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CIVIL AND ENVIRONMENTAL ENGINEERING 8 (2017) ISSN: 2081-3279 BUDOWNICTWO I INŻYNIERIA ŚRODOWISKA

THE TECHNICAL INFRASTRUCTURE DETAILS IN THE OLD TOWNS IN SPAIN

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Abstract: Historic urban cities in most European countries are a very important evidence of the past life style. The cultural heritage of the last generations should be available to as much people as it is possible to give them information about the national history, art and culture. Nowadays people expectation for indoor climate and technical equipment are much higher than several years ago. It makes buildings' owners to modernize them, but in a case of the historical parts of towns it could be difficult from a technical point of view or the result would reduce the architectural quality of the object. The paper shows the selected examples of technical improvements done in Spain.

Key words: architecture, details, cultural heritage; architectural evaluation, technical progress.

1. Introduction

In Europe, historic buildings account for over 25% of all buildings (Moran et al., 2012 and 2014). The changes in society, the discovery of the world of technology and the development of civilization result in much higher expectations of people using buildings than it was a few hundred or even a few years ago. Currently, the standard equipment are cold and hot water systems, drainage, heating, and in countries with warmer climates an air conditioning system as well. One of the most important aims of historical urban modernization is to make changes in the most invisible way and not losing its historical appearances (Niedzielko, 2014). The problem of old buildings conservation was discussed in some papers. İpekoğlu (after Ascione at al., 2011 and 2014) noted the importance of the conservation together with cultural, social and economic aspects, because it is necessary to consider all factors affecting towns (or sections of towns) style. The law problems with conservation of the historic parts of English cities were described by Townshend and Penlebury (2014).They noted the role of experts working on conservation and public engagement to avoid mistakes. Wesołowski (2007) showed that in many towns the problem with gutters is obvious. Some pipes used to remove rain water from roofs are located in well seen places, because they are not adopted to building walls, their colors are different and they are often located too far from facades. In Celadyn's (2012) opinion architectural details are nowadays more or less integrated with the building. Graham et al. (2000) and Graham (2002) noted that heritage conservation is defined within cultural and economic practice and exists in a real environment. Some authors paid attention to the economic factor (Elsorady, 2012; Teisdall and Heath, 1996) of old towns modernization. The conservation of historical buildings should be done without significantly deteriorating their conditions (Elsorady, 2012). In some papers authors mentioned (Çetina and İpekoğlu, 2013; İpekoğlu et al., 2007; İpekoğlu, 2006) that the climate of each locality was unique and had to be considered before the architectural design, new material use and restoration. Although Todorović (2012) presented optimization of mixed, natural and mechanical ventilation integrated with architectural modeling and HVAC systems operation offering an enormous potential for energy saving integrated renovation. But he also highlighted that it was impossible to reach sustainability without harmonious interdisciplinary interacting, without balance between materiality and spirituality, science and art, technology development and cultural and other human values improvement, without ethics of sustainability. However, historic buildings have a significant cultural value and they were built with technologies and materials that promote fabric breathability. It is necessary to ensure that the modernization from a set of proposed alterations are significantly higher than any actual or perceived reduction in loss of built heritage (Moran et al., 2014).

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The study showed that important results in terms of reduction of the energy consumption for building cooling can be achieved even when the energy retrofit of heritage buildings is carried out using modern technologies that are able to improve the building envelope performance without altering the architectural and artistic merit of such buildings (Ascione et al., 2014).

This paper shows how the elements of modern infrastructure fit to historical parts of selected towns (Madrid and Cordoba) in Spain.

2. Historical parts of Cordoba and Madrid

Visiting Cordoba Old Town and Madrid Center it is possible to see a lot of technical elements added last years to improve buildings' users comfort. Unfortunately most of them is highly visible and they influence of a total view of the historical buildings. Because of the fact that climate is really warm the air conditional systems and ventilators were mounted quite often.

Walking along the old walls of the town, near the castle of the Christian Monarchs in Cordoba one can see big units used for an air conditioning system (Fig. 1). Figure 2 shows the ventilator on the tower of old Moorish castle built over the former Roman gate. Fortunately, this equipment is shown only to visitors of the museum and the view point on the top of the tower, although even for them the view is contrary to the atmosphere of this place. A facade as a whole is of course the most important part of the object, but it should be noted that all elements like architectural details and technical equipment also determinate the artistic expression of the building.

In Madrid some buildings' owners try to put outside units in places not available to most tourist, and only inhabitants of buildings located opposite them could see solar panels through their windows (Fig. 3-4), while the front facades still look stylish. They were renovated and their character was determinated by the architecture details like balconies which gave the object look typical to the times it had been built. Moreover we could observe some television antennas and solar collectors on the roofs, which disturb the expression a little bit, but they are necessary nowadays and it could be difficult to find better place for them. Cities must change because of the technology progress but they also express their times, especially in the centers.

Fig. 1. The conditioning units on the castle's wall (photo K. Gładyszewska-Fiedoruk).

Fig. 2. The ventilator on the tower of old Moorish castle (photo K. Gładyszewska-Fiedoruk).

Fig. 3. The front façade of the hotel (photo D.A. Krawczyk).

Fig. 4. The back façade of the hotel (photo D.A. Krawczyk).

The conductors are also installed outside the buildings, but in some cases they are painted to the color of facade (Fig. 5) what makes them out of eyeshot. Unfortunately in most cases they look really strange on historical facades (Fig. 6).

Fig. 5. The conductors on the façade in Cordoba (photo K. Gładyszewska-Fiedoruk).

Fig. 6. The conductors and other pipes in Madrid (photo D.A. Krawczyk).

It should be noted that all manners of street sink basins and inspection chambers (of gas, water, telephone and electrical systems) located on the Old Town in Cordoba are integrated into the environment very well (Fig.7). The tourists walking the street often do not mention them at all and they could pay attention to the historical buildings, monuments and feel unique atmosphere of the historic space. They seemed to be architectural details, maybe not as unambiguous as in ancient times.

Fig. 7. The manners of street sink basins and inspection chambers (photo A. Rodero Serrano).

The street lamps are mostly the restored version of old ones and fit perfectly with the place where are located (Fig. 8-10).

Fig. 8. The illumination of plaza in Cordoba (photo D.A. Krawczyk).

Fig. 9. The street lamps in Cordoba (photo A. Rodero Serrano).

Fig. 10. The street lamps on the ancient bridge in Cordoba (photo K. Gładyszewska-Fiedoruk).

Only in the case of the Roman Bridge built in the 1-st century BC the illumination was changed during its renovation. Now all the lamps are not as high as before and remind light cubes staying on both sides of the bridge (Fig. 10). In fact they are not well seen during the day and at night they give a nice, stylish light that enables emphasize the beauty of the object.

The form and location of the garbage bins are more inconclusive. There are some very modern units on the streets of Cordoba and Madrit Center. The garbage bins which are installed in buildings walls (Fig. 11) look quite good, but the units staying on the street (Fig. 12) in authors' opinion interfere with the historical atmosphere of place.

Fig. 11. The garbage bins in Cordoba (photo K. Gładyszewska-Fiedoruk).

Fig. 12. The garbage bins in Cordoba (photo K. Gładyszewska-Fiedoruk).

3. Conclusion

During visits in the historical parts of Spain cities we can see a huge attention of designers and contractors for corporation between modern equipment which is necessary for people living or visiting these places. Some of the elements are based on the forms and color of the facade of the building and the interior of the area. The others could be seen only after approaching the building or sidewalk. Unfortunately there are also some places where administrators or owners forgot about the importance of consistency of quality of the building and its surroundings. The introduction of new media technologies need not disturb a historical and individual character of the objects if the places want to stay well worth seeing for new generations.

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Acknowledgements

This scientific project was financed within the framework of science research funds at Bialystok University of Technology S/WBIIŚ/4/2014.

The research was conducted under the cooperation program between Bialystok University of Technology and School of Engineering Sciences of Belmez, University of Córdoba for years 2015-2020 (The possibility of the renewable energy sources usage in the context of improving energy efficiency and air quality in buildings and civil constructions).

Virtual and Intensive Course Developing Practical Skills of Future Engineers (VIPSKILLS) Erasmus+, Number of the Grant Agreement 2016-1-PL01-KA203-026152.