ARTCHITECTURE

SMALL ARCHITECTURAL FORMS AS A FACTOR IN CREATING A COMFORTABLE RESIDENTIAL AND RECREATIONAL ENVIRONMENT IN RESIDENTIAL AREAS

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Abstract

The article examines the role of small architectural forms (SAFs) in creating a comfortable residential and recreational environment in residential areas. Based on an analysis of literature, the functional, spatial, social, and operational aspects of SAF use are summarised. Approaches to assessing the quality of public spaces, accessibility, and inclusiveness are analysed, and common criteria relevant to the design of landscaping elements are identified. Requirements for SAFs are systematised according to six criteria: functional suitability, spatial integration, accessibility and ergonomics, safety, durability and maintainability, and aesthetic and social coherence.

Keywords: small architectural forms, SAFs, residential areas, residential environment, recreational space, landscaping, comfort, safety, assessment criteria.

Introduction.

Residential environments are shaped not only by buildings and transport infrastructure, but also by the quality of the open spaces people use every day. An important component of this environment is small architectural forms (SAFs). They support the functional organisation of open areas, create conditions for recreation and leisure, and influence the perception of architectural space [1-7]. SAFs are particularly important in residential areas, where a substantial part of people's everyday activities takes place, including walking, socialising, children's play, physical activity, and short periods of rest. If the space around residential buildings is organised primarily as a transit zone for pedestrians and cars, its recreational and social potential remains underused.

Therefore, small architectural forms should be considered not as a collection of separate landscaping objects, but as a means of organising the residential environment as a coherent whole.

The comfort of such a space is determined by a set of interrelated factors: functionality, aesthetic coherence, accessibility, ergonomics, safety, material properties, and proper maintenance. Accordingly, design should take into account not only the initial appearance of objects, but also how they will be used by different groups of people and how well they will retain their properties throughout their service life.

Analysis of recent studies and publications.

The concept of small architectural forms and their use in Ukraine are regulated by the Law of Ukraine «On the Improvement of Settlements». The law defines SAFs as elements of decorative or other equipment of a landscaping facility [1]. Requirements for landscaping and accessibility provide the regulatory basis for decisions concerning the placement of equipment, the organisation of routes, and safe use of space [2; 8-13]. At the same time, regulations establish mandatory requirements but do not, by themselves, fully address the assessment of space quality from the perspective of the everyday experiences of different users.

In its international guidance, UN-Habitat approaches public-space quality comprehensively, considering accessibility, connectivity, diversity of use, quality, and the equitable distribution of spaces [14; 15]. Methodologies for assessing and designing public spaces emphasise the need to analyse not only physical arrangements, but also the social characteristics of an area and its subsequent management [15]. This is important for the study of SAFs because their effectiveness depends not only on the properties of an individual object, but also on its location, accessibility, and operating conditions.

Studies devoted to public spaces discuss various approaches to assessing their quality. V. Mehta developed a public-space quality index that includes inclusiveness, meaning for users, safety, comfort, and attractiveness [16]. This approach makes it possible to move beyond descriptions of individual landscaping elements and assess a space through a set of interrelated characteristics. A systematic review by A. Gupta, M. Yadav, and B. K. Nayak summarises the principles of universal design and the accessibility of open spaces; the authors emphasise the importance of barrier-free routes, convenient infrastructure, and consideration of the needs of different social groups [17]. Research by E. Kapsalis, N. Jaeger, and J. Hale also shows that inaccessible elements of urban space can limit the independence, safety, and social participation of people who use mobility aids [18].

Another research area concerns the effects of green spaces on public health. World Health Organization materials summarise evidence linking urban green areas with physical activity, psychological restoration,

and social interaction [19]. Anderson and West analyse the relationship between open spaces and residential property values, highlighting the importance of spatial context [20]. These studies do not examine SAFs as a separate object in the narrow sense, but they help identify environmental characteristics that landscaping elements may influence.

A synthesis of the sources reveals a common approach: the quality of open space is shaped by the interaction of physical characteristics, accessibility, safety, social patterns of use, and management. At the same time, criteria applicable to space as a whole need to be adapted to the assessment of specific SAFs – their intended function, construction, materials, and maintenance requirements. Systematising these criteria is the practical contribution of this article.

Aim of the study.

The aim of the article is to summarise the role of small architectural forms in creating a comfortable residential and recreational environment in residential areas and, based on an analysis of regulatory and scholarly sources, to develop a set of criteria for the preliminary assessment of their placement, accessibility, safety, and fitness for operation.

Presentation of the main material.

Small architectural forms are integrated into the environment of everyday human activity and provide conditions for carrying out various practical tasks in public space. They help organise pedestrian movement, separate functional zones, and provide places for rest and leisure. In addition, these elements help maintain order in an area, improve its usability, and create conditions for people to stay safely. In this way, SAFs act as a link between the architecture of the built environment and residents' everyday needs.

Small architectural forms perform utilitarian, aesthetic, and social functions that are closely interconnected. The utilitarian function consists in meeting resident's practical needs. Benches provide places to rest, litter bins help maintain cleanliness, canopies and pergolas offer partial protection from the sun and precipitation, while fences help organise space and separate functional zones. Children's and sports facilities expand the ways in which the areas around residential buildings can be used. The aesthetic function is associated with creating a coherent visual identity for a space. The shape, colour, proportions, texture, and materials of SAFs affect how an area is perceived. The coordinated use of street furniture, lighting, pergolas, and fences helps avoid visual clutter. However, decorative qualities should not take precedence over practicality: appearance must be combined with durability, convenience, and suitability for operating conditions.

The social function is expressed in creating opportunities for communication and the development of neighbourhood ties. Seating areas, shaded resting places, playgrounds, and small public spaces can support everyday contact among residents. For example, benches near a playground allow adults to rest while supervising children, and seating along pedestrian routes provide additional opportunities for older people and people with limited mobility.

Today, the area around residential buildings is understood not merely as a space for vehicle access and parking, but as part of the residential environment intended for rest, communication, and various everyday activities. SAFs help separate areas for relaxation, children's play, socialising, and physical activity. They also help organise pedestrian flows.

The effectiveness of this zoning depends on the placement of elements in relation to pedestrian routes, greenery, sunlight exposure, wind conditions, and noise sources. Seating should be provided where shade is possible and where there is a connection to green areas. Playgrounds should be located so as to ensure adequate visibility, safe surfacing, and separation from vehicle traffic. Thus, what matters is not simply the number of landscaping elements, but a logical system for their mutual arrangement.

Integrated planning makes it possible to support multifunctional use even in relatively small open spaces. It involves creating conditions for short periods of rest, walking, children's play, and social interaction. At the same time, design decisions should be based on an analysis of the area's spatial characteristics and user's needs. The selection and placement of small architectural forms should be determined by the area's function, its planning structure, and its operating conditions. This approach promotes rational use of space and improves the comfort of being there.

The comfort of a residential area depends on how accessible it is to children, adults, older people, and people with disabilities. When arranging such areas, it is necessary to consider unobstructed pedestrian routes, sufficient passage widths, adequate lighting, convenient seating, and opportunities to rest while moving around. Taking the needs of different user groups into account helps create an environment that can be used safely and independently [8-13].

Ergonomics is an important component of comfort: it means that an object's shape, dimensions, and structural characteristics correspond to human anthropometric characteristics and the conditions of use. Benches, for example, should provide a comfortable seat height and sufficient seat depth, while playground equipment should suit children's age-related characteristics and meet safety requirements. Ergonomic characteristics should be considered together with an object's placement: even a comfortable object may be of little use if it is difficult to reach or obstructs movement.

A well-organised space also creates conditions for recreation close to home. Green areas, seating, shade, and opportunities for walking can make spending time outdoors more attractive. However, the impact of landscaping on psychological well-being should not be treated as an automatic outcome of the mere presence of SAFs: it depends on the overall quality of the space, its accessibility, greenery, safety, and conditions of use [9-14; 19].

Safety is also an essential condition for the use of small architectural forms. It involves structural stability, reliable fixings, the absence of sharp edges and hazardous protrusions, and the proper condition of surfaces and joints. Materials must be suitable for outdoor use, including exposure to precipitation, solar radiation, temperature fluctuations, and mechanical loads. For metal elements, corrosion prevention is important;

wooden elements need protection against decay, cracking, and splintering; and polymer materials must retain their integrity under ultraviolet exposure and temperature changes. Particular attention should be paid to surfaces that heat up in direct sunlight, as this can cause discomfort or burns. Surfaces that people come into direct contact with must be safe to touch and free from splinters, burrs, and damaged coating.

The choice of materials affects appearance, strength, resistance to weather, maintenance, repairability, and operating costs. Therefore, the cost assessment of SAFs should not be limited to the initial manufacturing price. Their expected service life, intensity of use, location conditions, and the possibility of repairing or replacing individual components should also be considered. A rational combination of materials and structural solutions can reduce the frequency of repairs and help preserve operational performance.

Durability has not only economic but also functional and aesthetic significance. Faded coatings, corrosion, cracks, deformation, and dirt impair the appearance of an area, while damaged elements may pose a risk to users. Even a well-designed structure requires regular inspection and maintenance. Thus, a comfortable environment is shaped not only during the design stage, but also through the subsequent upkeep of the area.

By comparing regulatory requirements, scholarly publications, and international recommendations, a system of criteria for the preliminary assessment of SAFs has been developed. It adapts general approaches to assessing public-space quality [5-9; 11-17] to the characteristics of specific landscaping elements. The system comprises six criteria: functional suitability, spatial integration, accessibility and ergonomics, safety, durability and maintainability, and aesthetic and social coherence.

The proposed criteria should be applied sequentially: first, check whether an element suits the function of the area and whether it can be accessed safely; then assess its structural, operational, and compositional characteristics. This sequence helps identify situations in which an aesthetically attractive object does not meet the needs of users or obstructs movement. The matrix is advisory in nature and does not replace verification of compliance with current building regulations.

Table 1

System of criteria for the preliminary assessment of small architectural forms (developed by the authors)

Criterion	What is assessed	Indicators of an appropriate solution
Functional suitability	Correspondence to the area's purpose and users' needs	The SAF serves a specific function; the need for it is justified.
Spatial integration	Relationship to movement routes, recreation areas, greenery, and other elements	It does not block passages or sightlines and is logically integrated into the spatial layout.
Accessibility and ergonomics	Usability by different population groups; ease of access and use	Barrier-free access; dimensions and form correspond to the intended use.
Safety	Stability, reliability of fixings, surface condition, and risk of injury	No hazardous protrusions or damage; the structure is suitable for its conditions of use.
Durability and maintainability	Material resistance to environmental conditions; possibility of maintenance and repair	Materials are suitable for outdoor conditions; individual components can be maintained or replaced.
Aesthetic and social coherence	Visual relationship with the surroundings and support for different patterns of use	The SAF is consistent with the character of the space and does not exclude particular user groups.

Conclusions

The analysis has summarised the role of small architectural forms in creating a comfortable residential and recreational environment in residential areas. SAFs have been shown to influence the functional organisation of open spaces and opportunities for recreation, movement, and social interaction. Their effectiveness is determined not by the number of elements, but by the rationale for their selection and placement and by their suitability for users' needs.

The literature review showed that the assessment of space quality should take into account physical characteristics, accessibility, safety, comfort, and social patterns of use. On this basis, a system of criteria for the preliminary assessment of SAFs has been proposed. It covers functional suitability, spatial integration, accessibility and ergonomics, safety, durability and maintainability, as well as aesthetic and social coherence.

The analysis substantiates that the comfort of a space requires consideration of accessibility, inclusiveness and ergonomics, the safety of structures and surfaces, and the suitability of materials for outdoor operating conditions. The durability of SAFs depends on structural solutions, material properties, repairability, and regular maintenance.

Therefore, creating a comfortable environment through the use of SAFs requires an integrated approach combining functional planning, attention to the needs of different users, safety, coherent design, and proper maintenance.

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