly, and the contents that it disseminates are limited.

Architect Ned Kahn designed the building surface of Swiss Science Center Technorama in Switzerland in 2002. The building surface is made of tens of thousands of aluminum plates hanging on it. When the wind blows, the aluminum plates move with the wind, making you feel you are in the pasture of metal (Figure 3). Natural light and shadow infiltrate to the room through the gap between the aluminum plates, forming a mottled lighting effect on the ground. The surface of this media architectural is designed to reveal the variability and complexity of the natural wind through the movement of the aluminum plate in the airflow. It visualizes the invisible flow of wind and represents a unique visual and ever-changing visual effect.

4 Research Status of Media Architecture Industry

4.1 Research status in foreign countries

Foreign countries research on media architecture enjoys a rapid development. The significant research results mainly include Media Architecture Institution (MAI), an international research institution. MAI is formerly known as the *"Media Architecture Research Group"*, established in Poland in 2006 and relocated to Vienna, Austria, in 2009, and officially renamed as Media Architecture Institution. In 2011, MAI founded a research division in Australia; MAI works to transcend the boundaries of different disciplines and applications, and develop active and creative working procedures, professional skills and practical tools; from 2006 to date, MAI held a total of five international media architecture summits and five international media architecture biennial exhibitions, collected worldwide cases related to media architecture and media surface (Figure 4), conducted researches, and wrote a series of reports, providing the experts, academics, designers of different countries engaged in the research of media architecture with a more comprehensive and authoritative combing and summarizing of theory.

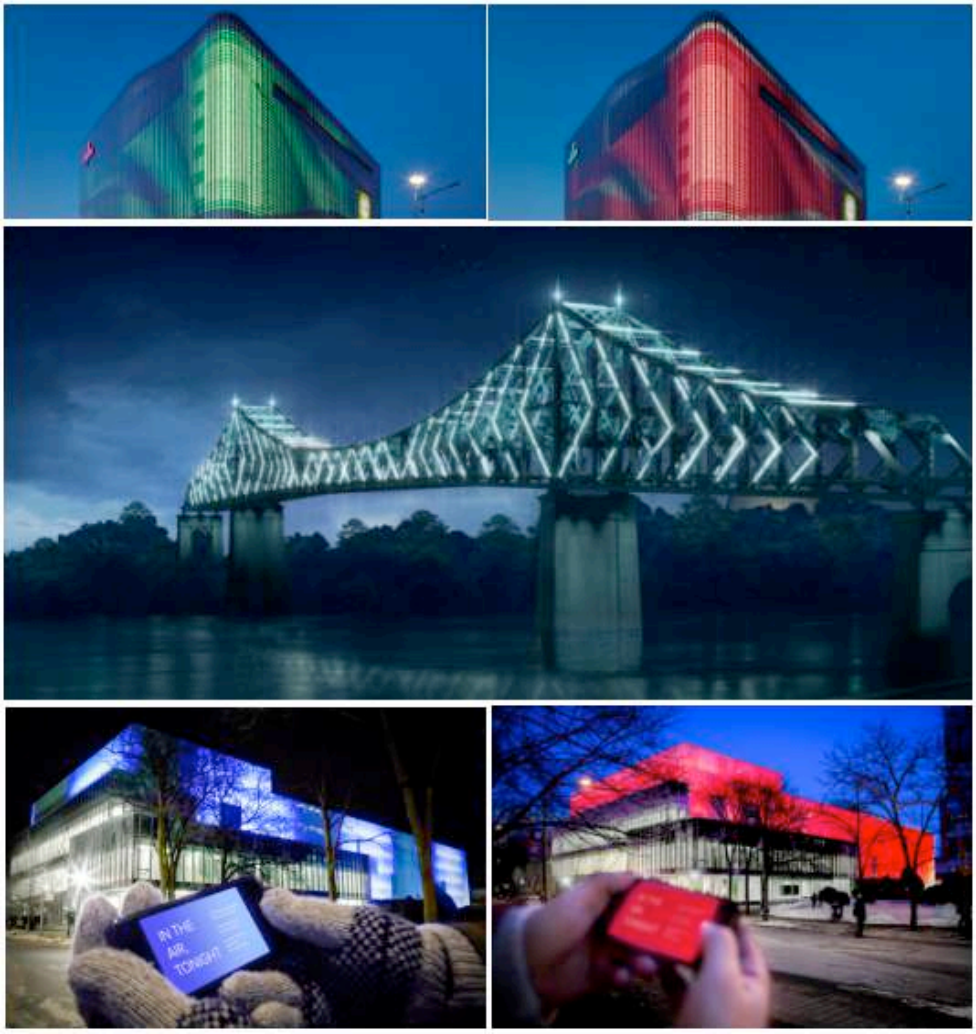

Figure 4. Several foreign excellent media architecture cases

4.2 Research status in China

In contrast, the study of media architecture in China is still in the early stage and remains scattered. Most of them take the commercial interests as the starting point for the exploration. The media architecture falls into the means of commercial brands to improve profits. Few studies conduct the theoretical research from the perspectives of urban environment, development history, social structure, cultural ideology and information dissemination. For instance, in 2011, in Wuhan, Hubei, China, Wanda Group

Figure 5. Business district "Chu River and Han Street" in Wuhan, Hebei,,China

built the business district *"Chu River and Han Street"* (Figure 5) which comprises a number of media architectures. They now have become the landmark commercial buildings in Wuhan.

However, there are already many foresighted explorers who are aware of the importance of media architecture for the future development of the city, and on this basis, conduct more in-depth theoretical study on media architecture. Lighting and Space Design Laboratory of Architecture School of Central Academy of Fine Arts works with Virtual Reality Laboratory to establish the CAFA Media Architecture Studio (CAFAMAS); CAFAMAS has signed the cooperation framework agreement with MAI in June 2012. In April 2015, Beijing International Media Architecture Summit and Special Exhibition kicked off at the academic hall of Central Academy of Fine Arts. The conference was themed on the *"Media Architecture Creates Smart Life"*, which is the first high-profile summit in the field of international media architecture in mainland China. The domestic and foreign pioneers and explorers of media architecture gathered here, sharing the latest achievements, dynamics and concept of media architecture, discussing the collaborative innovation model through which the art and technology can be stimulated and integrated, and proactively promote the establishment of cross-field, cross-professional platform and organizational mechanism for academic exchange in China.

5 The Significance and Influence of Media Architecture on Urban Development

Martin Tomitsch(2013), the core member of MAI, mentioned in the course of *"Media Architecture"* joint studio held by the School of Architecture of the Central Academy of Fine Arts in 2013 that:

Media architecture contains not only the aesthetic significance, but also the social significance-change ideology and urban life. Media architecture is not merely the lighting on the facades of large building. The technology and art representation of media interaction can be more closely linked to urban life, to realize the dialogue between history and modern time, the fusion of science and technology and art, the exchange between building and human, and the coexistence between visual experience and normal life .

Dr. Martin highly summarizes the importance and impact of media architecture on urban development.

5.1 The Media Architecture Helps to Shape the Informationalized City Environment

In the Internet technology-based information age, the shaping of informationalized city environment is the priority for the urban development. The so-called informatization of urban environment is to apply the Internet-based digital technology to the fields like urban management, natural environment testing and statistics, business and economic development, and social humanity, so as to achieve the centralized and coordinated management of urban environment. Architecture is one of the important elements in the urban environment. The huge quantity and size of the architecture become the perfect carrier that can be used to disseminate information in the city. The media architecture can have the interactive information exchange with people and the environment through the digital means. Informatization of urban environment can be shaped through this tangible or intangible means of communication.

The construction of media architecture, on the one hand, can convert the feelings of people on urban environment into information, share with other people in the city, and build a platform for the communication between people and the environment. On the other hand, when the citizens take the initiative to participate in sharing their views on the urban environment and providing advice, they can truly get involved in the construction of urban environment, which will be conducive to the harmonious development of urban environment and the improvement of city standard, and making the city more vigorous.

5.2 The Media Architecture Helps to Build Diversified Urban Environment

The construction of media architecture is the result of multi-disciplinary and multi-filed cooperation, which requires the collaboration and sharing of the basic industries. The whole construction process contributes to the exchange and integration of various industries in cities, promotes the sprouting of innovative industries, and realizes the diversified innovative development of urban environment. In addition, information representation of media architecture is closely related to the cultural environment of the city itself. The themes of life and culture of cities in different regions have their own characteristics. The media architecture, as the carrier of urban cultural information, displays the unique cultural charm and vitality of modern metropolis to local residents or the migrates, and becomes the media for inter-cultural communication between cities and the exchange platform for the building of urban culture, adding diversified information elements to the construction of urban environment.

5.3 The Media Architecture Helps to Form Unshackled Urban Environment

For the urban environment, media architecture is not only the spreader of commercial economy, but also the platform for the exchange of urban cultural information. The colorful combination of sound, light and electricity has a strong attraction and guidance to the behavior of the public. It can readily catch the eyes of the public, and can improve citizens' assessment on urban environment. Urban residents can utilize this platform to freely share the thinking and understanding on the development of urban environment with others, so as to enhance the enthusiasm of urban residents who will then take the initiative to participate in the development of the city and feel the sense of belonging. The construction of media architecture will help to form an unshackled urban environment, allowing the residents to discuss the events in urban development openly and rationally to explore the innovative cultural life in city.

6 Conclusion

The Working Conference Concerning Central Cities was held in Beijing from 20 to 21 December.2015. This marks that after 37 years, *"work in city"* once again is elevated to the central level for specialized research and deployment, indicating that work in city in China will usher in a huge change, giving rise to a widespread concern in the market. During the 12th Five-Year period, more than 85% of the city have undertaken the construction of the intelligent city, and many applications of intelligent city have been common .

Intelligent city, as the direction of urban development in the *"Internet +"* era, is a feast that combines the most advanced information technologies in modern time (Internet, Internet of things, big data, cloud computing, smart sensors, etc.). The construction of intelligent city will greatly strengthen the innovation, order and continuity of a city (Huang Yongcheng. 2015).

Intelligent city is a form of society and city. Leaving out the large number of applications of digital technology, the ideas and behavior of people living in city are the most important. Architecture, as a key element of urban life, will certainly gain the rapid development in the midst of information technology tide.

Media architecture has penetrability, which can represent the relationship among the groups in city, and even among urban histories. The construction of media architecture will also enhance the understating among the countries and the citizens; meanwhile, the development of the media architecture industry can integrate the existing resources in China, break the barriers between enterprises and schools, lighting and architecture, engineering technology and art, and among the artists, architects and educators, so as to create a sound communication and improve the cultural awareness and international perspective.

Media architecture is an important trend of urban development in the future. It will realize the combination of architectural physical space and cultural virtual space, technology and art in the city, and provide the device and communication platform for interactive social activities, being the carrier of "intelligent city, smart life".

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URBAN INTERVENTION AS GOOD TRANSFORMATION PRACTICE IN THE URBAN VILLAGE,SHENZHEN, CHINA

SHUNYUAN ZHANG, YUAN WANG

Shunyuan Zhang, Phd Student, School of Architecture and Urban Planning at Huazhong University of Science and Technology

Yuan Wang, Doctoral Supervisor, Professor, School of Architecture and Urban Planning at Huazhong University of Science and Technology

Abstract

Shenzhen, as a new type of international metropolitan mega-city, urban village has been thought of as a hot topic in the rapid urban development. Taking Nantou Old Town as an example, this paper briefly introduces urban village development in Shenzhen since the rapid modern urbanization process in the last 30 years. And demonstrates 7th Shenzhen\Hong Kong Urbanism\Architecture Bi-city Biennale (2017UABB)— "Cities, grow in difference" works as an experimental transformation practice in Nantou Old Town, and explains the urban intervention to figure out the in-betweens from urban village to formal city. All the transformation practices in this Biennial, first, plays a significant role both as an experiment site for improving urban architecture and the quality of everyday life; as a platform to explore new theories, experiments and actions in-between "urban village" and formal city. Second, works as an attempt to provide an opportunity for urban policy to meet a plan and offer a new possibility for a sustainable future urban prospect. In this case, urban intervention can be mainly classified into Acupunctural Intervention, Community Participation and Public Art, they are built upon through human-based needs and carrying on under impromptu processing, which brings city image into urban village. All the findings and analysis offers a new possibility and instructive advice for urban regeneration, revitalization and a guide for future urban living.

Keywords: transformation practice, urban informality, public space, urban intervention, urban village, 2017 UABB, China

Introduction

Currently around one third of the world's urban population lives in urban informal settlements. "urban village" works as a very particular urban informal settlement in China and accepts immigration from other cities and towns that mainly sits in urban core area in Chinese mega cities. Meanwhile, urban village had been usually defined as an "urban cancer" in a very negative way to citizens. However, this "urban cancer" is always playing as the most vivid and live spot in urban context. In recent years, architects, urban planners, artists and other related fields colleagues have pay attention to this particular vivid and live spot. City planning acts as external force is the top-down way and spontaneous impetus acts as inner force is the bottom-up way during the process of accelerating urbanization, while "urban village" sits in

between the two forces. Thus, urban village has been rethought as a dualistic urban phenomenon, providing an understanding specially regarding how they become part of the formal city, remains elusive.

Urban intervention plays as the dominating method in 2017UABB. Many types of urban intervention have been practiced in this vivid spot, Nantou—a place with strong everyday lifestyle and immigration. In this case, urban intervention can be mainly classified into Acupunctural Intervention, Community Participation and Public Art, they are built upon through human-based needs and carrying on under impromptu processing, which brings city image into urban village. Whole exhibition displays on the streets and alley ways, green spaces, housings and factories, which are blended into everyday life, and encouraging people to discover while wanderings in Nantou Old Town. Therefore, urban intervention can be determined as an intermediary both between creators and users, and between citizens and everyday urban life.

The purpose of this paper attempts to offers a new possibility and instructive advice for urban regeneration, revitalization and a guide for future urban living through a series of urban intervention provided by 2017UABB. Following this introduction, this paper has been divided into five parts. This paper begins by presenting brief background of urban village in Shenzhen, the history of Nantou Old Town and 2017UABB. The second part is laying out the three types of urban intervention of 2017UABB, which are acupunctural intervention, community participation and public art. The third part is focused on the three states of intervention merged from findings. The fourth part is concerned with two modes of intervention, which refers to the transformation practice process. The last part is conclusion.

Nantou Old Town and 2017UABB

Urban Village in Shenzhen

Figure 1. Nantou Old Town and City Bird’s Eye View (from North-East to South-West)

Shenzhen has been deliberately concerned as a young city with only a short history within only more than 30 years. Miraculously, Shenzhen is evolved from a "little fishing village" into a modern metropolis is still full of mainstream media and public imagination. However, Shenzhen lacks of history memory and culture nourish, it became the portrait city image of a special economic zones. Urban village as an alternative pattern in contemporary urban, works particularly as it reflects the incomplete state of the city's long-term evolution. Spontaneous forming, self-constructed and self-regenerated are the key features of urban village development.

The area of urban village accounts for one sixth of the total area of Shenzhen. There are about nine million people living in the village in Shenzhen while there are more than 20 million people in Shenzhen

totally. That is, the urban village takes 16.7% space of city to accommodate 45% of the whole urban population (Liu, Meng & Hou, 2017).

Brief History of Nantou Old Town

Nantou Old Town is located at Nanshan District in the central area of Shenzhen. It began in Jin Dynasty within more than 1700 years' history. It used to be the political, economic and military center of Shenzhen during the Ming and Qing Dynasty. And it administered a wide range of areas including Shenzhen, Zhuhai, Hong Kong and Macao today.

"The early stage of Nantou was destroyed and abandoned during the period of ***Jing Hai Qian Jie*** （***Net Sea Moving Boundary***） and rebuilt afterwards. Until the Bao'an County Council was moved out of Nantou at the early stage of foundation of state, ending up Nantou urban period and turned it into the original silence village surrounded by the ancient city wall. This village has been developed and broke through the ancient city wall in the following decades, a large amount of historical buildings was demolished and rebuilt, resulting in old town continued to disappear and the village grew up gradually" (Meng, 2017).

Figure 2. Historical Architecture in Nantou Old Town

Today, Nantou Old Town development has been stuck in between historic preservation and urban regeneration. Many small scale protection and transformation inside and outside Nantou has never been interrupted.

Brief Overview of 2017UABB

Figure 3. Bird's Eye View of Transformed Nantou

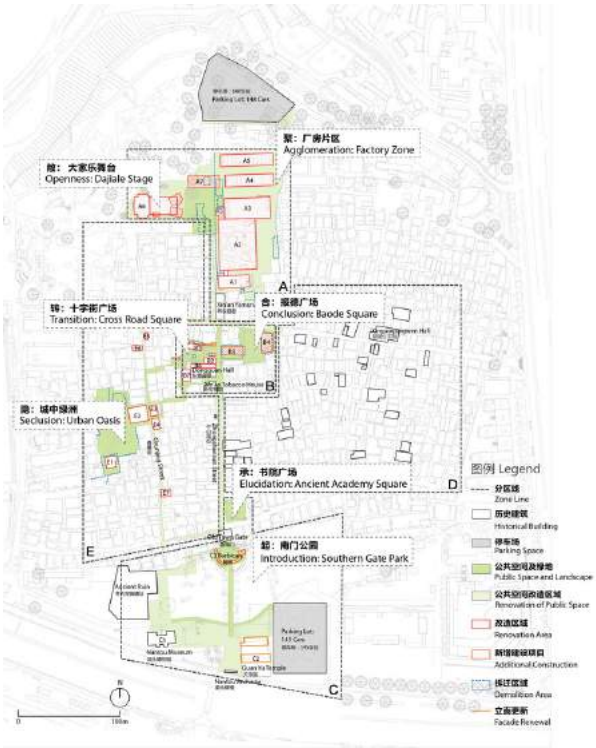

Figure 4. 2017UABB Transformed Nantou Map

"Cities, Grow in Difference"- the subject of 2017 UABB can be interpreted as an experimental opportunity to balance the historical regeneration and urban village transformation in Nantou Old Town. Guiding villagers to conduct spontaneous "bottom-up" action through a variety of creative methods created by professions from the fields of architecture, urban planning and art. It can be regarded as a challenge to traditional urban planning. The exhibition presents the research, design works with the vision to the world, the global south and also to southern region in China, focusing on urban issues merged from rapid urban development. In addition, given the importance to art as significant as architecture and urban, art, becoming one of three major themes (***Global South, Urban Village and Art Making City****)* for the first time: encouraging people dare to dream about the future picture of urban village, and explore the potential planning for better urban development.

Three Types of Intervention：The City Is The Exhibition Spot

Type One：Acupunctural Intervention

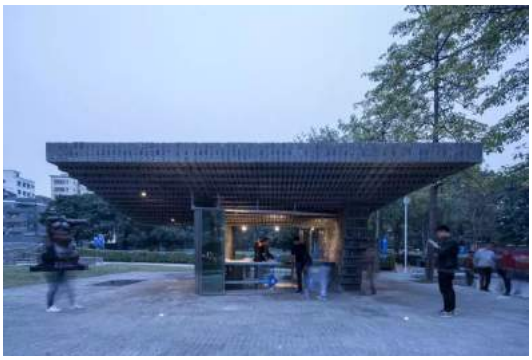

Figure 5. Information Pavilion

Information Pavilion designed by Zhang Yonghe, it looks like the old pavilion on the villa's pathway in the ancient time (UABB, 2017). This kiosk is made of bricks, following the dialogue between Louis Kahn and brick. The brick cantilever roof gives people a feeling of "both heavy and light", pavilion provides people a rest space.

Figure 6. The Street Museum

Figure 7. The Arena

94 years old French pioneer architect Yona Friedman, ***The Street Museum*** (figure 6) sits in the central of South Gate park as his improvisation art work. This Museum comes from his original own idea "mobile architecture". Then, residents use the elements of their everyday life to reflect their memories——spontaneously, residents make meaningful objects as "exhibits" in this museum (UABB, 2017). ***The Arena*** (figure 7) by artist Yin Xiuzhen, based on the skyline of different cities, forming a solid sports equipment by using motorcycle's exhaust pipe and stainless steel tube (UABB, 2017).

Figure 8. Zhu Lang Hua Gai

Figure 9. Fire Foodies Club

Zhulang Huagai: A Figure for the Nantou Urban Villa (figure 8) by Nader Tehran and ***Fire Foodies Club (FFC)*** (figure 9) by Atelier Bow-wow provide people a public space for taking rest.

Type Two：Community Participation

2017UABB has Highlighted the process including all kinds of informal intervention and informal "button-up" community participation. Emphasizing on mobilizing public attention and participation through various types of intervention brought by artists and social institutions, focusing on residents' place-making activities. Such as ***xxxxxxxx*** by Lin Yilin, this is action intervention. He purchased goods from shops on both sides of the street, on the opening day of UABB, these goods will be placed on the ground one by one to form a long line. Laimikis. Lt City Game Research Laboratory from Lithuania brings their game: ***Urbingo*** to us. This game intervention guides people to open up communities, and provides a new perspective to the city. Community participation is one of mainstream strategies in neighborhood planning in European and American Countries, aiming at restructuring the social relations among local people and reconnecting people with the community.

Type Three：Public Art (Murals)

Figure 10. PINGHÉNG (Balance) (left) and WEGO (right)

The Feast by Italian HITNES and ***The Five Cereal Ritual*** by Italian Giacomo Bufarini are murals intervention. Artist paint chicken, duck, fish and crawfish colorfully on wall. Also, ***PINGHÉNG (Balance)*** is a large-scale intervention on the façade of the Old Factory Building, designed by Spanish collective BOAmistura (figure 10). Using the strong evocative power of painting and demonstrates three letters by using yellow, red and green (UABB, 2017).

Three States of Intervention：The Exhibition Is The Transformation Practice

Each exhibit has their own understanding about the theme: ***Grow in difference and rebirth***, the exhibition demonstrates three different states of intervention while exhibits put on site, “accident” happened frequently.

State One：More Connection

Besides the ***Information Pavilion***, many kids like squatting on the ground to play with stones, a resting space turns into a playground (figure 5); ***The Arena*** (figure 7) is also a "gym room" for children; But unfortunately, a warning sign with "no climbing, no consequences" is attached to ***The Arena*** and a row of handrail in front of ***WEGO*** (figure 10) by MVRDV and The Why Factory avoid people to get close to the two exhibits and interacting with them. All kinds of interactions among villagers, tourists and security seems are some small disasters. On the contrary, those disasters have increased the publicity and interest of the exhibition.

State Two：Less Connection

Figure 11. Sidewalk Snack Booth*Floral Board

Sidewalk Snack Booth*Floral Board by Guang Yu and Choi Wing Kei (figure 11), ***Fire Foodies Club (FFC)*** (figure 9) from Atelier Bow-wow and ***Your Expression Is My Symbol*** by Liu Qingyuan are belong to the representation of imitation everyday life. In order to enhance the interaction between the exhibition site and tourists, artists are trying to create a scene or pattern that is familiar to the citizens which are based on everyday scenes merged from reginal traditions and lifestyles, translate scenes and lifestyle into murals and installations afterwards. However, villagers who living in Nantou urban village are seldom interact with murals and installations. Perhaps it is only happened while e villagers are growing familiar with these sudden behemoths and some unknown walls’ drawings, these exhibits can accomplish the mission of conveying the designer's intention.

State Three：None Connection

The value of highly conceptualized exhibits from western context cannot be presented while putting them into urban village of an extremely Chinses context. On the contrary, those “western exhibit”are incompatible with urban village. Therefore, Yona’s ***The Street Museum*** (figure 6) seems unsuccessful. He created the museum through a series of large iron circles, but only a few “exhibits” are inside the museum. Because Chinese people are more willing to treasure their own meaningful objects inside in the cupboard rather than the outside, so that ***The Street Museum*** just becomes a place for children having fun. And the interesting thing is, on the one hand, this installation lacks of the intention of “here and now”

and “on the ground”, the museum only abstractly delivers and broadcasts architect Yona’s utopian idea. On the other hand, considering about the attitude about art intervention from urban residents, it is clear to tell the cultural and ideological difference between China and the west.

Zhulang Huagai: A Figure for the Nantou Urban Villa (figure 8) by Nader Tehran is under similar situation. The on spot sense of ***Zhulang Huagai*** is not as strong as the sense from media push—capture its architectural beauty only by blocking the background of complex urban villages, also the designer's actual intention were not met. People just sit on the steps exclude design category to have a rest. Only from the perspective of architecture, ***The Street Museum*** and ***Zhulang Huagai*** only embody the rhythmic beauty of the structure, far away from the initial meaning of this biennale—“Cities, grow in difference”, neither the tourists nor the villagers had an effective interaction with the two installation intervention.

There is, these "accidents" give us chance to us to see different interpretations from different social backgrounds. The three different states of intervention above demonstrate the interactions are full of uncertainty that creates among exhibits and people. Moreover, “accidents”represent and explain “the exhibition is the transformation practice”.

Two Modes of Intervention：The Process of Transformation Practice

Mode One：*CI-Village-TY* Built-together

City-Village-ty built-together and community participation are the most highlighted processed during the 2017UABB. Urban village as the exhibition spot cannot living without villagers’ participation. However, urban village is one kind of special community, thus, it has different side compared to the neighborhood in the urban community: a relatively complex social network connecting villagers’ everyday life. In Nantou, there are indigenous people and migrations, there are managers and users, there are merchants and customers and there are landlords and tenants. As for everyday activities, including go to work, go to school, consumption, social, eating and entertainment etc. This invisible network works as a catalyst to wake up every space in urban village.

Exhibits are completed with villagers. Everyday activities of the villagers can inspire the designers to gain the inspiration from the spot. Such as, while artists are creating wall painting, the villagers would join the dynamic drawing activity. Moreover, curators’ team has created ***Mass Art Gallery***, it aims at villagers and citizens participate jointly, including a series of thematic activities such as ***residency program***, ***movie shoots***, ***drama club*** and ***spatial games***. Therefore, the whole spot of urban village in Nantou becomes a public space for people taking activities, exhibition has been integrated into the everyday life of the village through ***Mass Art Gallery,*** building up a plug-in connection between exhibition and village life, and inspire the potential energy of the village (urbanus, 2017).

Mode Two：Art Intervention

2017UABB gives the importance to art as significant as architecture and urban this time. Art, becoming one of three major themes (***Global South, Urban Village*** and ***Art Making City***) for the first time. Due to the Art part is involved in this biennial, 2017UABB returns to the origin more or less: providing an opportunity to show design, art works from grassroots artist and designers. 2017UABB can be regarded as a window to see their perspectives of urban living environment from grassroots artist and designers. In addition, 2017UABB made a symbolic dialogue with the first Venice biennale through the time dimension.

Contemporary art to the biennial, is actually artist's own thoughts intervene into the city. Simply, 2017UABB seems provides a chance for citizens to get closely with contemporary art, increase vitality to everyday life for citizens, and brings sense of ceremony to citizens as well. Actually, these contemporary

art works help people to broaden their views and update their thinking. ***Art Making City*** is the movement has been identified as a catalyst to explore social self-renewal and creation awareness in response to urban development.

Conclusion

The aim of this paper was to determine urban intervention plays as the dominating method in 2017UABB, and this biennial provides a new possibility and instructive advice for future urban regeneration, revitalization and a guide for urban living in future. And the paper has classified three types of intervention which are acupunctural intervention, community participation and public art. The most obviously finding is, while villagers and tourists have interacted with each installation interventions during the exhibition on the spot, the three types of intervention can be identified into three state categories: more connection, less connection and none connection. Then, the Ci-village-ty built-together and art intervention that we have identified as two modes of intervention transformation practice therefore assists in our understanding of the role of urban intervention as good transformation practice in the urban village. All kinds of installation and art intervention are the actions which are form up place-making. And are based on meeting the residents' basic needs. Moreover, it would be interesting to assess the effects of more types of urban intervention as transformation in the urban village ore urban public space in future.

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