Sustainable Urban Regeneration of Historic City Centres – Lessons Learnt

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Summary

Cities are society's centres of human interaction, creativity, knowledge, diversity, culture, commerce and economic creativity. The accretion of several layers of history tends to reveal a great deal about the city's past, present and even future. Historic city centres are usually endowed with a multitude of historic buildings, heritage sites and the like. However, it is also these historical centres that are most prone to the undesirable and consequential effects of growth and rapid technological advancement, where a range of environmental and developmental challenges find their crude expression. The rehabilitation and conservation of historic city centres serves as a fundamental catalyst for change. Furthermore, urban regeneration of historical city centres also promotes social interaction between inhabitants of the city, and the adoption of its urban spaces encourages public activity. This paper scrutinizes the city centre of two historical cities which are Barcelona, Spain and Istanbul, Turkey. Successful aspects of their ecological performance are highlighted. The two downtown areas discussed in this paper represent the downtown of two Mediterranean cities, and both are distinguished historical cities who have contextual similarities.

The historical city centres of these Mediterranean cities have undergone variety of projects and strategic plans for urban regeneration, development and beautification. Moreover, various attempts have been made for the improvement of their environmental quality and ecological performance. This is through increases in urban green spaces and public parks, increased dependence on renewable energy technologies (RETs) and adopting sustainable transportation modes as opposed to undesirable and harmful vehicular transport. In essence, many urban regeneration plans have been aimed at conserving and preserving buildings and sites that are considered symbolic of the two cities heritage and legacy. Concomitantly, the paper presents a review of sustainability issues related to these two city centres and analyses the strategies that have been used through various urban regeneration projects and development plans. The paper particularly focuses on investigating the strategic plans and attempts that have been made at urban regeneration level by the Barcelona City Council and the Greater Municipality of Istanbul for the revitalization of their core areas.

Keywords: Historical City Centres, Urban Regeneration, Environmental Quality, Core City of Barcelona, The Historical Peninsula, The Greater Municipality of Istanbul, Sustainable Strategies and Strategic Plans.

1. Introduction

In order to comprehend the nature of cities, it is essential to look back into history and identify their beginnings, growth, development and the multiple layers time has bestowed upon them. It is interesting to note how the historical quarters of the city tend to represent their origins. The beginnings of most world-famous cities, such as Alexandria, Egypt, Istanbul in Turkey and Barcelona in Spain, were originally constructed in the area that nowadays represents the historical beginnings of these cities.

The importance of historic centres is that they serve as a place of identity, memory and belonging [1]. Historic city centres tend to forge an urban identity for the rest of city, and for surrounding districts to adopt. In many cases, historic districts are representative of the entire city, the result of the outstanding multitude of historic buildings and heritage and archaeological sites, which manage to endure time, contradicting new functions and development that take place around them, at expeditious rates.

City centres usually tend to serve as the city's central business districts (CBDs), as they are often referred to. This is owing to the high percentage of commercial functions, public buildings and offices that exist within. City centres are also critical geographical units in the formulation and implementation of sectoral policies – in water, transport and communications, energy, waste management and construction – that will shape cities futures for better or worse. In this way, the city centre tends to both represent and reveal a great deal about the city's economic and environmental performance and success, thus adding notable eminence and value to it.

The necessity of generating a global action plan for proactive engagement of mayors to improve sustainability locally, and promote the sustainable green development was promoted by the Local Agenda 21 enshrined in the 1992 Rio Convention. This is a challenging time, when governments need to take a step further ahead the Local Agenda 21. Cities will be central in conveying tomorrow’s economic benefits and welfare, along with the stipulation of decent jobs and human wellbeing within an environment liberated from the risks and threats of pollution, climate change, resource depletion and degradation of ecosystem.

Achieving the transformative change in cities requires that we urgently integrate urban regeneration in our planning policies, co-integrate social and cultural aspects; ecology and nature and human economic development harmoniously. The urban regeneration projects undertaken in the city centres of two Mediterranean cities, Barcelona in Spain and Istanbul in Turkey are discussed in this paper, along side the changes those projects brought to their cities.

2. Urban Regeneration as a Catalyst for Change

Urban regeneration as described by Roberts [2] is, “a comprehensive and integrated vision and action which leads to the resolution of urban problems which seeks to bring about a lasting improvement in the economic, physical, social and environmental condition of an area that has been subject to change”. In essence, urban regeneration intends to change the nature of a place by involving not only residents but also other partnerships working among different stakeholders, embracing an agenda of multiple objectives and activities. Since, Gibson and Kocabas, 2001 [3] states urban regeneration as a holistic, comprehensive and integrated approach that embraces the three E’s – Economy, Equity and Environment.

Urban regeneration and the conservation of historic city centres contribute largely towards upgrading environmental quality, thus serving as a fundamental catalyst for change. Development projects taking place in historic districts tends to attract a variety of creative economic activity and competition, therefore, encouraging both new inhabitants and visitors to revisit and rediscover these restored vicinities of their cities. Moreover, upgrading the physical built environment, social fabric and urban spaces within the historical urban structure all contribute towards increasing their adoption as places for public congregation and activity. This consequently increases social interaction and cohesion between citizens. Furthermore, conservation and regeneration of historic city centres tends to re-affirm residents' feelings of identity and sense of belonging.

Urban regeneration is often witnessed as an approach towards sustainability. According to Stren and Polese [4], one of the main aims of sustainable urban policy is to "bring people together, to weave parts of the city into a cohesive whole, and to increase accessibility (spatial and otherwise) to public services and employment [4]." In addition, sustainable areas are those which are created to support sustainable living, with a prime focus being placed on economic, social and environmental sustainability [5]. This is of distinguished importance in historic districts which tend to represent and symbolise a diverse set of ideals of the city's identity, including its history and culture on one hand, and its local economic viability on the other.

3. Historical Background and Spatial Development

3.1 Core City of Barcelona, Spain

Barcelona city is examined in this paper as an example of Mediterranean city, a Waterfront city that has experienced successful processes of structural, community, institutional, urban and physical development and readjustment. The Core City of Barcelona is a relatively overlooked city, being considered the central hub of the Metropolitan Region of Barcelona (MRB), the capital of Catalonia, in Spain [6]. It is also Europe's largest metropolis on the Mediterranean coast. As shown in Figure 1 below, the Core City of Barcelona is situated directly along the Mediterranean Sea. It is bounded by natural elements in several directions; the Collserola mountain ranges to the North and rivers Besos and Llobregat to the east and west respectively [7].

It is important to identify Barcelona as an historical city, whose urban structure has evolved over time, until it reached the present state. The city's compact and dense urban structure can be traced back to Cerda's 1855 Memorandum for the Preliminary Project for the Barcelona Extension where the city began as a medieval town bounded by the sea, with a series of peripheral villages around it, and final revised 1967 General Theory of Urbanisation [8].

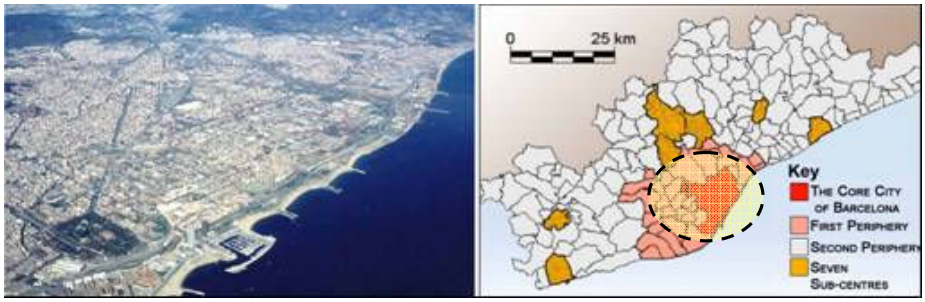

Fig. 1 (Left) *An Aerial View of the Core City of Barcelona's Mediterranean Location. (Right) Metropolitan Rings Surrounding the Core City (Left: Photo Courtesy Ajuntament de Barcelona. Right: After: Domene, E. & Sauri, D.[6], 2006, p1608.)*

However, throughout the 20th Century notable development began to take place in a concentric direction, one which is very much a mark of the 1980s and 1990s urban regeneration strategies of many cities in the Mediterranean region. Observers as Warman [9] who highlighted the relationship and juxtaposition between waterfront sites, regeneration and inner city areas. “The waterfront is now a magic ingredient quenching the desire of many companies for an environmentally pleasing workplace.” This has consequentially resulted in the urban fabric found today; with the Core City at the centre, and seven metropolitan rings surrounding it. This Core City currently covers an area of 159.8km² [10], and serves a population density of 366 people/ha [11].

3.2 The Historical Peninsula, the Greater Municipality of Istanbul, Turkey

Istanbul has as many layers of history beneath the foundation of its buildings as any ancient city. It has been the capital city of three, or perhaps four, empires, and is still shaped by the surviving fragments of Greek, Roman, Byzantine, Venetian and Ottoman Civilizations. It has Christian churches, Sunni Mosques, and Sephardic synagogues.

The Greater Municipality of Istanbul, or Istanbul as it is widely known, is a linear city located on the divide between Europe and Asia. The city extends for sixty km along the Sea of Marmara, which forms its southern boundary (Kubat, A. S). The Sea of Marmara is the inland sea that connects the Black Sea to the Aegean Sea, as shown in Figure 2.

Fig. 2 (Left) Map of Istanbul showing the Bosphorus, Golden Horn, Marmara Sea & Black Sea After: Joint Icomos/Unesco [13], (Middle & Right) Maps revealing the relationship between Istanbul as an Asian and European city, and its surrounding waters

Similar to the Core city of Barcelona, the Historical Peninsula (HP) is the city's traditional and historical centre, dating back to BC700 [12]. It also forms Istanbul's CBD. In 1985, the HP was added by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) to the World Heritage List [13].

Istanbul was founded as a Greek colony around the Golden Horn in BC700 in the area of the HP, and continued to expand under Roman, Byzantium and Ottoman rule [14]. By the 19th Century, Istanbul had evolved into an urban metropolis with the main centre located on both sides of the Golden Horn [15]. The Golden Horn, or Halic, is a 7.5km estuary, separating the HP once again [15]. By the mid-20th Century, the CBD had asserted itself in the HP and around the Golden Horn shown in Figure 2.

Istanbul covers a total area of 480, 577ha, with richness in topographical levels that have been formed by hills, valleys and river basins [16]. Approximately 40% of the city's total land area is covered in forest, comprising most of the northern areas [16]. Heavy urban expansion has occurred in the southern areas and on either side of the Bosphorus, the result of heavy migration that has taken place over the centuries [16]. The city's rapid and uncontrolled expansion has overwhelmed its available ecological resources.

The Golden Horn is said to have lost its Byzantium and Ottoman magnificence, as a result of squatter settlements that inhabited its shores during the 1950s [17]. Industrial establishments that were set up on either side during the 1960s also increased pollution [17]. Renovation projects took place during the 1980s in an attempt to integrate both sides of the HP, and to preserve the area's cultural identity depicted in Figure 3 [17, 18]. A masterplan, under the title 'Golden Horn Culture Valley Project' was drawn up to replace heavy industries and squatter elements with recreational and touristic facilities, and twenty-two parks to improve the city's destructed green network [17].

*Fig. 3 (Left) The Golden Horn before rehabilitation and (right) after rehabilitation.**Photo Courtesy Dursun Ali Codur***

The Bosphorus is important for separating the city across two continents. The Bosphorus is a 20km strait, who's eastern and western sides are covered with hills, the result of topographical

evolution [19]. The inauguration of the two bridges over the Bosphorus facilitated the decentralization of the northward CBD and laid the road for other urban regeneration projects. Similar to the Golden Horn, industrialisation and uncontrolled planning reduced the Bosphorus' natural vegetation and exquisite scenery [19]. In addition, the Strait is one of world's busiest sea lanes, as all commercial traffic travelling to and from the Black Sea must cross it [20].

An attempt at preservation began in 1971, with the 'Bosphorus Shoreline Preservation Act,' and 1973 'Old Buildings Act' [19]. These attempted at preserving and restoring natural landscapes and texture, as well as historical buildings whose architecture had been distinctive for those parts of Istanbul. These were followed by the 1983 'Bosphorus Building Act,' which enforced strict laws concerning construction particularly in frontal areas [19]. It also prohibited new constructions on plots of land reserved for traditional use, stating that these empty plots should be preserved as green areas.

4. Urban Regeneration for the Improvement of the Ecological Performance of the two Mediterranean Cities

A variety of strategies have been adopted by the Barcelona City Council, aiming at both urban regeneration and upgrading the ecological performance of the Core City of Barcelona, which is considered the city's historical centre. The historic urban regeneration carried out in the two Mediterranean cities presented in this paper is studied through an analysis of six main strategies as seen in Figure 4. However for the purpose of this papers only three of these strategies will be discussed namely; Improvement of Natural and Man-Made Environments; Enhancing Socio-Economic Equality and Social and Cultural Sustainability.

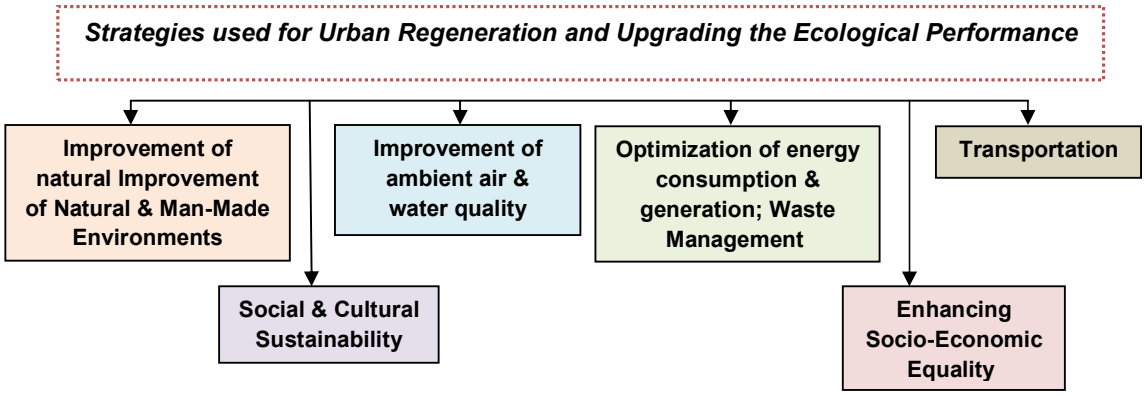

Fig. 4 Strategies that may be used for Urban Regeneration and Upgrading the Ecological Performance of Chosen Districts of the City

4.1 Improvement of Natural and Man-Made Environments

In Barcelona Significant growth in green areas has taken place between the years 1994 to 1998, as part of the Region's Strategic Plan to protect natural spaces and biodiversity, and increase the breathable areas of green spaces within the city [21]. Parks and gardens alone take up 933ha, excluding Collserola Park, and 2,822ha if included (Ajuntament de Barcelona, 2004). This provides each inhabitant with 6.2 m² excluding Collserola Park and 18m² per inhabitant if it is added [22]. The following table reveals increases in green spaces that have taken place between the years 1994 and 1998.

Table 1 Growth of the city's green areas between 1994 and 1998 in hectares (ha). From: Estadistic de la Ciutat de Barcelona, 1994-1998

	1994	1995	1996	1997	1998
Urban Green*	856.8	912.6	923.4	933.4	939.4
Trees Along Streets	84.1	79.0	79.8	81.0	82.4
Parks and Gardens	13.8	16.5	17.5	22.4	27.0
Total	**961.0**	**1014.4**	**1027.0**	**1043.1**	**1055.1**

Furthermore, being a Mediterranean city, the beaches of Barcelona are considered an integral part of the historical city of Barcelona. For this reason, the beaches located within the Core City of Barcelona undergo regular checks, under the Integral Management Programme for the Barcelona Coastal Area that was set up in 2004. This programme incorporates measures such as sand and water analysis, ecological sifting of sand and collection and recycling of waste materials found both in nearby waters and on the beaches. Moreover, environmental audits and checks are performed to ensure that environmental laws are strictly enforced.

A large part of the city council's commitment towards sustainability, involves protection and improvement of public spaces within the Core City, as man-made elements integrated within both the natural environment and the built one. Public spaces in Barcelona follow a distinct style and tradition that date back to Cerda's planning [8]. The need for development of the Core City's public spaces was initially recognised during the 1980s, and improvement began prior to the 1992 Olympic Games as discussed earlier in this chapter, in an attempt to transform Barcelona into the "City of Public Space" [23]. Consequently, entire districts, such as La Vila Olimpica, where designed, and existing urban areas such as the Raval Rambla, were further developed. The Raval Rambla continues to stand as an important aspect of Barcelonian public space design, giving priority to pedestrian activity, providing a meeting point and enhancing social interaction between citizens and tourists alike.

Istanbul covers a total area of 480, 577ha, with richness in topographical levels that have been formed by hills, valleys and river basins [16]. Approximately 40% of the city's total land area is covered in forest, comprising most of the northern areas [16]. Heavy urban expansion has occurred in the southern areas and on either side of the Bosphorus, the result of heavy migration that has taken place over the centuries [16]. The city's rapid and uncontrolled expansion has overwhelmed its available ecological resources.

Some of the most significant open spaces that can be found in the HP include the renovation projects along the Golden Horn and the Bosphorus Straits. Those renovation projects took place during the 1980s in an attempt to integrate both sides of the HP, and to preserve the area's cultural identity [17, 18]. A masterplan, under the title 'Golden Horn Culture Valley Project' was drawn up to replace heavy industries and squatter elements with recreational and touristic facilities, and twenty-two parks to improve the city's destructed green network [17].

Additions and improvements of parks and the green network along the Golden Horn can be seen in package projects such as 'Kagithane Regional Park,' the 'Sadabat Promenade Area,' the 'Halic miniature Istanbul and landscape project,' and several more, which have all contributed to the increase in urban green and open spaces in the HP [17]. Despite these additions, however, each resident of Istanbul has only 1.65m² of green space, as opposed to the optimum 10m²/person [16].

4.2 Enhancing Socio-Economic Equality

It is arguable that the success of Barcelona's economic activity and employment is related to the Olympic Games, which were held in Barcelona in 1992 [25, 26]. The Olympic Games, as well as the urban transformation that took place to accommodate them, has benefitted the city in many

ways as mentioned earlier. For example, the Olympic Village, located on the seafront, has helped provide a model of sustainable urban infrastructure and services that have been used in many areas of Barcelona. Apartment buildings constructed for the Games became quickly attractive to potential buyers later on. Easy accessibility to public facilities, health services and disabled mobility considerations may have been principal aspects that contributed to this. As a large part of Barcelona's economic viability depends largely on tourism, it is essential that the city administration both preserves and enhances valuable local resources. This is evident in measures taken by the city administration to protect Barcelona's beaches, coastal areas and heritage sites, as explained above.

Similarly in Istanbul, revitalisation projects aimed at preserving the area's historical heritage, while adding a touristic aspect to the HP's already dense and multi-functional nature [18]. Development in the HP began prior to the Second World War and continued to grow until the 1980s. Demand for office space in the HP's CBD increased during and after the 1980s and, along with renewal and revitalisation projects, the HP continued to grow [24]. These developments and revitalisation projects have therefore had a highly positive effect on the area's socio-economic performance. Istanbul's status as Turkey's main socio-economic centre has increased the city's urban build-up in recent years, particularly in the HP. Both building densities and population densities in the HP are very high, and urban blocks are separated by narrow streets, the characteristics of early Ottoman settlements [24], this is clearly depicted in Figure 5.

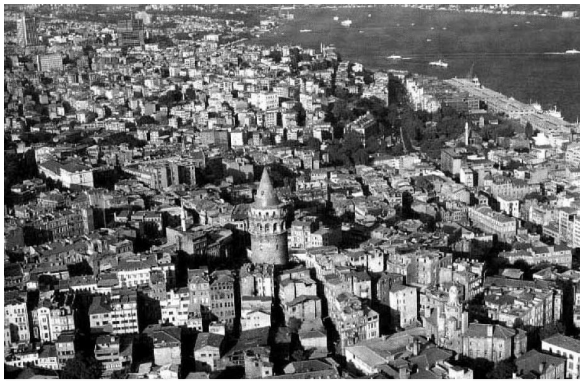

Fig. 5 *Photo depicting the high densities in the historical Galata District in the HP*
(Photo Courtesy Zekiye Yenen)

For a variety of reasons, it is difficult to determine levels of socio-equity in the HP, because of the significant changes in population between day and night hours. Eminonu, for example, is one of the HP's most thriving districts. The district hosts a daytime population of 2.5 million people, which decreases to only 50,000 people at night [12]. It is noticeable, however, that the minor population left behind at night are usually low-income workers [12]. These residents usually consist of families with a low income, who have migrated to Istanbul from surrounding regions. Facilities that serve these residents, including health services, educational facilities and basic social and cultural services are found inadequate [12].

4.3 Social and Cultural Sustainability

The advantage of social and cultural activities has a vital role in providing successful result in the competition between cities and in creating stimulating city's image [27]. Despite a multitude of definitions of sustainable development, (what it means and how it might be implemented) the concept now plays a crucial role in urban policy across Europe – not just for environmental policy, but also as a guiding principle for social and cultural policies [27]. It is the proper understanding and interpretation of the definition of sustainability by the UN "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"- the United Nations World Commission on Environment and Development [28,29] that underpins justice in all features including environmental, economic and political as well as social and cultural justice. This was adopted by the Barcelona government and highlighted within the strategies they adopted for regeneration and urban development.

Contemporary official discourses in Barcelona emphasize on sustainability (with its broader term) as one of the fundamental assets of public parks and public spaces [30]. The regeneration carried out to transform Barcelona into the "City of Public Space" [31] discussed earlier in this paper underpins a broad interpretation of sustainability, integrating social, political, and environmental

dimensions of sustainability. .

Having exerted several years on developing cultural sustainability Barcelona hosted the first Universal forum of Cultures in the year 2004. The event was organised by Barcelona City Council, the Catalan autonomous government and the Spanish Government, and was heavily supported by 186 member states of UNESCO during their 29th General Conference [32]. The universal forum of cultures has been generated in order to mobilize societal energy for the regeneration of degraded parts of the city and to develop higher standards of physical urban qualities. The cultural event hosted different themes that evolved around cultural diversity, sustainable developments and conditions for world peace. The debates and dialogues included people from all over the world with different races, backgrounds and cultures, from international students to world leaders. Over a period of four months hundreds of international mass events have been organised along side those interesting debates, ranging from exhibitions to carnival parades, music festivals and other expressions of mass communication and entertainment.

All of Barcelona's cultural energy was efficiently mobilised to create social consensus and momentum for a structural economic and spatial transformation. Those plans for cultural and physical regeneration were initiated by the public sector, which in turn is actively involving the private sectors by incentive methods and business type implementation for the regeneration plans (Competitive Metropolises). It is thus worth noting that Barcelona City has the credit of promoting a 'citizen oriented' strategy for urban planning and regeneration.

Concomitantly, it was of great pride to Barcelona that the Forum 2004 turned out to be an international arena that was a celebration of diversity, respect and coexistence, of the path that lead to the acceptance of common values, which aspires to peace all over the world [33].

Equivalent to Barcelona Istanbul has a rich social and cultural heritage. It has being a settlement centre during the different civilization periods, and has a distinct traditional urban pattern. One of the main events that put Istanbul into action is preparing for the Culture Capital title 2010 with the efforts of the Metropolitan Municipality, the Istanbul Governorship, and the 2010 European Culture Capital Coordination Board. The city has been transformed into a city of tourism with conventions, fairs, cultural events, art, and sports activities. Racing with the world's renowned capital cities in these fields, Istanbul has leaped to the 17th position, up from 49, in tourist conventions in the last couple of years.

Renewing its infrastructure in conceivably all fields, Istanbul has been applauded loud for its successful hosting of international organizations, such as the Champions League Football Final Match, Formula 1, Moto GP, and the Red Bull Air Race. Among other social policies implemented are increasing basic education level and the number of schools in the area.

It is worth noting that Istanbul opportunities lie in the existence of its coastal and culture potential that is manipulated by the Metropolitan Municipality as a tool for economic revival.

5. Discussion and Conclusion

'Urban regeneration' has become the ultimate urban policy since the 1990s. It is in this period when strategic and comprehensive planning approach in urban planning has started to be universally used in regeneration projects of many cities [2, 34]. These projects have been inaugurated to revitalise the declining ancient city centres, old industrial and harbour site, the old residential areas and diluted historical heritage sites of the cities.

The so called 'Barcelona Model' of urban regeneration is known world-wide as a 'Success Story'. This urban regeneration scheme was based on the collaboration between different tiers involving government, public and private bodies. These diverse network of actors involved political and administrative decentralization and large scale citizen participation.

It is interesting to note that the Barcelona City Council has used several strategies which have contributed towards urban regeneration of its historical city centre that were discussed in this

paper. This has solved problems that have resulted from overcrowding, pollution and environmental degradation, while preserving the Core City of Barcelona as an area whose unique identity serves as a place of memory, and forges an example for other parts of the city to follow. This is inclusive of governmental policies, strategic plans, energy-efficiency codes and laws that have recently been implemented and various City Council publications such as the Mobility Pact. Public participation had played a crucial role in the successful application of many of the strategies adopted by the City Council of the City of Barcelona. Moreover, allowing the public to have a say in the development that takes place within their city enhances their personal sense of belonging. In the case of the historic centre of Barcelona, the empowerment of its citizens and sense of belonging have had a detrimentally positive contribution towards the development and success of the urban regeneration of its Core City.

In comparison, successful aspects of Istanbul's HP can be attributed to its ancient urban structure and significant geographical location. However, fewer strategies than those used in the Core City of Barcelona have been implemented in Istanbul's HP to improve its ecological performance. Urban regeneration projects in Istanbul and its HP were initially inaugurated to promote tourism. It is worth noting that major developmental projects along with urban regeneration projects are aimed to be implemented in the near future for a comprehensive shift in the city.

The bounding edges of any district, city or even governorate should be directly related to historical, social and cultural aspects that take place in it. Cities rebuilt and keep their identities with their cultural and historic characteristics that remain constant while continuously changing on the one hand. However, even though the change is inevitable its effects need to be foreseen beforehand. The governments and public should recognize the deep connection between the historic city centre and its larger context that even might spread to the structure of the whole city. Evidently, more comprehensive approach is needed to protect the urban structure and pattern of the city as much as civil architectural artifacts in the historic centre.

Sustainable cities can partly be achieved by increasing participation in urban regeneration, planning and decision making in and around cities. Concomitantly, local awareness and ensuring public participation are important factors that contribute positively to the improvement and regeneration of any urban area. All members of the community, often representing a range of socio-economic groups, are encouraged to contribute with their ideas. As a result, citizens are empowered, and each inhabitant begins to contribute, with what little part they can, in both decision-making and in safeguarding and maintaining the architectural artefacts and beauty of their city.

Finally, the ‘Sustainable – Green Urban Revolution’ will occur through the joint collaboration of stakeholders, local community-based organisations, international organisations and governmental agencies.

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