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Conservation of Historical district in Urban Construction Operations, a Step towards Sustainable Development

Karim Moosazadeh Mehrabani / Islamic Azad University – Mehraban Branch

Karimcivil2010@yahoo.com

Historical districts are one of the most valuable elements of cities which make identity for them. Elements, buildings, formation mode and traffic networks of each historical districts reflect the social life manner of the city's inhabitants. The attention and desire of new generations to know about the life manner of their ancestors and the history of primogenitors as well as getting acquaintance of other nations with history and past life of other nations and increasing development of tourism industry make us to study the history and identifying the old neighborhoods and historical places and attempt to keep and maintain them as the heritages of the ancestors and perform our duty for next generations. With regard to time pass and disregarding the old life of the valuable buildings, lack of attention to a historical texture could lead to destruction of the culture and identity of a society. Nowadays, by increasing development of tourism industry in the world and tourism-oriented economy, restorations and resurrection of historical districts have gained more attention in most countries. Improvement and resuscitation of these districts play a great role in their dynamism and survival as well as making income via attraction of tourists. Also, it is possible to use the incomes resulted from tourism industry for restorations and development of infrastructures to reach to urban sustainable development.

Also in this article, Baku's Icheri sheher and the historical city of Lahij and Agsu in Azerbaijan Republic will be introduced as successful samples in this field.

Keywords: Historical District, Urban Construction, Conservation, Resuscitation, Tourism, Sustainable Development.

Introduction:

The proximity of historical districts and newly-built districts and the way that these two are connected to each other and also how we intervene in a historical district have always been counted as one of the most delicate decisions of official, civil engineers, and architects.

How to juxtapose a historical district with a modern district is determined through considering general policies that have been organized for the future of a city, and depending on the history of the city differs. For example, in Old City or Inner City (Azerbaijani: İçəri Şəhər) in Baku, Azerbaijan the general policy has been the modern development of city and the old district has been surrounded by fortress walls and remained completely untouched and kept its historical originality. This part of city which is sometimes referred as BakuErgi was built gradually between 11th to 19th centuries. It is located in North West of Baku gulf and is one of the best sights of Baku. In 2000 it was classified as a World Heritage Site by UNESCO.

This area of city is surrounded with walls from three sides and the other side is restricted by sea. The wall that is build around this city separates it from modern Baku. There are 5 gates on this wall which relates this area to modern part of city. The population which is living in it includes 14000 .As this city is located just near sea the climate is good, and it's a nice place to inhabit.

There are numerous architectural monuments inside Icheri sheher that each of them is traced back to a specific era. These monuments which are mostly built in Islamic, French Baroque, gothic, and classic styles are located both inside and outside the city. Inside the city there are 518 monuments including 17 mosques, one church, two grave yards, 6 caravanserais, 6 traditional bathhouses, 3 city emblems, fortress walls and 3 towers, 470houses, and 10 other monuments which are maintained separately as a historical site. These buildings have had a significant effect on Baku's city structure.55 percent of these houses were built in 19th century and 40 percent in early 20th century; however, some of them date back to 18th century and are older than other houses. There are also some private castles that trace back to 14th and 15th centuries. Icheri sheher consists of 23 alleys, 2 caravanserais, 3 springs, the bazaar, etc. the most attractive of them is Maiden Tower.

This unique complex attracts thousands of tourists every year which not only introduces Azerbaijan's culture and history but also is a big source to make money for both city and country .And this in its turn has led to city 's development in a way that all tourists are amazed. It should be mentioned that public welfare level is very high in this city.

But in a city such a Lahij historical district is not restricted by a street,so it is wellassimilated into the new districtand is in sync with it. Structures of houses of this city are divided to 3 parts: 1.old and historical buildings which are remembrances of the past. 2. Modern buildings which are built with traditional styles and materials and are identical to old houses.3. Houses which are built with concrete structures or metal structures and modern materials. In these building's facing is traditional, and there aren't tall structures. These houses are in complete agreement with city's historical and old district. The historical appearance of the city is kept.

In Lahij not only are the old buildings and historical districts kept, but also maintained of old professions such as coppersmithing, blacksmithing, tannery, saddlery, shoemaking, carpeting helped keep the old face of the city and presented it as a live museum, which in its turn attracts tourists from all over the world. And this both lets

other nations know the culture and history of this area and also helps economic development and consequently it will lead to full-scale development of city and area. When tourists see sights, they stay in hotels, eat in restaurants, buy hand crafts, and all of these eventually help employment and economic development of the area. To this end, at first, historians and experts identify regional historical professions and then support continued professions and reactivates those are in declining.

From the ancient time, Lahij has been noteworthy for tourists and businessmen. Tourism industry has been active in this city since the time of the Russian empire. After the independence of Azerbaijan this city has been significant for both local and foreigntourists. The tourists have travelled a lot to this city.The old road on the right side of the Girdiman River, which was of very low quality, is deserted and a new road with high standards on the left side of the road is built. This new road has made the traffic much easier for both tourists and local people.

The improvement of electronic and radio communication such as telephones, cell phones, and the Internet from one side, and construction of hotels, hospitals, museums, etc. and service centers from the other side have led to enhancement of city condition for its citizens.

In addition, the historical city of Agsu that is a remembrance of the Medieval is located near new city of Agsu in Azerbaijan. This old city with the effort of cultural legacy and tourism ministry of Azerbaijan republic and “MIRAS” (MIRAS Social Organization in Support of Studying of Cultural Heritage) group, which is one of active NGOs in the field of history, has been explored by archeologist, maintained, repaired, and reclaimed. Besides, a park museum was built. The reconstruction and reclamation of this historical city not only presents its history but also leads to financial improvement of this district with attracting tourists and developing archeological tourism's network; consequently, it results in improvement of city services. This historical district has been registered in cultural legacy and tourism ministry of Azerbaijan republic list in 2010. For close knowing about that type of life in this district and according to archeological excavation continuance, tourists and visitors can participate in excavation location and then obtain experience as an honorary archeologist. This causes to incense interest of tourist referring and attraction of visitors. Also with creation of regional bower and serving eastern tea and baking traditional bread in tandoor (earth oven) the tourists will cater at this archeological district. Promenading with horse around the complex and fishing in District Lake causes visitors to feel living in ancient times. All of these factors cause financial supply, infrastructure improvement and sustainable development in district.

So in three above mentioned cases the tourism industry has improved in spite of maintenance of old buildings and historical district. If we want to classify buildings that are located in historical and old districts from the view point of technical-engineering, we will have four groups: 1. Best and valuable buildings. 2. Repaired buildings. 3. newly-built building 4. Destroyed buildings and ruins.

Besides, if we want to categories them according to their function, we can have four main groups:

Active buildings which have retained their function and originality: these buildings due to consolidation and retaining their function continue their activity.

Deserted buildings that can be used: these buildings are deserted owing to slight destruction, solvable building problems, or the feeling that they are not needed, but they can be repaired with a slight effort and improvement in order to change them to buildings with new functions. They can also be repaired to come back to life cycle with the same function.

Buildings with a new function: these buildings which were used as houses, gardens, bathhouses, traditional gyms, etc. are deserted. Being valuable because of their architecture,they are amended and theyoperate as official and cultural buildings and traditional teahouses and so on. Reclamation and maintenance of these old buildings are a good step toward keeping historical buildings alive and active.

Destroyed buildings: these buildings either are evacuated because of serious destructions, or are left unused due to the lack of operation, or are changed to ruins due to the lack of maintenance in a way that are not repairable. These buildings don't have any valuable things to be kept. They should be reconstructed.

In general, before every construction in a historical district there must be a strategy in order to have a purposeful intervention. In one district not only should the body be kept, but also we must keep the sole of it. By sodoing the new texture will continue living completely independently after intervention.

Problems of providing city services in old districts and solutions:

The number of people who need each of public facilities must be determined by means of the capacity of similar facilities, numerical need level, and the type of them; facilities such as bathhouses, mosques, reservoirs, springs and aqueducts, private and semi-private places, proximity or location of small business centers in alleys and big business centers in markets, and finally main, public, semi-public, and privates roads. Type and number of facilities must be cared. The size of neighborhoods, road grading, the number of population, and distance from the main and central part of the city or neighborhood will determine the type, number, and needed size of these facilities. Some of usual problems in old neighborhoodsare:

The problem of parking space: narrow streets in some of neighborhoods, lack of parking spaces in houses, and lack of harmony in the height of house level with street level aresome of troubles people face while parking their cars.in order to solve this problem we can buy destroyed buildings and change them into multilevel parking lots.

The problem of providing gas supply in some neighborhoods: we cannot supply houses with gas in some neighborhoods andplaces. This is impossible due to numerous reasons such as impossibility of digging, or probability of causing danger. Gas problem puts the inhabitants of these places in trouble. In these sites the use of modern energy sources such as solar energy can be substituted. For example, a demand for energy supply of mosque air conditioner in archeological area (Agsu) have requested from Azerbaijan republic- state agency on alternative and renewable energy sources organization.

The security problem in some neighborhoods: some alleys due to narrow and dark streets, and presence of ruins in these districts might not be safe.in order to solve this problem we can make use of closed circuit cameras or guards. Also with culture improving by NGOs and cultural organizations, regional people cooperate in making easy to protect and maintain these historical districts.

the problem of narrow streets and inaccessibility of vehicles to these alleys: sometimes narrow width of these streets, and impossibility of traffic flow especially for old people, patients, and paralyzed citizens are very problematic .to solve this problem we can buy some taxis and create a taxi system inside the old district, that is special for these places. The other solution can be sale of these taxis to inhabitants with special loans. This idea was put into test in Icheri Sheher in Baku, Azerbaijan.

The problem of presenting some city services such as firefighting and medical emergencies: sometimes in some events like natural phenomenon and accidents in

old districts due to the narrow streets, and impossibility of being on time for firefighters some irrecoverable catastrophes happen. In this case creating some small stations which can present first aid services in local clinics, building small fire stations, installing hydrants in alleys, or providing the alley with some mobile firefighters and doctors can be solutions to this problem.

Conclusion:

Three successful examples were discussed in this paper to show how we can maintain historical districts in spite of providing city services, producing new job opportunities for inhabitants, and attracting tourists in order to have a constant source of earning money by means of archeological tourism industry. The attention should be attributed to this point that although we must revive our cities and benefit from temporary incomes, we must keep and maintain our historical districts while providing city services, use money from tourism industry and tax of jobs that are offsprings of this industry in order to provide constant financial sources to have enough money for developing infra structures and reach sustainable urban development.

Suggestions:

1. Paying attention to the reasons of erosion and destruction of historical cities.2.paying attention to valuable city nucleus in stages of city development. 3. Benefiting from modern technology in the field of repairing. 4. Study of destroyed and old buildings in order to repair them. 5. Paying attention to topics such as architectural revival from art-architectural points to technical-constructional points. 6. Paying attention to popular and modern methods of resuscitation 7.paying attention to valuable city nucleuses in different stages of city development. 8. Paying attention to city problems such as: building public parking spaces, clinics, emergency service centers, 9. Creating logical relation between old and new districts. 10.economic support of new sections from economic facilities of old sections 11.paying attention and retaining cultural and local values of district along with development of tourism industry. 12. Giving subsidies to families who are interested in reviving and improvement 13.paying attention to development of tourism industry and creating some tourist service centers in order to provide permanent financial sources.

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The provision of public recharging infrastructure for Electric Vehicles in North East England – is there life after subsidies?

Josey Wardle [1,3], Dr Yvonne Hübner[1], Prof Phil Blythe[1], Dr Jane Gibbon[2]

[1]Newcastle University, Transport Operations Research Group (TORG), Civil Engineering and Geosciences, Newcastle Upon Tyne, NE1 7RU, UK, email: j.wardle3@newcastle.ac.uk

[2]Newcastle University Business School, 5 Barrack Road, Newcastle upon Tyne, NE1 4SE, UK

[3]Zero Carbon Futures, SASMI, Washington Road, Sunderland, SR5 3HE, UK

1. ABSTRACT

Since 2010 over 1,100 electric vehicle (EV) charge points have been installed in North East England (NE) through the UK government subsidised Plugged in Places scheme. In parallel, over 65,000 EV journeys were studied through the Switch-EV trial. Public subsidies covering the operation of EV recharging infrastructure are now coming to an end in the region, which is likely to affect EV drivers recharging behaviour. It is however unlikely that the introduction of fees for recharging at a level which EV drivers are willing to pay will enable infrastructure owners to recoup their costs using conventional business models. Therefore making the financial case for the provision of public recharging infrastructure is still difficult. A social and environmental accounting framework may provide crucial information to enable organisations to understand the wider value provided by recharging infrastructure and its services, thereby opening up alternative business models. This paper gives an overview of the findings from these two projects and comments on the early changes observed as a result of the reduction in subsidies.

2. BACKGROUND

North East England (NE) is at the forefront of low carbon vehicle development, with Nissan manufacturing both the Nissan LEAF and Lithium-ion batteries at its Sunderland plant. Since 2010, the region has installed a comprehensive recharging infrastructure in parallel with a number of EV trials, and has become a major hub for vehicle and battery research and development, manufacturing, and training facilities throughout the EV supply chain.

The EV recharging infrastructure has been installed through Plugged in Places (PIP), a government funded programme operated by the Office for Low Emission Vehicles (OLEV) which has awarded funding to 8 areas within the UK in order to establish EV recharging infrastructure to seed the uptake of low carbon vehicles. The aims of the programme are to feedback the experience gained by creating and operating EV recharging infrastructure into future policy decisions at both regional and national

levels. This includes the development of standards, evaluation of technologies, harmonisation of local incentives, understanding users' behaviour and its impact upon the infrastructure.

The second key element of the NE's electric vehicle activity involved 44 EVs trialled under the Technology Strategy Board's (TSB) Ultra-low carbon vehicle demonstrator (ULCVD) programme. The Switch EV trial brought together a consortium of vehicle manufacturers, data collection experts and project managers to deliver 44 new and innovative full- electric production vehicles onto NE roads.

3. METHODOLOGY

3.1 **The NE PIP project**.

North East England's Plugged in Places (NE PIP) project, created an integrated recharging network for EVs spanning a region of 8,600 km^2 between April 2010 and June 2013. This recharging infrastructure enables EV journeys to become feasible across neighbouring regions in the UK, Scotland and Europe. The project installed 1,138 charge points in public places, workplaces and in the homes of EV drivers across the region. The estate includes a combination of 3, 7 and 22 kW AC charge points, and the NE was the first UK area to create a regional network of 50 kW DC rapid charge points which enable EVs to be recharged to 80% in just 30 minutes. 12 rapid chargers were installed by the NE PIP project at key staging points across the region.

Potential hosts were attracted to have charge points installed on their property by various levels of grant incentives covering equipment and installation costs. Charge points have consequently been installed in locations in accordance with demand from interested hosts. In exchange for this grant funding, each host provided free electricity and free parking to EV drivers during the three year trial period, which ended in June 2013. The charge point hosts now own the NE's EV recharging infrastructure which forms the NE recharging estate. All publically accessible charge points were operated by a single network operator, Charge Your Car (CYC)[1]. CYC was funded to provide access to the entire NE recharging estate, as well as to provide customer service and charge point information via a live availability map on a dedicated website. EV drivers joined the NE PIP's CYC membership scheme at a cost of £100 per year or £10 per month, in order to receive free electricity and parking whilst recharging, access to the website to plan their journeys and their own recharging records. In addition to this public and workplace infrastructure, the project also installed over 400 domestic chargers with captive cables for EV drivers in the region to use in their own home environment.

3.2 Data Collection from charge points

CYC members were issued with their own personal radio-frequency identification (RFID) card which had a unique tag identifier attached to it, enabling them to access all makes of public and workplace EV charge points across the region. All charge points had their own unique identifying code denoting:

- the charge point type (power delivery rating, single or double outlet),
- location type (Public = on street, in a public or commercial car park, Workplace, Rapid)
- location identification number (latitude & longitude coordinates).

All public and workplace charge point activities were then recorded by the Back Office system managing the charge point network for the project, creating a charge point management system (CPMS). For each charging activity, the tag id, the transaction start and end date and time and the energy drawn were then transmitted via the GSM network to the Back Office operating the CPMS. Both charge point hosts and EV drivers had access to their own charging data and history via a Members Portal within the CPMS.

3.3 Switch-EV trial

The Switch-EV trial ran from November 2010 until May 2013. The vehicles were fitted with data loggers that provided a range of driving and vehicle performance data, GPS and a time stamp. Selected data points were collected and analysed at Newcastle University and in parallel, driver attitudes towards driving and recharging EVs were gathered through questionnaires and focus groups. The two sets of data were then correlated to explore trends, changes in driving and recharging behaviour, general attitudes towards EVs, recharging and key issues such as cost. Most of the Switch EV drivers were also members of the CYC scheme and used the recharging infrastructure created by the NE PIP project.

Over the course of the Switch EV project, 192 participants provided answers to a pre-trial questionnaire and 101 provided answers to the post-trial questionnaire. In addition, 60 participants attended 12 focus groups; 12 individual exit interviews and 10 pre-trial interviews were conducted in order to understand drivers' attitudes towards EVs and their recharging infrastructure. Quotes from the drivers that have been reproduced from their questionnaire reposes or captured from the oral record of the focus groups are presented in quotes: "…".

3.4 Data Collection from EVs

The Switch-EV project collected hard data on the vehicles derived from the controller area network (CAN) bus of the vehicle and transmitted to a secure database through wirelessly enabled data loggers fitted within the vehicle. Those data were overlaid with GPS and time stamps derived from an additional logging unit in the vehicle. Data collected included:

- Time/date – start, end and duration of events (trips and recharging events)
- Distance travelled
- Energy used per trip
- Energy transferred per recharge
- Recharging location (home, work, public charging infrastructure)

4 RESULTS

4.1 NE PIP project – public recharging results

The composition of the 737 public and workplace charge points in NE PIP estate is illustrated in Figure 1, broken down into three location categories – Workplace, Public and rapid chargers. Public chargers were then subdivided into On-street, Publicly owned car parks and Commercially owned car park locations for further analysis.

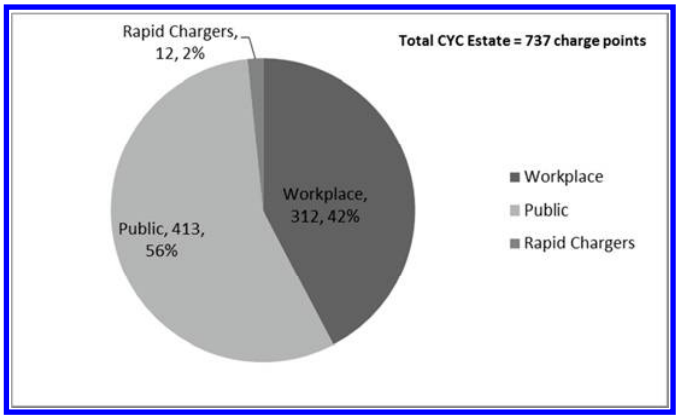

Figure 1 NE PIP Estate charge point composition by location type, June 2013.

120 hosts own the public and workplace charge points making up the NE PIP estate. However, only 17 of these hosts own more than 10 charge points each, totalling 61% of the estate. The majority (71%) of NE hosts own 2 or less charge points. The main hosts are the 12 Local Authorities in the region who together own a total of 48% of the total estate. The balance of 401 charge points consists of domestic charging units installed in the homes of EV drivers in the region.

The estate of Public, Workplace and Rapid chargers has delivered over 43,000 recharging transactions and over 311 MWh of energy to EV drivers up to the end of 2013. The proportion of transactions broken down by location category is shown in Figure 2, and the energy delivered is displayed in Figure 3.

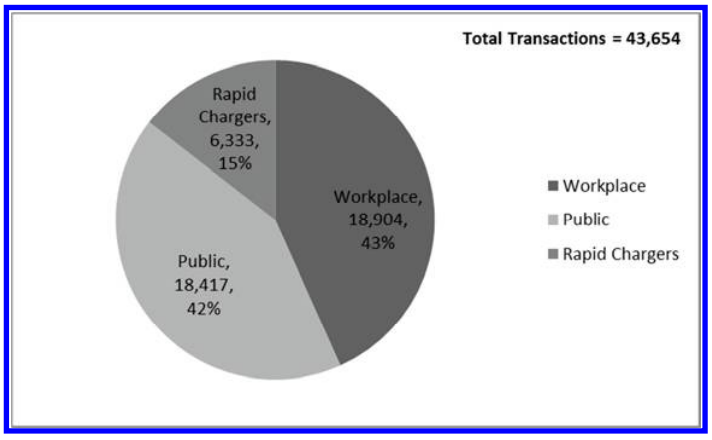

Figure 2 Recharging Transactions delivered.