Education in the Landscape of Historic Urban Systems from the UNESCO World Heritage Lists

Mariusz Antolak¹

¹Department of Landscape Architecture, Faculty of Environmental Management and Agriculture, University of Warmia and Mazury in Olsztyn, Address: Prawocheńskiego str. 17, 10-720 Olsztyn, Poland

mariusz.antolak@uwm.edu.pl

Abstract. Education in space is usually associated with nature and takes place in educational paths, in botanical and zoological gardens and other similar spaces. However, education takes place in the open landscape also in other fields. One of them is architecture and urban planning. The aim of the work is to present the results of the research on the issue of education in the landscape of the historic urban systems and discussion on the phenomenon of open space education. 10 objects from Bulgaria, Cyprus, Ireland, Chile, Kenya, Seychelles and Cape Verde inscribed or proposed for inclusion on the UNESCO World Heritage List were selected for the analysis. The article presents a case study of representative facilities - historic urban systems of towns, villages, concentration camps and mission settlements. The content of the information boards located in these places was analysed and the basic information about these objects was summarized in a tabular form. A catalogue of examples of design, exhibition and educational solutions was prepared. Despite the fact that these places have not been inhabited for a long time, in most cases, they are still lively and are visited by tourists from all over the world. The way of spatial development of the analysed objects is diverse and usually consistent with the surrounding space. The content presented on the information boards is, however, clichéd and boring, and the tourists are not willing to acquaint with them. The research shows that the old urban layouts have a great tourist potential. The greater number of tourists poses a threat to the historic systems, but it is also an opportunity for the more effective society education in the field of architecture and urban planning. Tourists expect modern forms of content presentation, and knowledge is most easily absorbed in practice - in the open space. Presentation of too much information is not recommended, and the selection of information materials should be consulted with the potential users of these facilities.

1. Introduction

The education has long ceased to be the privilege of the few, becoming ubiquitous, and some of its stages are compulsory [1]. There has been an increase in the popularity of lifelong learning and extramural education. In many countries, e.g. Great Britain, Germany and the USA, a pedagogical approach called “outdoor education” (OE) is gaining adherence – this being an organised process of learning through independent experience and experimentation. “Forest kindergartens” are another increasingly popular option, allowing parents to send their children from the cities to learn and develop in a natural environment. Informal education is generally considered to be a kind of learning which continues in every part and phase of an individual’s life and usually occurs outside a formal educational establishment [2]. Evidently, people enjoy learning in the countryside. It does not matter
what material is being presented, as long as it is interesting enough to capture the attention of a sufficiently large number of passers-by. Examples of the subject matter which may be presented in an outdoor space are architecture and urban studies. The remains of historic monuments in various states of preservation may be particularly interesting. Drawing attention to inconspicuous remains of old urban systems and architectural structures may engage the tourists’ skills of observation and learning [3]. Oftentimes such objects are visited on an individual basis and, in such cases, self-education can be aided by various educational devices. The most popular of these are information boards, which are the subject of this article.

Information boards at heritage tourism sites play an important role in tourist self-education [4, 5]. Information from such boards is retained better with proper typography (regarding size and font) and vividly coloured layout and photographs, compared to boards lacking such visual attractiveness (i.e. colours and graphics). Visual information which is well-designed and unique significantly bolsters the attractiveness of the message, keeps the viewers’ attention for longer; improves the amount of knowledge being retained and facilitates recall over a short time. Furthermore, such designs are much more noticeable in the surroundings [6]. A well-designed visual message may inspire the recipients to broaden their knowledge, as well as to engage in promoting and implementing the message itself [7]. Importantly, the message carried by the educational devices should be contained in a form which is simple, legible, attractive, and which requires little effort for the target group to absorb. The text should not exceed 70 words per board [8]. Unfortunately, in many cases the material presented on the information boards is poorly considered and dull, failing to make use of the educational potential of this form of communication.

2. Purpose and scope of the study
The aim of the work is to present the results of research on the issue of education in the landscape of historic urban systems and discussion on the phenomenon of open space education. 10 sites were randomly selected for the study:

Sites inscribed on the UNESCO World Heritage Site list:
1. Choirocoitia (Cyprus),
2. Paphos Archaeological Park (Cyprus),
3. Skellig Michael (Ireland),
4. The bird-man village Orongo in Rapa Nui (Chile),
5. Humberstone, Santa Laura (Chile).

Sites submitted to the UNESCO World Heritage Site list (Tentative List):
6. Nicopolis ad Istrum (Bulgaria),
7. The Céide Fields (Ireland),
8. Ruins of Gedi (Kenya),
9. Mission Ruins of Venn's Town (Seychelles),
10. Camp of the Slow Death, Tarrafal (Cape Verde).

The article presents a case study of representative facilities - historic urban systems of towns, villages, concentration camps and mission settlements. The sites were inventoried from January 2015 to December 2018 (Kenya - January 2015, Ireland - August 2015, Cape Verde - April 2015, Seychelles - March 2016, Cyprus - January 2017, Bulgaria - June 2017, Chile - November/December 2018).

3. Methodology
Photographic documentation of each site was performed, along with a description of its spatial layout, focusing specifically on educational value. Beyond that, participant observation was conducted,
investigating the behaviour of tourists visiting the studied sites. The last element of the study was a search of relevant literature in local libraries and the Visitors Centres.

116 information boards have been inventoried at the studied sites. Half of these (58 boards) were selected for a detailed analysis, which included digitising and vectorising the graphics and separating them into the following categories: maps and plans, figures, texts, pictures and background. Next, the percentage of each category was calculated. The schematic of the process is shown in Figure 1. Finally, the results were summarised and the collective mean percentages for all sites were calculated.

The studied sites are characterised in a table which includes each object’s official UNESCO name, country of location, date of inscription or date of submission to the UNESCO lists and the historical period of their origin. It also indicates whether the site possesses a Visitors Centre and accounts for the number of information boards it displays, grouped into intervals of: 0–5, 5–10, 10–20 and more than 20 boards. Other categories included in the analysis were the language of the signage, as well as the proportions of various elements divided into: maps and plans, figures, texts, pictures and background. Data is accompanied by a brief description of the site and of its unique elements, along with one photograph per site.

4. Characteristics of the sites analysed
The sites analysed in the study originate from various periods and represent various cultures. The oldest objects on the list include: Choirocoitia (7th - 4th B.C.) (Figure 2), Paphos (4th B.C.) (Figure 3) and The Céide Fields (~3500 B.C.) (Figure 8). Decidedly younger objects, originating in 18th–19th century AD, include: The Bird-Man Village Orongo in Rapa Nui National Park (Figure 5) and Mission Ruins of Venn's Town (Figure 10). Humberstone (Figure 6) and Santa Laura Saltpeter Works also date
back to the 19th century. The youngest and best-preserved site is the Camp of the Slow Death in Tarrafal (Figure 11), built in 1936. These sites present different amounts of information in their spaces. The best displays are located at Paphos and Humberstone and Santa Laura, each containing a large number of information boards (over 20). Furthermore, some boards in those displays are supplemented with descriptions in braille. The least information at the site is displayed at: Skellig Michael (Figure 4), Camp of the Slow Death in Tarrafal and The Céide Fields. Information boards are placed here mainly at Visitors Centres. Typical Visitors Centres are present in only three of the analysed locations – in Ireland and Chile. Locations in Kenya, Bulgaria, and Cyprus have only small ticket offices, while most of the information is displayed throughout the grounds. Predominantly, in all analysed sites, these are multilingual boards in English and French apart from the national language. Only in Kenya and Ireland do the boards contain exclusively English. Most sites had unique characteristics. In Kenya, city ruins can be viewed from a platform suspended on a tree. Sites in Kenya and the Seychelles, apart from traditional information boards, also display small plaques with descriptions of local plant species. In Orongo, displays provide information about the current level of UV radiation. Extended characteristics of the analysed sites are presented in Table 1.

Figure 2. Choirocoitia (Cyprus).
Source: M. Antolak, January 2017

Figure 3. Paphos Archaeological Park (Cyprus).
Source: M. Antolak, January 2017

Figure 4. Skellig Michael (Ireland).
Source: M. Antolak, August 2015

Figure 5. The bird-man village Orongo in Rapa Nui (Chile). Source: M. Antolak, December 2018
Figure 6. Humberstone (Chile). Source: M. Antolak, December 2018

Figure 7. Nicopolis ad Istrum (Bulgaria). Source: M. Antolak, June 2017

Figure 8. The Céide Fields (Ireland). Source: M. Antolak, August 2015

Figure 9. Ruins of Gedi (Kenya). Source: M. Antolak, January 2015

Figure 10. Mission Ruins of Venn's Town (Seychelles). Source: M. Antolak, March 2016

Figure 11. Camp of the Slow Death, Tarrafal (Cape Verde). Source: M. Antolak, April 2015
Table 1. General characteristics of the analysed objects

| Number | Name                        | Country | Date of Inscription/Date of Submission | Period of origin | Visitors Centre | Number of educational boards | Multi-lingualism | Educational boards analysis | Distinctive elements |
|--------|-----------------------------|---------|----------------------------------------|------------------|-----------------|----------------------------|------------------|----------------------------|---------------------|
| 1      | Choirocoitia                | Cyprus  | 1998                                   | 7th - 4th B.C.   | No, Only Ticket Office | 10-20                     | Greek, English, Braille | maps, plans: 14,9% figures: 14,9% texts: 29,5% pictures: 16,5% background: 24,2% | A demonstrative reconstruction of selected buildings |
| 2      | Paphos                      | Cyprus  | 1980                                   | 4th B.C.         | No, Only Ticket Office | >20                       | Greek, English, Braille | maps, plans: 29,9% figures: 2,4% texts: 25,3% pictures: 1,5% background: 40,9% | Elevated platforms enabling observation of the system from a height |
| 3      | Skellig Michae              | Ireland | 1996                                   | 950-1050 A.D.    | Yes Outside the island | 0-5                       | English                  | maps, plans: 0,0% figures: 12,7% texts: 42,2% pictures: 0,0% background: 45,0% | Limited and difficult access |
| 4      | The Bird-Man Village Orongo in Rapa Nui National Park | Chile | 1995                                   | 18th - 19th A.D. | Yes | 5-10 | English, Spanish | maps, plans: 8,3% figures: 5,6% texts: 18,3% pictures: 7,6% background: 60,2% | UV radiation information boards |
| 5      | Humberstone and Santa Laura Salt peter Works | Chile | 2005                                   | 1872 A.D.        | No, A lot of museum exhibitions | >20 | English, Spanish, Braille | maps, plans: 10,5% figures: 6,7% texts: 31,8% pictures: 3,1% background: 47,9% | A historic village of ceremonial nature named Orongo is located at the Rano Kau volcano. Fifty-four semi-subterranean stone-houses of elliptical floor plans complement this sacred place, profusely decorated with petroglyphs alluding to both the man-bird and fertility. This cult would see its end in the middle of the 19th century. |
This urban system contains over 200 former saltpetre works where workers from Chile, Peru and Bolivia lived in company towns and forged a distinctive communal pamponos culture.

### The Ancient Town of Nicopolis ad Istrum

| Location   | Date          | Rules | Ticket Office | Language          |
|------------|---------------|-------|---------------|-------------------|
| Bulgaria   | 01/10/1994    | No, only ticket | 5-10 Bulgarian English |

The classical town was planned according to the orthogonal system. The network of streets, the forum surrounded by an Ionic colonnade and many buildings, a two-nave room later turned into a basilica and other public buildings have been uncovered (Figure 7). The rich architectures and sculptures show a similarity with those of the ancient towns in Asia Minor.

### The Céide Fields

| Location   | Date          | Rules | Ticket Office | Language          |
|------------|---------------|-------|---------------|-------------------|
| Ireland    | 08/04/2010    | A ticket only | 0-5 Irish English |

The Céide Fields comprises a Neolithic landscape consisting of megalithic burial monuments, dwelling houses and enclosures within an integrated system of stone walls defining fields. The significance of the site lies in the fact that it is the most extensive Stone Age monument in the world and the oldest enclosed landscape in Europe.

### The Historic Town of Gedi

| Location   | Date          | Rules | Ticket Office | Language          |
|------------|---------------|-------|---------------|-------------------|
| Kenya      | 12/02/2010    | No, only ticket | 5-10 English |

Gedi was a small town built entirely from rocks and stones, which was inhabited by Swahili people of East Africa. This historic town date back from the 15th century, and through careful preservation most of the original foundations can still be seen today. Stone "pillar tombs" are a distinctive type of Swahili Coast architecture found at Gedi as well (Figure 9).

### Mission Ruins of Venn's Town

| Location   | Date          | Rules | Ticket Office | Language          |
|------------|---------------|-------|---------------|-------------------|
| Seychelles | 01/02/2013    | No    | 10-20         | English French    |

It is one of the most historically and culturally meaningful sites in Seychelles. Its importance lies not only in the fact that its ruins bear testimony to an important phase in Seychelles history but its location itself, the landscape within which it exists, decidedly well-chosen by the missionaries to set up Venn's Town, is a heritage worth noting. The ruins consist mainly of traces of foundations of the 5 buildings.

### Camp of the Slow Death, Tarrafal

| Location   | Date          | Rules | Ticket Office | Language          |
|------------|---------------|-------|---------------|-------------------|
| Cape Verde | 15/03/2016    | No    | A lot of museum exhibitions | Portuguese English |

Camp of the Slow Death in Tarrafal was a prison camp in the Portuguese colony of Cape Verde. The penal colony was established by the Portuguese dictator António de Oliveira Salazar following the outbreak of the Spanish Civil War in 1936. It housed opponents to Portugal's right-wing authoritarian regime. Due to the harsh conditions, at least 32 political prisoners died in the camp [9].
5. Analysis of information boards
An analysis of 58 boards yielded percentages in which various elements were displayed (Figure 12). Five basic elements were differentiated: maps and plans, figures, texts, pictures and background.

**Background.** The background takes up the greatest surface of the analysed boards, up to 42%. On 90% of the boards, the background is solid (40% white, 50% other colour or colours). 10% of the boards had backgrounds which were varied, multi-coloured or patterned.

**Texts.** Various types of text took up 29% of the surface of the analysed boards. All of the boards contained text, including larger passages functioning as captions and legend. Some of the boards included plaques with braille text, while some were multilingual. The information given by the text pertained mostly to the histories and descriptions of the relevant objects.

**Maps and plans.** Cartographic materials were displayed quite often and took up a large portion of the board if present (on average 15%). They were found on 24 of the analysed boards (41%).

Pictures were markedly less prominent, taking up only an average 8% of the surface. These were present on 22 of the analysed boards (38%). They mainly present historical aspects of the studied sites or document works on their description and reconstruction.

The surface area of figures is even smaller – only 6% of a board on average. However, they appear on as many as 40 boards, which amount to 69%. They depict various schematics and graphs, but also logos, infographics and QR codes.

The informational boards can be divided into: prohibiting and warning, informing, educational, cartographic and directional. Considering the size, the boards can be divided into: large - vertical, medium - aslope, small - "tacked".

**Figure 12.** The percentage share of individual components of the educational boards

6. Discussion
Although the sites studied represent valuable and varied urban systems, little is included in the contents of the boards, focusing instead on information regarding history or archaeology. What is lacking are the points of interest, a type of content most appreciated by tourists. One of the most popular informational elements concerning urban studies education are boards containing analyses of
Some of the analysed sites had no educational boards (The Céide Fields), opting instead for museum expositions and displays at Visitors Centres. This allowed the urban structures to avoid informational chaos. The analysed boards exhibited an insufficient proportion of graphical elements to text (which was 1:1). Placing translations of texts on information boards is a sound solution, especially for sites visited by large numbers of foreign tourists. Board text often strays into side topics, such as recognising plant species (Venn's Town, Town of Gedi). A few objects were partly adjusted for persons with various kinds of disabilities. Select boards had plaques with the braille script, but most signage was not compliant with the principles of universal design (too small font sizes, no QR codes with translations for the deaf, etc.). In addition, some boards were not adapted to the local atmospheric conditions and quickly deteriorated (faded text, corrosion, cracking). In countries with a hot climate, boards should not be located in full sunlight, since that diminishes the chance of them being read. During field observations, not one person was observed to acquaint themselves with the full content of the information boards. On the other hand, numerous instances of vandalism were noted, which points to the need for further education of societies. Inscription on the World Heritage List results in an increased number of visitors, which can hasten the degradation of some objects. Especially prone to degradation and destruction are sites which occupy a large area, which makes it difficult to supervise visitors.

Architecture and urban studies education in the field can be effectively conducted using information boards. However, there is room for improvement in the variety of contents and quality of graphics which these aids display. Good examples are the three-dimensional boards which accompany miniatures of the objects. This adds value in terms of universal design, constituting an accessibility measure for the blind and visually impaired (Figure 13). The contents of the boards should be enriched with architectural schematics and other figures, describing their individual elements with expert vocabulary (Figure 14). Designers should avoid ready-made templates and attempt original designs fitted to the particular site. The use of QR codes is an interesting solution, allowing access to multilingual contents for persons with various disabilities. An ideal case is free internet access being made available for visitors on site. An interesting example of an information board is a board explaining the principles of positioning Muslim buildings in Brunei (Figure 15). Other engaging elements may be exhibits such as museums of miniatures, presenting selected urban systems and buildings (Figure 16).

Figure 13. Information board with a mock-up model at the Riverside Museum, Glasgow, Scotland. Source: M. Antolak, November 2014

Figure 14. Information board at Monasterboice in Ireland with a large share of aesthetic figures. Source: M. Antolak, August 2015
7. Conclusions

Education in the landscape may be conducted in all sorts of locations, including historic urban systems from the UNESCO World Heritage Lists. This form of education is growing in popularity but has not reached the full potential of effectiveness. With an improperly planned educational process, all efforts preparing the exhibition may prove futile. Individual outdoor education by its very nature, voluntary and presented contents must be attractive enough to capture the attention of the intended recipients. This is no easy task since the material must usually be made appealing for all sorts of age groups, social strata and visitors from all over the world.

In sum, the way of spatial development of the analysed objects is diverse and usually consistent with the surrounding space. The content presented on the information boards is, however, clichéd and boring, and the tourists are not willing to acquaint with them. The research shows that the old urban layouts have a great tourist potential. A greater number of tourists poses a threat to the historic systems, but it is also an opportunity for more effective society education in the field of architecture and urban planning. Tourists expect modern forms of content presentation, and the knowledge is most easily absorbed in practice - in the open space. Presentation of too much information is not recommended, and the selection of information materials should be consulted with the potential users of these facilities.

References
[1] Z. Melosik and T. Szkudlarek, “Culture, identity and education flicker of meanings,” Publishing House of IMPULS, pp: 75, 2013.
[2] S. Best, “Quaker events for young people: Informal education and faith transmission,” Quaker Studies, vol. 11, pp: 259-281, 2007.
[3] R. Faraciak, “Archaeological monuments as tourist destinations. The case of Cracow and its environs,” Geographical Works, Institute of Geography, Jagiellonian University, Kraków, vol. 106, pp: 147, 2000.
[4] L. Turos, “Tourism and self-study,” Higher School of Agriculture and Pedagogy in Siedlce, Siedlce, 1984.
[5] L. Turos, “Educational tourism,” University of Agriculture and Pedagogy in Siedlce, Siedlce, 1990.
[6] K. A. Jensen, “Effects of the artistic design of interpretive signage on attracting power, holding
time and memory recall,” Humboldt State University, pp: 16-34, 2006.

[7] J. Sarzyńska-Putowska, “Visual communication - selected issues,” Wyd. Fundacja im. Joanna Sarzyńska-Putowska at the Department of Visual Communication at the Faculty of Industrial Forms of the Academy of Fine Arts Jan Matejko in Krakow, Cracow, pp: 20-23, 2002.

[8] R. M. Clarry and J. H. Wandersee, “Learning on the Trail: A Content Analysis of a University Arboretum's Exemplary Interpretive Science Signage System,” The American Biology Teacher, Wyd. University of California Press, California, vol. 69, 1/2007, pp: 18-19, 2007.

[9] Unesco, “United Nations Educational, Scientific and Cultural Organization,” World Heritage Convention, [Online] 2019 [accessed 2019] at: <https://whc.unesco.org/>.