

RAFAŁ ZIELIŃSKI*

IMPORTANCE OF SKETCHES, GRAPHICS AND COMPUTER IN DESIGNING GREEN WALLS

ZNACZENIE SZKICÓW, GRAFIKI I KOPMUTERA W PROJEKTOWANIU ZIELONYCH ELEWACJI

Abstract

Green facades are becoming more and more frequently used tools in the process of urban transformation. They are treated by architects and town planners as a new material which allows them to transform grey and unattractive urban environment. Their final look, however, requires careful decisions and selecting adequate floral arrangements. Graphics, paintings and drawings backed by the knowledge of botany may result in creating green walls which can be veritable floral masterpieces. Virtual 3D models, on the other hand, enable us to understand better the mutual interaction between the 'green facades' and the surrounding urban environment. When designing vertical gardens and green murals, it is worth remembering about all the possibilities offered by sketches and the computer in order to transform urban areas thoughtfully and consciously.

Keywords: green walls, vertical gardens, green graphics, green murals, green street art

Streszczenie

Zielone elewacje stają się coraz chętniej wykorzystywanym narzędziem w procesie transformacji miast. Urbaniści i projektanci traktują je jako nowy materiał pozwalający na zmianę szarej, miejskiej rzeczywistości. Ich ostateczny wygląd i odbiór wymaga jednak przemyślanych decyzji i dobrania odpowiedniej kompozycji. W drodze do osiągnięcia właściwego efektu wizualnego i społecznego projektant ma do dyspozycji coraz więcej narzędzi. Grafika, malarstwo i rysunek wsparte wiedzą z zakresu botaniki mogą stworzyć na elewacjach roślinne arcydzieła. Z kolei wizualizacje i modele 3D pozwalają na lepsze zrozumienie, w jaki sposób „zielone fasady” będą oddziaływać na otoczenie. Kształtując wertykalne ogrody lub zielone murale, należy pamiętać o możliwościach, jakie daje nam szkic i komputer, aby w pełni świadomie zmieniać nimi przestrzeń miejską.

Słowa kluczowe: zielone elewacje, wertykalne ogrody, zielone i murale, green street art

* M.Sc. Arch. Rafał Zieliński, Division of Descriptive Geometry, Technical Drawing&Engineering Graphics, Faculty of Architecture, Cracow University of Technology.

1. Introduction

While transforming urban landscape we are relying more and more on new concepts and ideas. Artists and town planners alike often find their inspiration in the surrounding nature which gets as far as the city outskirts, and then, with great effort slowly finds its way into cramped urban areas. Green facades are becoming more and more visible and, consequently, increasingly popular solutions in the struggle to change our urban landscape. In order to achieve the desired visual and social effect, contemporary urban designers and town planners seem to have more and more tools at their disposal. Graphics, pictures and sketches backed by the knowledge of botany may produce facades with floral masterpieces. Computer visualisations and 3D models, on the other hand, allow to understand the interaction between green facades and the surroundings. When designing vertical gardens or floral murals one has to remember about all the possibilities offered by sketches and computer so that the transformation of urban areas can be thoughtful and fully conscious. By creating vertical gardens it is as if we were painting heavily industrialised and hermetically-built urban areas with living colours. In this way green murals and graphics are integrating nature with urban environment.

2. Green walls – the role of sketches in the designing process

Designing, construction and maintenance of green walls requires selecting appropriate systems and providing vegetation with adequate conditions in terms of microclimate. Designing green walls is clearly a challenging task as one has to remember about many aspects concerning design and particular location. Apart from technical aspects such as the type of system or structure to be used, maintenance, careful choice of vegetation depending on geographical and climatic conditions, one has to remember about the equally important visual aspect of such an installation and its visual impact on the immediate surroundings¹. In such a situation, a sketch or graphic become an obvious tool in the designer's hands. Once we are able to see the colour composition of plants, planning and positioning of plants become easier. Understandably, designing green walls is a complex process and one which requires from the designer not only a great deal of composition skills but also thorough knowledge of plants. Seedlings need to be carefully selected as almost every plant has a different vegetation cycle². Depending on the season of the year, new colours will be appearing on the wall and, consequently, they will considerably change the whole colour scheme of the installation. Patrick Blanc's works can serve as a good example. Being a forerunner of vertical gardens, he created his own style, in which drawings and sketches of future installations play a crucial role. One can see that he divided his graphics into two types. The first type of graphics show merely the positioning of particular plants

¹ B.O. Timur, E. Karaca, *Advances in Landscape Architecture*, lipiec 2013, [In:] Vertical Gardens, rozdział 22.

² N. Villard, *Gardening vertically. 24 Ideas for Creating Your own green wall*, W.W. Norton & Company, New York 2012.

in a given area. Uneven shapes positioned side by side are provided with Latin names of particular plants. They resemble a patchwork item of clothing which does show, however, traits of a carefully planned composition. They may look to you a bit like children's colour-in books, which are just waiting there for you to be coloured in. The second type of his graphics show in more detail the actual composition conceived by the designer. His concept, although still without colours, is now beginning to make up a coherent whole. Thanks to the details of particular seedlings one gets the idea about the texture of plants and the size of their leaves³.

Green walls influence considerably urban tissue improving the quality of life and shaping the urban ecosystem. One of many positive aspects of introducing such types of solutions is the visual perception of vertical gardens and, consequently, the way they influence city dwellers⁴. In order to take full advantage of their potential, one has to adopt a much more humanistic approach in dealing with this idea. It is mainly the impressionistic and picturesque aspect that will be first noticed in the urban reality transformed by green walls. At this stage of the designing process a sketch seems to be a more effective tool than a computer as it is much easier to lend to paper colours and the final composition we want to achieve. Włodzimierz Karczmarzyk's sketches may serve to illustrate how beautifully the effect of vines creeping up the wall may be rendered on paper by skilful usage of black ink and coloured pencils⁵. When designing vertical gardens, it is not enough to position them inside the desired urban space, it is necessary to consider carefully their final look. Traditional tools such as sketches and graphics come in handy in this case.

3. Sketch or computer – architectural concepts of vertical gardens

A number of ideas which are at the stage of being conceived in artists head call for different designing techniques depending on the very stage of the designing process. When considering green walls in a wider architectural and town planning sense, it is not only a sketch or a graphic but, naturally, also a computer that proves to be a very useful tool. It is often much easier to see the ultimate effect of the city 'getting greener' on a virtual model of the city. The latest technology is especially helpful when trying to check how the urban reality changes after introducing parks, lawns and vertical gardens. Designers at this stage do not need to analyse particular types of plants or their vegetation cycles as it seems enough to check only how green points would affect the interior of the buildings, their facades, whole streets and housing estates of the city. A good illustration may be the works and designs of Vincent Callebaut who, with the help of visualisation techniques, changes large urban areas into vibrant green oases. At least one example is worth mentioning here,

³ P. Blanc, *The Vertical Garden*, W.W. Norton & Company, New York 2012.

⁴ I. Alcock, M.P. White, B.W. Wheeler, L.E. Fleming, M.H. Depledge, *Longitudinal Effects on Mental Health of Moving to Greener and Less Green Urban Areas*, [In:] Environmental Science & Technology, 2014.

⁵ W. Karczmarzyk, *Kraju rodzinnego portrety*, Wydawnictwo Karczmarzyk Włodzimierz, p. 50-51.

namely the concept of transforming an industrial district of Geneva in Switzerland, in which plant-covered buildings attempt to imitate hills⁶.

In heavily urbanised sections of the city introducing new green areas is far more difficult, hence the vertical gardens or green walls often present the only solution. With a computer-generated image it is possible to determine how green walls will be perceived by people. Adequate positioning of floral elements and green walls may create a completely new psychological effect and impact scale. Designers may determine then whether it is better to use it as ‘a picture,’ or perhaps to create a new interior by introducing it on the walls of buildings adjacent to the square, or in the interior courtyard of a townhouse. It is also possible to virtually design the so-called ‘green rooms’ between buildings and inside city quarters and see to what extent they would change the character of a particular urban area. Green walls will become in this case the walls of the room, and a square or a lawn will become its floor.

Although computer models are clearly more precise, sketches and graphics may serve equally well in presenting the designer’s vision, especially when they show nature and its interaction with architecture. This very technique has been used in presenting the design of Podlasie Opera and Philharmonics in Białystok. The building has been shown in sketches as fully covered with green vegetation, which in future will cover all its floors and the roof. Within eight years the vegetation supported by frameworks will have created a green cocoon dominating the city skyline. Thus one could say that both the sketch and the computer are becoming equally important tools at designers’ disposal. It is the designer who will determine at what stage of the designing process a sketch or a computer-generated virtual model will be more useful. And it is not impossible to merge the two techniques when designing green walls. Patrick Blanc in his latest works applies this very method: he creates his visions of green installations by overlaying his sketches on computer-generated buildings. A good example of such approach to designing concept is his design of the façades of Yes Hotel in Athens and European Central Bank in Frankfurt⁷.

4. Green murals, graphics and sculpture – green street art

Green walls are increasingly popular and a vast array of concepts and solutions offered is simply astonishing. In urban environment it is noticed that plants and vegetation have become the focus of interest for artists. One has to mention here the works of Anna Garforth, who uses letters covered with vegetation to create green graffiti. In a similar fashion, she is preparing smaller forms, such as ‘Big Bang’ wall painting in one of London’s night clubs. Her ideas and works have been noticed by architectural firm Squire and Partners and used during annual Festival of Architecture in London. She was asked to prepare a floral mosaic based on her sketches to be used in one of London streets⁸. Green walls and various vines

⁶ *Landscape, Geneva 2020*. Vincent Callebaut Architectures, <http://vincent.callebaut.org/page1-img-geneve.html> (access 2.03.2015).

⁷ P. Blanc, *The Vertical Garden*, W.W. Norton & Company, New York 2012.

⁸ *King’s Cross Picnic*, Anna Garforth, <http://www.annagarforth.co.uk/work/kingscrosspicnic.html> (access 7.03.2015).

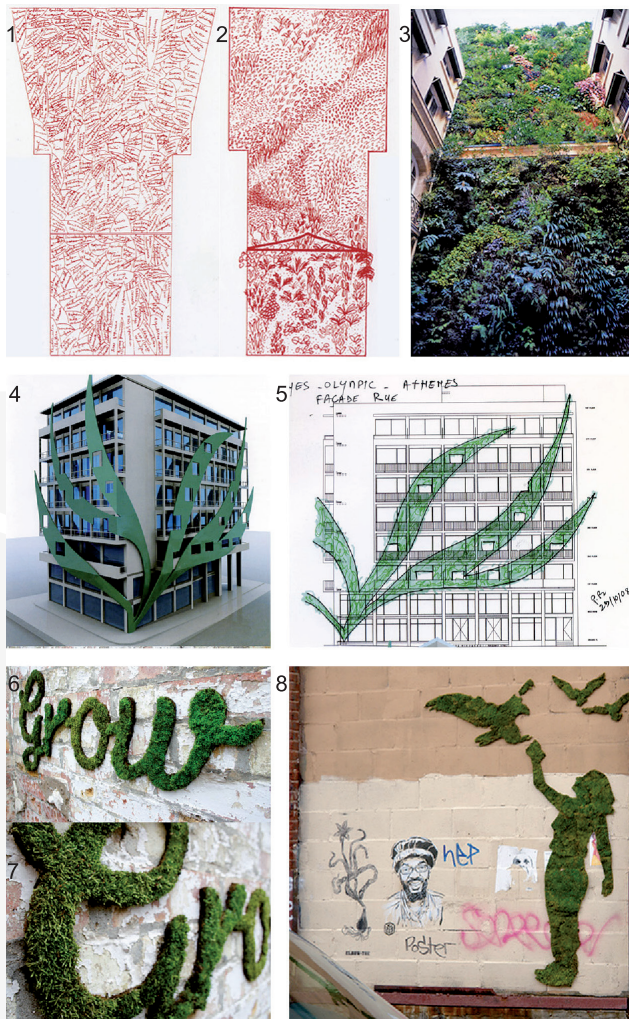
creeping up the walls are becoming a new source of inspiration, they have entered the so-called world of street art and it seems they are here to stay for good. This phenomenon can be noticed, for instance, in the form of increasingly popular urban murals. Stefaan de Croock-Strook, an artist from Belgium, created an interesting green mural opposite STUCK Arts Centre in Leuven using a natural base constituted by moss-covered walls. The only thing he had to do was to paint his picture using high-pressure water stream which, acting similarly to a painter's brush, formed a beautiful wall mural⁹. This example shows best how new and original graphics can be created. It appears that initiatives like these are beginning to attract whole groups of artists. New York is the place where Mosstika group is based. It attracts people for whom ecology and return to nature are pivotal in the creation process. They create their works on walls, so that all passers-by would be able to touch them and, at least momentarily, literally feel their connection with nature. Edina Tokodi, one of the group members, shows how floral graffiti may beautify grey and uninteresting urban reality. Taking advantage of animal motifs she paints the walls with intriguing pictures which remind passers-by about their connection with nature not only by means of image but also the texture of the plants used. Street art has now a new ally in the form of vines creeping up the walls¹⁰. Artists use every element of the street, pavement or building to create a work of art. Vertical gardens may also be designed as sculptures covered with vegetation. A good example here is the project of 'Papa' Jeff Koons opposite Guggenheim Museum in Bilbao. Temporary as well as permanent installations may be used to create sculptures or spatial structures, and in this way enriching urban environment and architectural interiors of buildings.

5. Conclusions

Green facades are becoming a more and more frequently used tool in the process of urban transformation. They are treated by designers and town planners as a new material which allows transformation of grey urban reality. When designing vertical gardens it is not enough to position them in particular location, one has to think very carefully about their final look. At each stage of planning and designing architects or artists need to choose the most appropriate tools. Sketches and graphics seem to be most useful when searching for the best composition and colour scheme. With their help selecting appropriate colours and textures may seem much easier. Virtual reality models, on the other hand, help with creating architectural and town planning concepts and with understanding the impact of vertical gardens on a particular section of the city or even the whole city. Sketches and computer have become equally important tools; with their help, thanks to novel architectural solutions and creeping-up vegetation, the walls no longer function as mere barriers. They are becoming a new additional space which can be utilized for creating city parks, green graphics and murals.

⁹ B. Meinhold, *Strook's Reverse Moss Graffiti Mural Emerges from a Wall of the STUK Arts Centre In Belgium* (online), Inhabitat, <http://inhabitat.com/strooks-reverse-moss-graffiti-mural-emerges-from-a-wall-of-the-stuk-arts-centre-in-belgium> (access 5.03.2015).

¹⁰ B. Starr, *Mosstika: Street Art Greens the Urban Jungle* (online), Visual News, <http://www.visualnews.com/2012/06/mosstika-street-art-greens-the-urban-jungle> (access 5.03.2015).



- III. 1–2. Photo from: P. Blanc, *The Vertical Garden*, Publisher W.W. Norton&Company, Nowy Jork 2012, p. 129
- III. 3. Photo from: P. Blanc, *The Vertical Garden*, Publisher W.W. Norton&Company, Nowy Jork 2012, p. 128
- III. 4–5. Photo from: P. Blanc, *The Vertical Garden*, Publisher W.W. Norton&Company, Nowy Jork 2012, p. 206
- III. 6. Photo from: Anna Garforth. *Grow*. W_grow_2.jpg [online]. <http://www.annagarforth.co.uk/work/grow.html> [date of access: 7.03.2015]
- III. 7. Photo from: Anna Garforth. *Grow*. W_grow_4.jpg [online]. <http://www.annagarforth.co.uk/work/grow.html> [date of access: 7.03.2015]
- III. 8. Photo from: Mosstika. *Street Art. Moss Stencil Brooklyn. Dumbo.jpg* [online]. <http://mosstika.com/projects/street-art> [date of access: 7.03.2015]

References

- [1] Alcock I., White M.P., Wheeler B.W., Fleming L.E., Depledge M.H., *Longitudinal Effects on Mental Health of Moving to Greener and Less Green Urban Areas*, [In:] Environmental Science & Technology, 2014.
- [2] Blanc P., *The Vertical Garden*, W.W. Norton & Company, New York 2012.
- [3] Karczmarzyk W., *Kraju rodzinnego portrety*, Publisher Karczmarzyk Włodzimierz, p. 50-51.
- [4] Meinhold B., *Strook's Reverse Moss Graffiti Mural Emerges from a Wall of the STUK Arts Centre In Belgium* (online), Inhabitat. homepage: <http://inhabitat.com/strooks-reverse-moss-graffiti-mural-emerges-from-a-wall-of-the-stuk-arts-centre-in-belgium> (access 5.03.2015).
- [5] Starr, B. *Mosstika: Street Art Greens the Urban Jungle Read* (online), Visual News, <http://www.visualnews.com/2012/06/mosstika-street-art-greens-the-urban-jungle> (access 5.03.2015).
- [6] Timur B.O., Karaca E., *Advances in Landscape Architecture*, 07.2013, [In:] Vertical Gardens, see section 22.
- [7] Villard N., *Gardening vertically. 24 Ideas for Creating Your own green wall*, W.W. Norton & Company, New York 2012.
- [8] *Grow. Anna Garforth*, <http://www.annagarforth.co.uk/work/grow.html> (access 7.03.2015).
- [9] *Landscript, Geneva 2020*, Vincent Callebaut Architectures, <http://vincent.callebaut.org/page1-img-geneve.html> (access 2.03.2015).
- [10] *King's Cross Picnic. Anna Garforth*, <http://www.annagarforth.co.uk/work/kingscrosspicnic.html> (access 7.03.2015).
- [11] *Grow. Anna Garforth*, <http://www.annagarforth.co.uk/work/grow.html> (access 7.03.2015).
- [12] *Street art. Mosstika*, <http://mosstika.com/projects/street-art> (access 7.03.2015).