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**PROJECT PROPOSALS FOR THE  
CONSTRUCTION OF PARK  
FACILITIES**

**V.V. MONARCH**, PhD in  
Agriculture, Senior Lecturer,  
Vinnytsia National Agrarian University

*According to the analysis and evaluation of the elements of landscaping in the park zone of the VNAU, it was found that there are different types of small architectural forms by functional purpose. For example, small architectural forms for recreation are represented by benches and sheds. The benches are made of wood and metal and are in good condition. Canopies made of tarpaulin and metal are in excellent condition, as they have been recently installed. Small architectural forms for decoration are represented by flowerpots, lanterns, and animal sculptures. The portable and stationary flowerpots are in excellent condition and are made of natural stones, which adds to their beauty and weight at the same time. Lanterns, as lighting elements, have a good appearance and perform a utilitarian and decorative role. It should be noted that the animal sculptures presented at the exhibition area have a satisfactory appearance. Since wood is a short-lived material, the sculptures require cosmetic repairs or complete replacement with sculptures made of more durable materials. Small architectural forms for economic purposes are represented by garbage cans made of metal and wood, which have a good appearance. There are 34 benches for long-term rest and 14 benches for short-term rest on the territory of the university buildings. All benches are stationary and made of concrete, wood and brick. For the arrangement of park facilities and small architectural forms on the territory of the Podillia Botanical Garden, we offer the projects presented in this paper. For the composition project, in addition to the kiosk, we recommend the following assortment of plants: western thuja; common juniper; hybrid rose; Japanese spirea; lemongrass; shrub rose; gray bone marrow*

**Keywords:** sculpture, bench, nomenclature of elements, purpose, inventory.

**Table 2. Fig 5. Lit. 9.**

**Problem statement.** Landscape architecture is one of the most important aspects of urban planning. It sets the task of organizing a space free of buildings. The emergence of parks and gardens, landscape gardening ensembles depends on many conditions: topographic (relief), climatic and social. Varieties of landscape architecture are influenced by the level of culture of society, its way of life and the era in which this art is developing [1].

When creating landscape architecture, natural materials are mainly used. Designers create elements of park architecture, which are commonly called "small architectural forms". These include park benches, flower beds, gazebos, decorative pools and fountains, trellis (a thin lattice of wooden slats for climbing plants) and pergola (a gazebo or gallery entwined with plants), grottoes (cave-like structures made of stones) and alpine slides, retaining walls for parks with hilly terrain [2].

**Analysis of recent publications.** Small architectural firms are small one-story buildings for auxiliary and decorative purposes that are used to organize space and certain functional processes in it and complement the composition of buildings, structures, their complexes, ensembles, estates, streets, squares, gardens and parks.

Small architectural forms can be made of wood, stone, brick, metal, plastic, glass, etc. The first mention of them dates back to the time of Ancient Egypt and is still widely used today. Small architectural forms include elements of landscaping for recreational areas. In Western Europe, the terms "street furniture" and "street fittings" correspond to this concept. The Ukrainian term is based on the lack of clear criteria for dividing architectural forms into large and small [3].

Small architectural forms perform the following functions: engineering and transport, economic, commercial, recreational, informational, memorial, decorative and plastic. Some of the functions are not always manifested in an unambiguous architectural form. For example, a pavilion can have a variety of functional purposes.

Nomenclature of elements of small architectural forms :

- fences and gates, stairs, balustrades;
- street lights, other urban lighting devices;
- transformer substations, garbage bins, telephone booths;
- pavilions of public transport stops;
- trade pavilions and kiosks;
- park gazebos, pavilions, arches and arcades, columns and colonnades, bridges, fountains, vases, artificial waterfalls, decorative sculpture;
- children's playgrounds;
- pump rooms;
- visual information installations (stands, poster stands);
- memorial structures (obelisks, steles, memorial crosses).

**Research results.** Small architectural forms in the garden can be safely considered the final chord of the symphony of landscape design, and this is far from a luxury, but a necessity in any territory that is at least partially intended for recreation.

In European countries, small architectural forms have long been considered classics of the genre, while in our country they are just becoming fashionable. Due to the expensive decoration of rich country houses and estates with such elements, it seems to us that such beauty is only available to oligarchs and successful businessmen. But this is not the case, because absolutely everyone can afford to ennoble the landscape, but how exactly to do it depends only on you and on the chosen compositions and elements. Naturally, the list of small architectural forms for the garden includes many expensive buildings - fountains, sculpture, labyrinths, amphitheatres, but you can always start from the small by building a gazebo in the garden, installing original pergolas or a small bridge over a pond or moat [4-6].

We conducted an inventory of small architectural forms located on the territory of the Podillia Botanical Garden and within the park area of the VNAU. To provide the necessary recreational conditions for students, teachers and guests of the university, it is important to place architectural structures evenly throughout the territory. In addition, it is important to group kiosks according to their functional

purpose. The park facilities of the park zone differ in their list and functional purpose (*Table 1*).

*Table 1*

**Evaluation and analysis of small architectural forms of the park area**

Functional purpose of small architectural forms	Nomenclature of elements of park facilities	Material used	Assessment of the condition and quality of small architectural forms
Small architectural forms for recreation	benches	wood + metal	good
	canopies	tarpaulin + metal	excellent
Small architectural forms for decoration	stationary flower beds	natural stone	excellent
	portable flower beds	natural stone	excellent
	lanterns	metal/glass	good
	animal sculptures	tree	satisfactory
Small architectural forms for economic purposes	garbage cans	metal/wood	good

Source: compiled based on own research

There are enough benches in the park area of the university to provide comfortable conditions for students in any corner of the university. However, the situation is completely different if you go deeper into the botanical garden. There are no benches or trash cans.

The benches on the campus are comfortable to use. Their shape is simple, and the color scheme organically fits into the overall color scheme of the territory of the higher education institution [7].



**Fig. 1. Benches and sheds on the campus**

Source: compiled based on own research

It should be noted that the benches with backrests are made of wood and concrete supports. Literary sources claim that it is forbidden to use pure concrete for benches, because then the benches will be cold, hard and have an inexpressive appearance.

The benches in the park area are made of a combination of different materials. For example: concrete-wood, brick-wood, so the aesthetic appearance of such kiosks is good [8].

As for wooden benches, they are easy to manufacture and economical in cost. They have a disadvantage, as they are short-lived on wooden supports and can only be placed temporarily. It has been established that benches on concrete and reinforced concrete supports of various types are more durable. They are produced industrially (Table 2).

With a significant number of benches in the park area, the number of bins near benches is half as many. Approximately 89% are benches without backrests and 11% with backrests. The main function of the bins is to ensure cleanliness and order. Therefore, we consider it necessary to increase the number of bins [9].

Table 2

### Classification characteristics of longwalls

Name of the park structure	Classification characteristics				
	quantity, pieces	age group (for adults/ for children)	according to the purpose (long rest/short rest)	by the type of guidance (stationary/ portable)	material of the benches (glass, concrete, plastic, wood, brick)
Benches for prolonged rest	34	for adults	for a long rest	stationary	concrete+ wood
Benches for short-term rest	14	for adults	for short-term vacation	stationary	wood+ brick

Source: compiled based on own research

Stairs, ramps, retaining walls, and bridges are important elements of the park's road network and architectural design. According to construction standards, stairs with step sizes of 40-44 cm are convenient. And the size of the sub-steps should be about 8-10 cm. As for the width of the stairs, it is determined by the parameters of the adjacent elements of the road network and is associated with a capacity of no more than 500 people per square meter (Fig. 2).



Fig. 2. Benches and litter bins in the park area

Source: compiled based on own research

When choosing materials for the design and construction of stairs, attention is paid to the intensity of pedestrian loads, the architectural and artistic solution, and the amount of funding.

Garden and park stairs are classified into three main types according to the method of creation (Fig. 3):

- on a reinforced concrete, pile foundation;
- located between the side retaining walls;
- to strengthen individual steps.

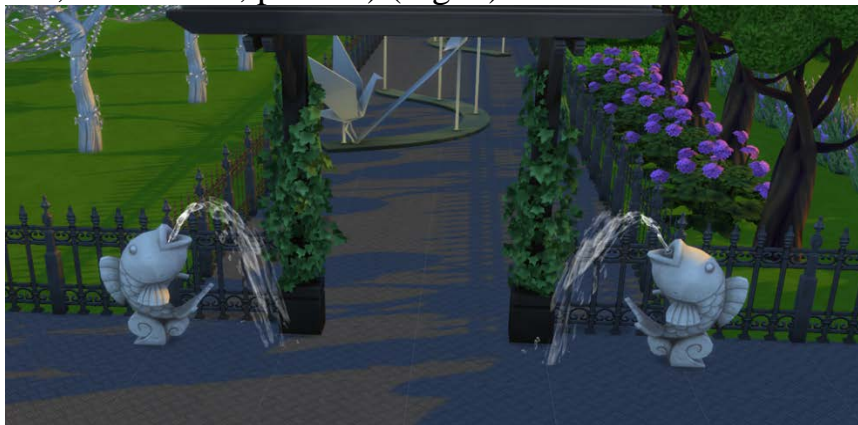


*Fig. 3. Small architectural forms of utilitarian character*

*Source: compiled based on own research*

It was found that the stairs in the park area are good and safe for the movement of students, faculty and guests of the university. The correlation between the sizes of the main elements, treads and steps was calculated in detail. It was also found that all academic buildings have ramps that run parallel to the stairs. The ramps have handrails and a rough surface for safe operation. The ramps have a hard, non-slip type of coating that is convenient for everyone. Monolithic concrete slabs are used for the construction of ramps [42].

Plastic art is a whole world, and each of its representatives finds its own niche (monumentalism, easel figurines or decorative plastic) and its own genres of sculpture (historical, animalistic, portrait) (Fig. 4).



*Fig. 4. Entrance to the alley of the VNAU botanical garden. Sculptures-fountains in the form of fish*

*Source: compiled based on own research*

There are four types of "round" plastic:

We have created two versions of the projects that are recommended to be used for the design of the university and botanical garden.

**Monumental.** Monumental monuments are distinguished by the scale of their size and idea. Such a composition can become an organic element of the natural environment, a decoration of a city square or the center of an architectural ensemble.

**Monumental and decorative.** It is used in the design of garden and park ensembles, as well as for decorating the natural landscape, building interiors and building facades.

**Easel painting.** It is characterized by metaphorical meaning, symbolism and deep psychology. The size of such statues is close to the natural dimensions of the sample object, so they are designed to be perceived from a short distance (Fig. 5).



Fig. 5. Alley of the VNAU Botanical Garden. Sculpture in the form of birds

**Conclusions and prospects for further research.** The territory of the Podillia Botanical Garden needs to be modernized. The installation of park facilities and small architectural forms on the territory is a mandatory and necessary condition for attracting a new flow of tourists and adapting the facility to modern conditions. We consider the arrangement of benches, trash cans and lighting elements along the territory of the main flow of visitors on the main and secondary roads to be the priority measures. The projects proposed in the article are to be arranged in the central part of the botanical garden.

#### Список використаної літератури

1. Смірнова А.М. Сад відкритих просторів: ландшафтний дизайн саду. *Ландшафт і архітектура*. 2016. № 2. С. 24-28.
2. Крижанівська Н.Я. Основи ландшафтного дизайну. Київ: Ліра К, 2015. 218 с.
3. Кучерявий В. П. Ландшафтна архітектура : підручник. Львів: Новий Світ-2000, 2017. 521 с.
4. Дідур І.М., Прокопчук В.М., Панцирева Г.В., Циганська О.І. Рекреаційне садово-паркове господарство. Навчальний посібник. Вінниця: ВНАУ. 2020. 321 с.
5. Дідур І.М., Прокопчук В.М., Циганська О.І., Циганський В. І. Газони: технологічні особливості створення та експлуатації. Навч. посіб. Вінниця: ВНАУ, 2019. 293 с.

6. Прокопчук В.М., Циганський В.І., Циганська О.І. Оцінка якісного стану та обґрунтування заходів догляду за газонним фітоценозом на території Вінницького національного аграрного університету. *Сільське господарство та лісівництво*. 2016. № 3. С. 193-200.

7. Prokopchuk V., Pansyureva H., Tsyhanska O. Biostationary and exposition plot of Vinnytsia national agrarian university as an educational, scientific and manufacturing base in preparation of the landscape gardening specialist. *The Scientific Heritage*. 2020. Vol. 51. P. 8-17.

8. Матусяк М.В. Оцінка зимостійкості видів роду *Magnolia L.* в умовах біостаніонару Вінницького національного аграрного університету. *Наукові горизонти*. 2020. № 03 (88). С. 74-80. DOI: 10.33249/2663-2144-2020-88-3-74-80.

9. Monarkh V.V. Biological and ecological characteristics of dendroflora of the Podillia botanical garden of Vinnytsia national agrarian university. *Сільське господарство та лісівництво*. 2019. № 2 (13). С. 228-237. DOI: 10.37128/2707-5826-2019-2-19.

#### Список використаної літератури у транслітерації / References

1. Smirnova A.M. (2016). Sad vidkrytykh prostoriv: landshaftnyi dyzain sadu [Garden of open spaces: landscape design of the garden]. Landshaft i arkhitektura. № 2. 24-28 [in Ukrainian].

2. Kryzhanivska N.I. (2015). Osnovy landshaftnoho dyzainu. [Basics of landscape design. Structural elements of garden and park objects]. Kyiv : Lira K. [in Ukrainian].

3. Kucheriavyi V.P. (2017). Landshaftna arkhitektura : pidruchnyk. [Landscape architecture: textbook]. Lviv : Novyi Svit-2000, [in Ukrainian].

4. Didur I.M., Prokopchuk V.M., Pansyureva H.V., Tsyhanska O.I. (2020). Rekreatsiine sadovo-parkove hospodarstvo [Recreational garden and park economy]. Navch. posib. Vinnytsia: VNAU. [in Ukrainian].

5. Didur I.M., Prokopchuk V.M., Tsyhanska O.I., Tsyhanskyi V.I. (2019). Hazony: tekhnolohichni osoblyvosti stvorennia ta ekspluatatsii. [Lawns: technological features of creation and operation]. Navch. posib. VNAU. [in Ukrainian].

6. Prokopchuk V.M., Tsyhanskyi V.I., Tsyhanska O.I. (2016). Otsinka yakisnoho stanu ta obgruntuvannia zakhodiv dohliadu za hazonnym fitotsenozom na terytorii Vinnytskoho natsionalnoho ahrarnoho universytetu. [Assessment of the qualitative condition and substantiation of measures for the care of the lawn phytocenosis on the territory of Vinnytsia National Agrarian University]. *Silske hospodarstvo i lisivnytstvo – Agriculture and forestry*. № 3. 193-200. [In Ukrainian].

7. Prokopchuk V., Pansyureva H., Tsyhanska O. (2020). Biostationary and exposition plot of Vinnytsia national agrarian university as an educational, scientific and manufacturing base in preparation of the landscape gardening specialist. *The*

*Scientific Heritage*. Vol. 51. P. 8-17. [In English].

8. Matusiak M.V. (2020) Otsinka zymostiikosti vydiv rodu Magnolia L. v umovakh biostatsionaru Vinnytskoho natsionalnoho ahrarnoho universytetu. *Visnyk ZhNAEU. Naukovi horyzonty – Bulletin of ZhNAEU. Scientific horizons*. № 03 (88). 74-80. DOI: 10.33249/2663-2144-2020-88-3-74-80. [in Ukrainian].

9. Monarkh V.V. (2019). Biological and ecological characteristics of dendroflora of the Podillia botanical garden of Vinnytsia National Agrarian University. *Silske hospodarstvo ta lisivnytstvo – Agriculture and forestry*. № 2 (13). 228-238. DOI: 10.37128/2707-5826-2019-2-19. [In English].

### **АНОТАЦІЯ**

#### **ПРОЕКТНІ ПРОПОЗИЦІЇ БУДІВНИЦТВА ПАРКОВИХ ОБ'ЄКТІВ**

За результатами аналізу та оцінки елементів благоустрою паркової зони ВНАУ було виявлено, що існують різні типи малих архітектурних форм за функціональним призначенням. Наприклад, малі архітектурні форми для відпочинку представлені лавками та навісами. Лавочки виготовлені з дерева та металу і перебувають у доброму стані. Накриття з брезенту та металу знаходяться у відмінному стані, оскільки були встановлені нещодавно. Малі архітектурні форми для декорування представлені вазонами, ліхтарями та скульптурами тварин. Переносні та стаціонарні вазони знаходяться у відмінному стані та виготовлені з натурального каміння, що додає їм краси та ваги водночас. Ліхтарі, як елементи освітлення, мають гарний зовнішній вигляд і виконують утилітарно-декоративну роль. Слід зазначити, що скульптури тварин, представлені на виставковому майданчику, мають задовільний зовнішній вигляд. Оскільки дерево є недовговічним матеріалом, скульптури потребують косметичного ремонту або повної заміни на скульптури з більш довговічних матеріалів. Малі архітектурні форми господарського призначення представлені урнами для сміття з металу та дерева, які мають гарний зовнішній вигляд. На території корпусів університету встановлено 34 лавки для тривалого відпочинку та 14 лавок для короткочасного відпочинку. Всі лавки стаціонарні, виготовлені з бетону, дерева та цегли. Для облаштування паркових об'єктів та малих архітектурних форм на території ботанічного саду «Поділля» пропонуємо проекти, представлені в даній статті. Для проекту композиції, окрім малих архітектурних форм, рекомендуємо наступний асортимент рослин: туя західна; ялівець звичайний; троянда гібридна; спірея японська; лимонник; троянда куцова; костяниця сіра.

**Ключові слова:** скульптура, лава, номенклатура елементів, призначення, інвентар.

**Табл. 2. Рис. 5. Літ. 9.**

### **Авторські дані**

**Монарх Вероніка Валентинівна** – кандидат сільськогосподарських наук, старший викладач кафедри лісового та садово-паркового господарства Вінницького національного аграрного університету (21008, м. Вінниця, вул. Сонячна, 3. e-mail: monarhinya@ukr.net).

**Monarkh Veronika Valentinovna** – PhD of Agricultural Sciences, senior lecturer of the Department of Forestry and Horticulture of Vinnytsia National Agrarian University (21008, Vinnytsia, Sonyachna st., 3 email: monarhinya@ukr.net).