

An architecture course to teach respect for the landscape

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ABSTRACT: A course on landscape architecture is a common component of an architect's education, but can serve various educational goals. Demonstrated in this article is the potential of the subject to develop a sense of responsibility for the landscape, understood as a common good. The author's choice of example of a landscape architecture design studio for students is one in which landscape inventory and evaluation is applied. The goal was to assess the visual quality of the existing landscape, as well as to provide students with simple tools to measure objectively the impact on the landscape of a project by an architect or engineer. Moreover, a self-assessment task teaches the young designer self-criticism and responsibility for their designs. The conclusions indicate that the landscape evaluation method should find application regularly in the preliminary design stage. The conclusions point also to the importance of learning, while doing education modules (i.e. design studios), which should find implementation in both architects' and engineers' education.

INTRODUCTION

Courses on landscape architecture are a normal component of architects' training. Educational goals include theoretical knowledge about landscape elements and composition, providing students with analytical methods and tools by which to study landscapes and develop their representation skills (i.e. drawing skills). The teaching methods in landscape architecture courses may differ, but they are built habitually from two basic modules. The first usually consists of lectures and is intended to convey theoretical knowledge. The second is one in which is adopted the idea of learning while doing, and is realised in the form of design studios.

Design studios, usually orientated towards developing practical design and drawing skills, are essential in teaching architecture [1], as well as in other disciplines considered artistic [2]. The design studio on landscape architecture can focus on differing areas, e.g. on promoting the designers' individuality by encouraging unique designs or on pushing them towards innovative thinking that could also serve sustainable goals (e.g. vertical farm designs). It can also serve social goals, fostering the feeling of responsibility for the landscape, understood as a common good.

The inclusion of a landscape architecture studio in the educational programme for architects and engineers can be considered part of the humanisation of engineering studies. This is becoming increasingly important in contemporary education, as the *...prevailing model, which favours narrow specialisation and improving professional skills in one job through long-term practice, is no longer valid* [3].

Defining the goals for a design studio is a question of priorities. Soft skills, including social and environmental awareness, start to play a considerable role, and are likely to become required from graduate architects and engineers. *Apart from technical competencies, the profession of the architect requires specific social competencies: understanding the user's needs, ability to diagnose social problems, negotiating and understanding the impact of construction investments on society and the environment* [4].

The purpose of this article is to demonstrate how a course on landscape architecture can help future architects and engineers understand the impact of their designs on the landscape. This is necessary to develop responsibility.

THEORETICAL BACKGROUND: THE VISUAL LANDSCAPE

In terms of theory is the definition of the landscape. According to the European Landscape Convention (ELC), a landscape is *...an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors* [5]. Depending on the field of study, the landscape may have different meanings. While some emphasise its geomorphology (historical) or ecology (current interactions), some focus on its visual characteristic

features. The latter approach reflects the definition of the landscape in the Oxford Dictionary, which explains this concept as ...*all the visible features of an area of land, often considered in terms of their aesthetic appeal*, which is frequently adopted in architectural studies.

The notion of visual aspect is inseparable from other approaches to the landscape involving different analysis scales. For example, the patch-corridor-matrix model features visual assessment as a way to analyse the land mosaic [6]. The visual aspects are not indifferent to local landscapes, as recognised by the ELC [5]. Myga-Piątek systematised contemporary types of landscapes within the borders of Poland [7]. An approach to landscapes needs to take into account long-term processes that shaped the contemporary typology of landscapes, including the visual aspects.

Analysis of the landscape's visual and non-visual elements has become the foundation for several contributions to the theory of landscape perception. One of these is the phenomenological approach to the landscape. A *phenomenon* is defined as something that can be observed, that manifests itself. The idea is derived from ancient Greek philosophy and was later redefined by Kant [8]. The notion of phenomena was the basis of the philosophical movement defined by philosopher Husserl as phenomenology [9]. It is found in the work of Heidegger, who introduced the concept known as a *thinking of things*, viz Heidegger's fourfold (das Geviert), inspiring further distinction and classification of phenomena [10]. More recently, phenomenology has served as the foundation for the analytical study of the landscape, elaborated by Norwegian architect, theorist and historian Norberg-Schulz [11].

In the study of the landscape, the phenomenological approach coincides with the idea of decomposing the landscape into significant entities and systems that can have specific meaning and connotations. One of the more recent methods breaks down the landscape into diverse visual and non-visual elements in terms of their influence on the perception of the landscape. Such an approach has been adopted by, among others, Górká [12]. She distinguishes between the creative and passive image of the landscape, with the first being built prevalingly from visual elements, including forms and patterns. The creative image of the landscape finds its equivalent in the imagined values of the collective consciousness [12]. Presented in this article is another approach to landscape analysis, based on its visual aspects.

Training in landscape perception, with an emphasis placed on ...*the values attaching to landscapes and the issues raised by their protection, management and planning* are recommended by the European Landscape Convention [5]. Founded on the assumption that landscape is a common good, the Convention highlights the fact that knowledge is crucial to shape the citizens' expectations regarding its quality, as well as to improve their feeling of responsibility for its sustainable development [12]. Hence, the presumption that the analysis of the visual elements of landscapes plays a key role in the recognition of their value, which is essential for future designers.

EDUCATION GOALS AND METHODOLOGY

As discussed above, both the landscape quality and its sustainable development can be considered the responsibility of all citizens. Architects and engineers, whose work significantly can modify the existing landscape, should be cognisant of this. Therefore, the essential educational task in this area is to teach students of both disciplines to understand their interventions in the existing landscape and to take full responsibility for them. That is the mission of the course on landscape architecture included in the educational programme for architecture and sustainable engineering students at Poznań University of Technology (PUT).

The purpose of the course is to provide students with objective tools for assessing the impact on the landscape of their design proposals. The primary assumption is that good design, correct in many aspects, may still harm the landscape. During the course, the students are familiarised with the methodology that allows them to analyse the existing landscape. They learn also how to define the interaction between a specific design proposal and the environment.

The foundations derive from the Polish school of landscape architecture. One of its key contributors, Bogdanowski, has formulated an analytical procedure based on landscape composition, which aims at an understanding of the landscape as humans perceive it [13]. The basic assumption is that trying to orientate within an open space requires the same means as in an interior by identifying reference points, such as walls and freestanding objects. According to Bogdanowski, any landscape interior can be analysed within the framework of four categories: horizontal plane, wall, vaulting (ceiling) and freestanding objects [13]. Their mutual relations determine the perception of the whole. The elements and principles of composition become the checklist to systematically analyse a landscape interior.

A similar procedure can be used for panoramic view, which equally can be broken down into a set of elements whose mutual relations determine the meaning of a given object, as well as its role in the whole image. The essential features of a panorama include dominant (strong spatial form), subdominant, accent, content, frames, background (uniform plane) and foreground (horizontal plane). The systematic analysis of panoramas and landscape interiors constitutes a fundamental step toward identifying the landscape main assets. Subsequently, the evaluation of the landscape serves as a starting point from which to develop a policy for its quality improvement. It provides guidelines for modifications, which can consist of: removing or masking selected elements (e.g. with the use of greenery), maintaining or protecting the existing state of the landscape or even exposing its selected features (e.g. by unifying its background), adding a new dominant to integrate the composition or unifying the content (e.g. through greenery or colour code).

The methodology of landscape inventory and evaluation based on a systematic analysis of its composition is used within the framework of the course on landscape architecture led at the PUT by the team of the Institute of Architecture and Physical Planning. The course contents differ between architecture and engineering departments and have different prerequisites.

The theoretical lectures are part of the curriculum for both architecture and sustainable engineering students. They provide both groups with general knowledge on landscape formation, composition and evaluation, as well as on the methodology of assessing the relationships created between different components of the landscape, including buildings and civil engineering works. The practical part of the course, which consists of a design studio, is addressed to architecture students, for whom drawing and design skills are considered vital. In particular, the ability to draw and sketch by hand exposes the creativity of the architect [14]. Hence, the educational importance of design studios involving freehand drawing.

Within the framework of the design studio, the students firstly are required to perform the analysis of a selected landscape using the methodology briefly introduced above. Field observation is an integral part of the study, and its results permit identification of the landscape's most essential assets, as well as evaluation of its overall visual quality. In the next step, the students are asked to prepare three different design proposals that subsequently are considered in terms of their visual interaction with the existing environment. This method of education is empirical, in the sense that it supports learning while doing. New to this method is that students are required to self-assess the impact of their projects on the existing landscape. The results will be discussed in more detail in the following section using selected examples.

DESIGN TASKS: RESULTS

The practical design course on landscape architecture has two design goals. The first involves evaluation of selected panorama, in which three variants of an architectural object are assessed in terms of their relationship with the existing landscape. The second design task involves developing three different design proposals situated in an urban landscape interior.

Design Task 1

The first practical task assigned to architecture students begins with an inventory and evaluation of a selected panorama. Instead of working on photographs, students are encouraged to draw the panorama by hand to enhance landscape perception. Students are asked to identify the types of landscape they perceive (e.g. urban, park, country, forest) and analyse the composition of the panorama. First, the main elements of the composition are distinguished (e.g. dominant, subdominant, accent, foreground and background); (Figure 1).

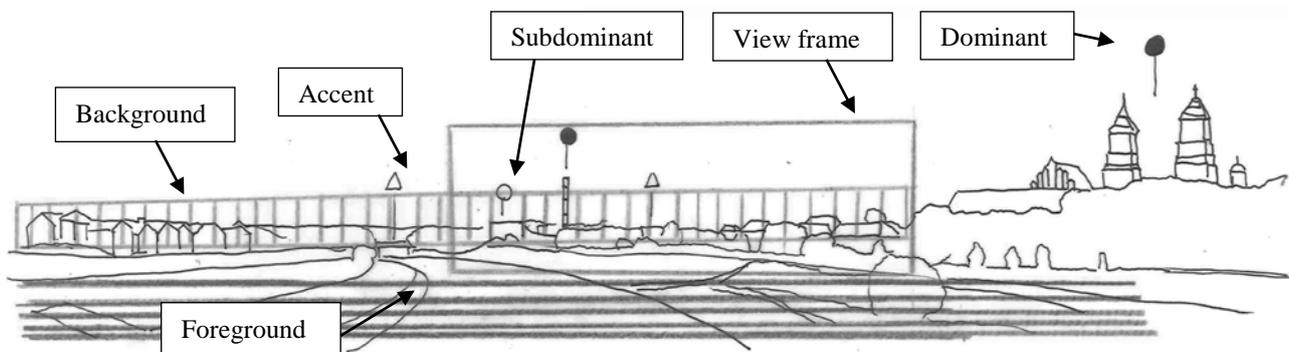


Figure 1: Example of a panorama composition analysis (Source: D. Fila, the FA-PUT, 2019).

Subsequently, other characteristic features of the panorama are analysed, including the distinction between the soft (e.g. vegetation) and rigid (e.g. buildings) content and the colour set definition. Infrequent features of the landscape, for example, the mirroring effect obtained due to the presence of surface waters, also are specified during the analysis.

The panorama inventory step ends with evaluation of the visual quality of the landscape, assessing its primary values and indicating problematic areas. This implies actions to be taken to either protect or improve the landscape. The panorama inventory, which is the analytical part of the task, is not limited to the view itself, but is supplemented by a study of the plan, which is broken down into first, second and subsequent planes. This step is crucial to identify the project's location. Once the site is defined, the students can approach the second stage of the task, which consists of proposing three design variants of an architectural object to be placed in the panorama.

All three variants must maintain the same volume, which is defined by the site. They should involve the same building functions. The three design proposals may differ in terms of building height and proportions, shape, density (compactness and fragmentation), articulation, colour, texture and finishing materials, architectural style and detail.

	Compliant features		Neutral		Contrasting features	
1. Scale (height)	0	1	2	3	4	5
2. Proportions	0	1	2	3	4	5
3. Shape	0	1	2	3	4	5
4. Density	0	1	2	3	4	5
5. Articulation	0	1	2	3	4	5
6. Colour	0	1	2	3	4	5
7. Materials and textures	0	1	2	3	4	5
8. Style and detail	0	1	2	3	4	5

Strong compliance with background	Accordance	Delicate distinction	Contrast
	Continuation		Opposition

Figure 2: Assessing compliance with landscape features (Source: the FA-PUT).

The design proposals are evaluated against the existing landscape. The grades are allocated on a six-point scale, where 0 designates full compliance with the landscape and 5 stands for the most opposition (Figure 2).

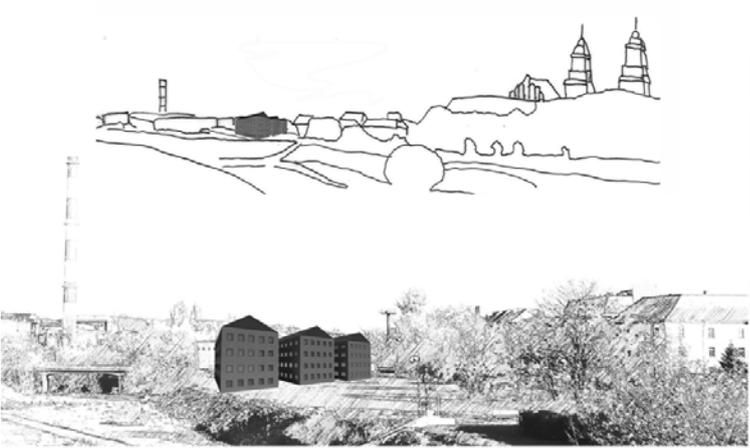
Task 1: Compliant variant no. 1	
	1. Scale (height) 0 (1) 2 3 4 5
	2. Proportions 0 (1) 2 3 4 5
	3. Shape (0) 1 2 3 4 5
	4. Density 0 (1) 2 3 4 5
	5. Articulation (0) 1 2 3 4 5
	6. Colour 0 (1) 2 3 4 5
	7. Materials & textures (0) 1 2 3 4 5
	8. Style & detail (0) 1 2 3 4 5

Figure 3: Example of design task 1, compliant variant (Source: D. Fila, the FA-PUT, 2019).

Each design proposal was assessed by its author, with assistance from the tutor and the group. The result is an evaluation of the impact on the landscape of the design (Figure 3). The projects can be qualified as compliant, neutral or contrasting. However, each situation is unique, and there is no general rule for compliant designs to be considered *a priori* better than contrasting ones.

A significant impact on the existing landscape, which usually results from the application of strongly contrasting architectural features, may be desirable in a situation, where the existing panorama has been qualified as requiring a new dominant or accent. Hence, the importance of the landscape evaluation which finalised the inventory step, and which allowed the formulation of precise recommendations for landscape protection or improvement.

Design Task 2

The second task within the framework of the design studio shares the main principles with the first, including its realisation in three steps. However, the scale of the project is different, because of its location in the urban space. The purpose of differentiating the scale of the two design tasks is to teach students how to use the landscape inventory

and evaluation method in different environments, both in an open space and in a closed urban interior. The inventory stage of the second task differs from the previous one to some extent, being based on an analysis of the interior composition, carried out according to the guidelines formulated by Bogdanowski [13]. First, the essential elements of the composition (i.e. horizontal plane, walls, ceiling and freestanding objects) are distinguished and analysed graphically (Figure 4).

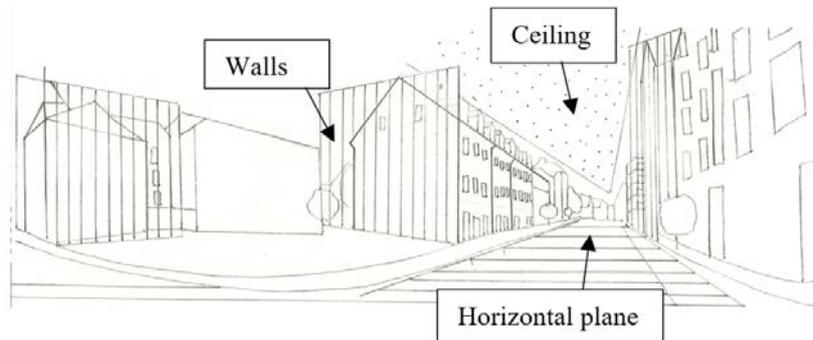


Figure 4: Example of urban interior basic analysis (Source: D. Fila, the FA-PUT, 2019).

Then, attention is paid to their characteristic features, which refer to the same categories that were applied in the first task, i.e. scale, proportions, density, articulation, colour palette, finishing materials and their textures, as well as architectural styles and detailing. Only after the analysis stage is completed do students proceed to the elaboration of three design proposals for one selected site. As for the previous task, the project volume must stay the same for all three versions. In the final step, the three design proposals are evaluated according to the same principles as outlined above (Figure 5).

Task 2: Compliant variant no. 1	
	1. Scale (height) <input type="radio"/> 0 1 2 3 4 5
	2. Proportions <input type="radio"/> 0 1 2 3 4 5
	3. Shape <input type="radio"/> 0 1 2 3 4 5
	4. Density <input type="radio"/> 0 1 2 3 4 5
	5. Articulation <input type="radio"/> 0 1 2 3 4 5
	6. Colour 0 <input checked="" type="radio"/> 1 2 3 4 5
	7. Materials & textures <input type="radio"/> 0 1 2 3 4 5
	8. Style & detail <input type="radio"/> 0 1 2 3 4 5

Figure 5: Example of design task 2, compliant variant (Source: D. Fila, the FA-PUT, 2019).

DISCUSSION

The final assessment of the three design proposals, elaborated for the same function, volume and site, allows determination of how architectural forms with compliant, neutral or opposing features differ in terms of the modification of the existing landscape. While evaluating the strength and the positive or negative character of the impact caused by each of the three variants, the self-assessment method proved crucial for achieving the learning outcomes. In some cases, the students had to admit that a design that seemed to be most attractive, could eventually cause damage to the overall quality of the existing landscape. On the other hand, total compliance with the visual characteristics of the existing landscape equally can give an unsatisfying final effect. Hence, the importance of the landscape evaluation step, which informs a correct strategy of intervention.

Designers, applying the method presented above, are not obliged to rely on their intuition. Instead, they have an objective instrument by which to assess the impact of their intervention. In addition, the landscape evaluation procedure motivates designers to recognise the landscape as a common good, which gives it priority over personal tastes and ambition. Finally, due to the self-evaluation, the method teaches self-criticism and responsibility. These abilities are particularly valuable in of the present priorities in architects', landscape architects' and engineers' education, which includes a *challenge to young designers to create functional, balanced architecture harmoniously merged with its context* [15].

The two design tasks described above demonstrate that a course on landscape architecture has a multifaceted character that can achieve diverse educational goals. With field observation and freehand sketching, it can foster the development of drawing skills, which also has a positive effect on the designers' creativity [14]. Due to its learning-while-doing formula, the design studio has lasting educational effects, developing both drawing and design skills [1][2], as well as soft skills, which are of growing importance in design practice [4][15]. The course discussed in this article can make a vital contribution to the humanisation of engineering studies, which is gaining in importance [3].

CONCLUSIONS

The learning outcomes of the course described in this article include building awareness of the designer's social responsibility for the landscape intended as a common good. The teaching offers objective tools by which to assess the values associated with the visual elements of a landscape. To respect a landscape, it is essential to first recognise its value. Hence, the inventory and evaluation stage is a mandatory component of the design process. The objective assessment reveals the changes to the landscape and its overall visual quality as a result of implementing various project proposals. For this reason, a landscape design studio should be a part of the curriculum not only for architects, but also for engineers.

The procedure of landscape inventory and evaluation has wide applicability since it can be used both in the open space, as well as in urban interiors. To protect landscape values, and indirectly its diversity, it is not always possible to reproduce architectural solutions in different landscapes, with the same effect. The landscape inventory and evaluation procedure should be used regularly by practising designers as part of the preliminary design stage. It provides designers with a simple and rapid simulation to assess the impact that a given project proposal has on the landscape. This is particularly helpful when selecting the design concept that best fits the context.

REFERENCES

1. Gyurkovich, J., Teaching design in the Faculty of Architecture at Cracow University of Technology. *World Trans. on Engng. and Technol. Educ.*, 16, 4, 334-337 (2018).
2. Peřinková, M., Design studio for teaching creative and artistic disciplines. *World Trans. on Engng. and Technol. Educ.*, 16, 4, 452-455 (2018).
3. Źychowska, M.J., Humanisation of engineering studies. *World Trans. on Engng. and Technol. Educ.*, 17, 3, 250-253 (2019).
4. Borucka, J., Czyż, P. and Targowski, W., Engendering responsibility in architecture students through real planning for a tram depot in Gdańsk. *World Trans. on Engng. and Technol. Educ.*, 18, 2, 117-122 (2020).
5. European Landscape Convention, European Treaty Series - No. 176, Council of Europe, Florence, Italy (2000), 26 June 2020, <https://rm.coe.int/1680080621>
6. Forman, R.T., *Land Mosaics: the Ecology of Landscapes and Regions*. Cambridge, UK: Cambridge University Press (1995).
7. Myga-Piętek, U., *Krajobrazy Kulturowe: Aspekty Ewolucyjne i Typologiczne - Cultural Landscapes: Evolutionary and Typological Aspects*. Katowice, Poland: Uniwersytet Śląski (2012) (in Polish).
8. Kant, I., *The Critique of Pure Reason*. (1st Edn), 1781. Guyer, P. and Wood, A.W. (Transl. and Eds), Cambridge, UK: Cambridge University Press (1998).
9. Husserl, E., *Husserliana: Edmund Husserl - Collected Works*. Brough, J.B. (Trans.), Dordrecht, The Netherlands: Kluwer Academic Publishers (1991).
10. Heidegger, M., *Basic Writings*. London, UK: Routledge, Taylor & Francis Group (1978).
11. Norberg-Schulz, C., *Genius Loci. Towards a Phenomenology of Architecture*. New York, USA: Rizzoli (1980).
12. Górka, A., Landscape perception and the teaching of it in Poland. *World Trans. on Engng. and Technol. Educ.*, 18, 2, 123-128 (2020).
13. Bogdanowski, J., *Kompozycja i Planowanie w Architekturze Krajobrazu*. Wrocław, Poland: Zakład Narodowy im. Ossolińskich (1976) (in Polish).
14. Špaček, R., Peciar, M. and Šíp, L., Sketching and drawing in the new age - the role of sketching and drawing in architectural and technical education. *World Trans. on Engng. and Technol. Educ.*, 14, 1, 8-13 (2016).
15. Makowska, B., Innovative methods in teaching improve the creativity of landscape architecture students. *World Trans. on Engng. and Technol. Educ.*, 17, 3, 343-348 (2019).