

# TRACES OF INFORMATION CODE AND ITS VISUAL EXPRESSION IN URBAN LANDSCAPE

Part 2



**Vaida Vaitkutė Eidimtienė, Linas Daubaras**  
Kaunas Forestry and Environmental  
Engineering University of Applied Sciences

For the last twenty years the use of QR code has been analyzed in various aspects – from data storage capacity and other technical possibilities to multifunctional use, as for advertising, marketing, public communication, education, recreation, art, culture, and other purposes.

In 2011 first botanical QR code was created in Nancy, France, at Place Stanislas. Approximately 1700 plants were used for it. This „botanical sign“ became an ornamental and communicational element of a public city space, because after scanning it you got directed to a mobile site with information about forthcoming events in that square (table 2).

In 2012 much media and public attention was drawn by a QR garden (table 2) at RHS Chelsea Flower Show. It was awarded a bronze medal in the category of „Fresh garden“. Landscape architects Jade Goto and Shelley Mosco managed to combine traditions of garden designing and establishing with information technologies in a perfect way. The image of a vertical wall planted with accompanying 3D elements has become perhaps the most interesting and recognizable example of a „green“ QR code in the world. Students of Chelsea College in London used a QR code in their ecological project promoting „green“ lifestyle. In their case the code sign in a square had more informational rather than aesthetical function. In 2015 in Wurzburg, Germany, a square was created with a main accent being a QR code sign. Being 144 m<sup>2</sup> large, it is visible from space (table 2).

Green City Solutions GmbH proposed an aesthetical and ecological way of cleaning polluted city air. They build green city walls – a kind of a plant module having a sign of a QR code. Every module, called CityTree (table 2), is made of approximately 850 plants and able to absorb up to 73 kg of small particles, which otherwise penetrate into lungs and can cause cancer. In Germany such filter modules are being built in public spaces as small-scale architecture installations, and the company suggests using them in China's largest cities with heavily polluted air.

Many green labyrinths having a shape of a QR code have been mentioned in literature, with a largest maze among them (29 000 m<sup>2</sup>) created in 2013 in Lacombe, Canada. It belongs to Kraay family, and it was included into the Guinness World Records [<https://www.kraayfamilyfarm.com/>].

Elements with a QR code in public city spaces are now considered to be an integral part of city's social content as strengthening informational communication between a city and its residents via information technologies.

## **Problems with using a QR code sign in public spaces**

“On the strategic level, public space can be defined as a complex, dynamic, multi-dimensional system in action composed of constituents and stakeholders of all kinds (both producers and consumers) together with ensembles of social relationship and practices formed by public policy, law, cultural pattern, values and beliefs, economic order, divisions of labor as well as by material artifacts (buildings, greenery, cell phones, benches) and immaterial environmental stimuli (sound, smell, taste, light, color)” [Mitrašinovic, 2006].

In his book „Cities for People“ Professor Jan Gehl from the Centre for Public Spaces Analysis in Copenhagen discusses how public space and its elements are adapted for a human being. He concentrates his attention on visual intercourse and human senses in that space.

There are different traditions established in various countries but in majority of them public space is assumed as a place with no privacy, designed for social use. Limitations on etiquette, norms of communication and agreed behaviour are created there. Such restrictions could be determined by law or by a common agreement/order. Works of art, exhibited in such spaces, would be assumed as public space art“ [Žukas, 2016]. Monuments and sculptures are usually erected in such spaces. Signs (works of art) always possess a certain load of ideology of appropriate time, that's why changes in public spaces can be based on formation of a city community and its changes.

A work of art usually combines space, time, culture and author's personal experience in itself. All these components could be analyzed separately, but as a unit they reflect aesthetic characteristics of the object. Aesthetics combines a lot of systematic meanings in itself,



Table 2. QR code in city public spaces

<p>PLACE STANISLAS 2011</p> 	<p>"Temporary garden in the Place Stanislas, Nancy in France, using over 1,700 plants. The code is fully functional and can be scanned by any smart phone capable of scanning barcodes. When scanned, the code resolves to a mobile website containing information on events. The garden is now home to the world's first botanical QR code".</p>
<p><a href="http://www.qrcodepress.com/place-stanislas-exhibits-world%E2%80%99s-first-botanical-qr-code/854605/">www.qrcodepress.com/place-stanislas-exhibits-world%E2%80%99s-first-botanical-qr-code/854605/</a></p>	
<p>CHELSEA, THE QR CODE GARDEN 2012</p> 	<p>"RHS CHELSEA FLOWER SHOW 2012, London. The focal point of the garden was a large QR (Quick Response) code, created from a wall of vertical planting. The QR resolves to a website giving more information about the garden".</p>
<p><a href="http://www.jadegoto.com/">www.jadegoto.com/</a></p>	
<p>CHELSEA COLLEGE, LONDON 2012</p> 	<p>"In response to this, students from the college have linked up with peers from the University College in London and the University of the Arts to turn a 12-metre grass square outside the institution's building into a giant soil QR code".</p>
<p><a href="http://www.culture24.org.uk/science-and-nature/art386345">www.culture24.org.uk/science-and-nature/art386345</a></p>	
<p>WURZBURG QR-CODE 2015</p> 	<p>"The city center in Wurzburg has been a big construction site for the past few months. The result: a giant QR-Code with the size of 144 square meters. They want the google satellite to show the QR-Code on Google Earth the next time it takes pictures of Wurzburg, so that everyone is able to scan the code on Google Earth directly and get the information right away".</p>
<p><a href="http://barcode.com/201603115733/german-city-builds-giant-qr-code-in-town-square.html">barcode.com/201603115733/german-city-builds-giant-qr-code-in-town-square.html</a></p>	
<p>CITYTREE, Germany 2016</p> 	<p>"Green City Solutions tries to fight the problem of air pollution worldwide. They seek to solve it with a combination of Internet of Things (IoT) and plants, providing clean and cool air to hot urban cities. Their solution is a four-meter-high CityTree installation, which is equivalent to 275 urban trees and has the ability to clean city air from harmful pollution".</p>
<p><a href="http://www.greentechchallenge.eu/single-post/2017/01/06/Green-City-Solutions-fights-air-pollution-with-IoT-biotech-and-moss">www.greentechchallenge.eu/single-post/2017/01/06/Green-City-Solutions-fights-air-pollution-with-IoT-biotech-and-moss</a></p>	

likesuch as beauty, pleasure, cultural/social values, history, communication – these are all meanings of values – J. Žukas states. According to these statements, majority of QR code-inspired artistic solutions in urban spaces partly correspond to the requirements of an art work.

At the same time problems with the use of artistic elements begin to rise:

- **Ideological ties.** Before putting any new element into public space of a city, local social and cultural context and ideological relations with environment should be evaluated. In the case of a QR code there are no clear relations with surrounding space and no identity perception.
- **Collective memory.** There is no historical experience of using QR codes. Collective memory is usually expressed via the past and places, directly reminding of an event from the past (or such places specially created). In QR code case there is no historical experience, and an object is only linked to modern times and personal experience. „QR objects“ could be classified as non-traditional elements and monuments with new images and additional structural components, such as water installations, green areas, pavement shapes, etc.
- **Impermanence.** Squares with the picture of a QR code on a pavement are ambitious and interactive spaces. They have been created in a few cities of the world as a brave visual solution. But there is also a question – are they going to turn into cultural heritage in twenty or fifty years' time, or will they be forgotten forever? Only time will show what will happen because technological processes are developing very quickly, so there is no doubt more advanced technologies will be in use at that time.
- **Use of IT for its main purpose.** Having been used for more than twenty years now, a QR code is not just a popular technology (widely used starting from machinery industry and ending up with providing information on business cards), but also a part of socioculture of a modern society. Social education is becoming the main function of a QR code in public city spaces now, and there is only a problem with elderly people who do not use smart phones very intensively.
- **Complicated maintenance.** Practical aspects of establishing and maintaining green elements is also important because all vertical green walls, ecological modules and horizontal elements of the squares mentioned above require constant maintenance (plant pruning, shape forming, watering, fighting diseases and pests, curing possible mechanical damages, etc.).
- **Fashion.** France has been setting fashion trends in clothing, behaviour and architecture in Europe since the 17th century. The first ever botanical QR code was not an exception – it was created in Nancy in 2011, using 1700 plants. It initiated a fashion for using signs with information content in green areas.
- **Representation.** A QR code sign represents development of informational technologies of the 21st century and has a sociocultural meaning. If green areas and buildings are compared – the latter ones are much more enduring. A building can be reconstruct, its facade repainted or, if nothing is done with it – it can turn into a certain trace, reminding of a particular period of history. Plants constantly change, and what would happen, if QR codes made of plants became uninteresting and left for themselves? So perhaps plants, forming the code, will create new forms and become a new sign of our times.
- **Substantiality.** Every urban landscape has specific substantiality, colour, texture and facture. Trying to

safeguard general structure of urban landscape, its aesthetical values and spatial expression, traditional architecture characters should be protected. Speaking about a QR code in this context, we have to accept a wide variety of materials, ranging „from glass to maze“ being used.

- **Competitiveness.** Competitiveness of a city is usually understood as comparison with other cities in terms of such characteristics as: density of population, investment, number of educational institutions, number of tourists, ongoing infrastructural and high-tech projects. In this case there is a field for discussion, whether a city becomes more competitive having interactive solutions for city spaces.
- **Monitoring.** A possibility to monitor a number of QR code scanning while checking internet sites exists. But in order to analyze this data, all subjects having art works with a QR code should monitor a number of visitors, which is not being done yet.
- **Problems with data segmentation.** Still there is no possibility to have a regressive analysis of the users (which country they are from, how long they stay connected, etc.) because the code is used only one way.

And finally – there is a space for discussion about how urban architect communities, heritage specialists and city authorities of different countries react to various visual expressions of a QR code.

## Conclusions

1. The use of graphic expression of a QR code for decoration is a phenomenon of the second decade of the 21st century. It started as a manner of building decoration, and later it spread into urban green areas.
2. Since it is impossible to decode information of a QR code visually and without appropriate devices, this code as a sign can be compared to an abstract art work which does not show any obvious thing.
3. The fashion for using QR code symbols in architecture and landscape architecture was mainly influenced by general society's admiration in IT.
4. The material provided in this article is one of the first attempts to analyze visual expression of QR code-influenced objects in urban spaces in terms of their aesthetics.
5. Technical problems with maintaining QR code-influenced green objects have been mentioned in order to ensure formation of aesthetically attractive urban green spaces, satisfying needs of modern visitors. ■

**Streszczenie:** W nowoczesnym społeczeństwie tradycja stosowania inteligentnych urządzeń stała się codziennością. QR kod, który był kiedyś podziwiany jako innowacyjne rozwiązanie, dziś stał się łatwo rozpoznawalnym znakiem i symbolem który można dostrzec w naszym otoczeniu coraz częściej. Korzystanie z kodu zmienia się od oznakowania części zamiennych dla przemysłu motoryzacyjnego do środków kształcenia i inspiracji dla prac artystycznych. Przedstawiony artykuł dotyczy śladów kodu QR w krajobrazie miejskim. Niema możliwości zrozumieć informacje kodu QR bez sprzętu pomocniczego, chociaż wizualnie można go postrzegać jako dzieło sztuki graficznej lub tylko skład białych i czarnych kropek.

Znaki kodów QR są również widoczne w krajobrazie w różnych formach. Budynki i ich kompleksy z powodów estetycznych, są najlepiej postrzegane w środowisku miejskim. Dlatego najbardziej znane przykłady tego trendu, kiedy QR kod jest inspiracją architektury budowlanej – takie, jak kompleks hotelowy w Zjednoczonych Emiratach Arabskich, fabryka szkła w Chinach, centrum handlowe w Japonii, Call centrum we Francji i Muzeum Narodowe w Australii, są przeglądane.

Dość często QR kod jest używany jako znak w przestrzeni publicznej. Ślady tego można znaleźć na chodnikach, w małej architekturze i wystroju elementów, a także w projektowaniu ogrodniczym. W Nancy

we Francji powstał pierwszy botaniczny kod QR. W Anglii, na wystawie Royal Flower Show, został przedstawiony ogród, inspiracją którego był kod QR. Studenci Chelsea College w Londynie wykorzystali kod QR w swoim ekologicznym projekcie „zielonego“ stylu życia. W Wurzburgu w Niemczech został utworzony plac w kształcie tego kodu. Jedna niemiecka firma rozpoczęła produkcję zielonych murów miejskich – moduł zakładu posiadający oznaczenie kodu QR, które są szczególnie przydatne do stosowania ich jako filtrów powietrza w silnie zanieczyszczonych miastach Chin.

Takie rozwiązania artystyczne w przestrzeniach publicznych częściowo odpowiadają zapotrzebowaniu na dzieła sztuki. Jednocześnie podkreślono w tym artykule problemy z wykorzystaniem elementów wzorcowych kodu QR, takie jak kwestie połączeń ideologicznych, pamięci zbiorowej, nietrwałości, konkurencyjności, istotności, skomplikowanego utrzymania, i inne. Istnieje wezwanie do dyskusji o tym, jak społeczności architektów miejskich, specjaliści dziedzictwa kulturowego i władze miejskie różnych krajów reagują na wizualne wyrażenia kodu QR.

Lecturer **Vaida Vaitkute Eidimtiene**, specialist in landscape design, PhD student of a joint program of Klaipėda University and Vilnius Gediminas Technical University. Member of the Lithuanian Society of Landscape Architects, Lithuanian Dendrology Society, member of the expert commission for preparing educational programs for Landscape design; contact: Kaunas Forestry and Environmental Engineering University of Applied Sciences, Liepu st. 1, Girionys, Kaunas r., LT-53101, Lithuania, e-mail: vevaida@gmail.com

Lecturer **Linas Daubaras**, specialist in forestry and tourism. President of the Lithuanian National Association of Tourist Guides, member of the Lithuanian Tourism Council, member of the Lithuanian Society of Landscape Architects, University representative at ECLAS. Has more than 20 years of practice in gardening business and tourism; contact: Kaunas Forestry and Environmental Engineering University of Applied Sciences, Liepu st. 1, Girionys, Kaunas r., LT-53101, Lithuania, e-mail: linas.dautra@gmail.com

## Bibliografia:

- Adomonis, J., 2008, Nuo taško iki sintezės. VDA, Vilnius, pp. 29.  
Gehl J., 2010, Cities for People, Washington, pp 6-8.  
Klavis, E., 2009, Estetika ir meno filosofija, pp.16.  
Mitrašninovic M., 2006, Total Landscape, Theme Parks, Public Space, Ashgate, pp 32.  
Žukas, J., 2016, Meno kūriniiu integravimo į viešąsias erdves problematika/ Miestų želdynų formavimas, Vol. 1, no 13, Klaipėda, pp. 409-411.  
DENSO Wave Inc. What is a QR Code? <http://www.qrcode.com/en/about/> [Previewed 2017-05-20]  
ISO, Information technology — Automatic identification and data capture techniques — QR Code 2005 bar code symbology specification, Swiss: ISO/IEC, 2006 <https://www.iso.org/obp/ui/#iso:std:iso-iec:18004:ed-2:v1:en> [Previewed 2017-05-29]  
Unique Hotel, Dubai. <https://www.e-architect.co.uk/dubai/code-unique-hotel> [Previewed 2017-05-25]  
Kas yra QR kodas? <http://www.qrmarket.lt/qr-kodas/> [Previewed 2017-05-09]  
Massive QR Codes Cover Tokyo Building <http://www.customqr-codes.com/story/102/Massive-QR-Codes-Cover-Tokyo-Building> [Previewed 2017-05-25]  
National Museum of Australia Administration Wing <http://www.archilovers.com/projects/202284/national-museum-of-australia-administration-wing.html> [Previewed 2017-05-25]  
Dijon: l'entreprise Teletech International est placée en redressement judiciaire <http://france3-regions.francetvinfo.fr/bourgogne-franche-comte/cote-d-or/dijon/dijon-l-entreprise-teletech-international-est-placée-en-redressement-judiciaire-923487.html> [Previewed 2017-05-26]  
Office for architecture and design. <http://www.philippmainzer.com/projects/architecture/taiwan-glass-fpg-fujian/> [Previewed 2017-05-27]  
Place Stanislas exhibits world first QR botanical code. <http://www.qrcodepress.com/place-stanislas-exhibits-world%E2%80%99s-first-botanical-qr-code/854605/> [Previewed 2017-05-27]  
Two-part Banana Theory installation takes sustainability to Chelsea College parade green <http://www.culture24.org.uk/science-and-nature/art386345> [Previewed 2017-05-28]  
Green City Solutions fights air pollution with IoT, biotech and moss.  
German City Builds Giant QR Code In Town Square. <https://barcode.com/201603115733/german-city-builds-giant-qr-code-in-town-square.html> [Previewed 2017-05-30]  
"QR Code" 30 05 2012 <https://www.kraayfamilyfarm.com/> [Previewed 2017-05-01]  
<http://www.greentechchallenge.eu/single-post/2017/01/06/Green-City-Solutions-fights-air-pollution-with-iot-biotech-and-moss> [Previewed 2017-05-29]  
The QR Code Garden. <http://www.jadegoto.com/> [Previewed 2017-05-28]