ORGANISATIONAL ASPECTS OF THE ARRANGEMENT AND DESIGN OF GREEN SPACE AND INFRASTRUCTURE IN THE AGRITOURISM FARMS: THE CASE STUDY FROM NORTH-EASTERN POLAND

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This paper describes the issues related to the adaptation of the rural areas for the tourism and recreation purposes. The research included the agritourism farms in the north-eastern Poland, which served as an example for the possible arrangement of the green areas with the consideration of the functionality zoning. The goal of the study was to present proposals for the zoning of the agritourism farms areas and development of green space for providing the services for the tourists and increase of the quality level of services. Special attention was paid to the composition of the greenery, communication and the elements of the furnishing used in the passive and active forms of recreation. The tourism infrastructure includes the allotted areas and the elements of the small architecture allowing for the different activities, for example garden ponds and piers, playgrounds, the sports and recreational equipment.

Key words: agritourism, design concept, green spaces, infrastructure, recreation, rest.
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Introduction

The function of the green areas in the agritourism farms. The agritourism is the form of recreation based on the natural environment, which has a significant influence on the production and service surroundings of the farms (Drzewiecki, 2001). The infrastructure, that creates the supporting base, is the indispensable element of the offer. It supplements the rural accommodation and food service, necessary to meet the basic needs of the tourists staying at the farm (Marks, 2005). The recreational area of the farm allows for various types of activities different from everyday chores, like recreational forms of sport or cultural entertainment. This type of recreation revitalizes the physical and psychical powers of the participants (Napierala, 2009). Other than the active recreation in the natural environment, the tourists are provided with the ability to learn about the folk customs, everyday farm activities and to use the products made on the farm (Polucha, 2002).

The green areas are planted accordingly with the strictly specified usage program. On the agritourism farms their functions play the esthetical, protective, didactic and economical role. The division of the farm’s area into zones (decorative, productive and recreational), allows to prepare an attractive offer of recreation and enables the tourists to participate in a variety of activities. Green area is also an advertising tool for the agritourism facility (Marks, 2003). The farm should have an area designated for the purpose of representation, which at the same time is a place for an intimate relaxation. It’s important to create an area accessible to the guests, where they can participate in the farm chores, like an orchard or vegetable...
or herb garden, which products can be used for the food preparation. Tourists will also need a place for a passive recreation and the place for sports and active recreation. All those elements increase the attractiveness of the agritourism facilities and increase the public interest in the recreation in the country. Especially positive conditions exist in the facilities located within distributed villages, where the guests enjoy higher level of the calmness, privacy and peace (Marks, 2003; Mlynarczyk, 2006). Higher level of expectation of the contemporary tourist and increased competition forces the hosts to pay closer attention to the surroundings of the agritourism facility. They may try to develop the farm area on they own or hire the architects. Their invention, knowledge of the systems of modelling of green space and openness to suggestions, has a big influence over the satisfaction and the physical activities interest of the guests (Horyzonty..., 2010, Žukovskis, 2007).

The goal and the methods of researches

The goal of the study was to show the possibilities of the development of the green areas within the facilities, accommodating the needs of the tourists, with the consideration of the functionality and to formulate the author’s proposals of the functional area zoning in the agritourism complexes. The flow and the results of the design work of the recreational space were also presented.

Proposed zoning was prepared based on the analysis of the subject literature and the own research of the multiple agritourism farms located in the north-eastern Poland within the years of 2001-2011, out of which four research subjects were chosen. Graphic interpretation of functional zoning is the extension of previous studies conducted in 1998-2001 (Marks, 2003). The issues related to the design of the green areas and the works of the landscape architect were introduced. The research, analysis and the range of work are presented in the form of methodical recommendations proposed by the authors. The rules and stages of the designing process were specified after careful analysis of multiple methods used in the landscape design and the designers’ experiences Skalski (2007), Senetra and Cieslak (2004), Bajerowski (2000), Napierala (2009) The important part of this paper is played by the introduced concepts of the researched subjects adaptation to the purpose of the sport-recreational facility, created during the didactic process. All of the design work was done within the years of 2009 - 2011 in the cases in Silginy, Linowo, Dorotowo and Pawlowo, villages located in the province of Warmia and Mazury. Special attention was paid to the design greenery arrangement, communication and small architecture in farm areas. Basis of design work were outlines of Neuofert (2007) and selected legislative acts.

Results of the research

The rules and the stages of the designing process of the agritourism facilities. Creation of the recreational space is a complicated process involving realisation of the designer’s idea within a living environment and in accordance with the needs of recreation’s participants. The arranged garden undergoes constant changes due to the growth of plants, so the design needs to offer spaces that will remain attractive during different seasons and through the years of usage. The designed ar-
ea needs to be recognized, researched and analyzed with the methods used in the landscape architecture. The main scope of pre-design work includes:

- inventory of the farm area with existing plants, surfaces, small architecture elements, that uses situation and elevation map as the base;
- soil pH and habitat test in the different parts of the parcel;
- landscape valuation or valorization of chosen elements, especially greenery and architectural objects, in order to expose especially valuable parts of the landscape and esthetical appreciation or to eliminate any inharmonious elements and to point the plants to be removed or replanted;
- landscape analysis taking into account landscape interiors surrounded by walls and the composite links (view axis, points, openings and observation sequences) and distinguishing marks (dominant, subdominant, accents etc.);
- functional separation of the area with specification of the zones designated for the determined recreational activities and adjusted to the age of the participants;
- interview with the owners of the facility and the guests’ survey allowing to obtain their opinion about the green space, their expectations and preferences in connection with spending free time at the agritourism farm.

The final task is to develop designing guidelines and to create the concept, meaning arrangement of the area in the form of the top view with the consideration of the greenery composition, communication system and the elements of small architecture, often with the preliminary measurements. That will be supplemented with catalogues of plants, surfaces, proposed equipment and elements, finishing materials, also review of inspirations. This conceptual study, with the addition of the manual or computer generated visualisations, allows the owner of the farm to start the task of furnishing and adaptation of the area for the purpose of hosting the guests.

The expansion of the concept is achieved by the detailed technical project, generated using digital technique and computer programs, containing the following:

- land leveling, soil preparation, marking of underground infrastructure;
- fencing and communication plan (parking, entrances, roads, driveways, walking trails, walkways, sites, terraces etc.);
- specification of areas and types of the surfaces;
- location of light points (power points, electrical outlets etc.);
- watering systems (underground and above ground sprinklers, pumps, etc.);
- water reservoirs (ponds, waterholes, piers, bridges);
- small architecture and decorative elements (including fountains, cascades, pergolas, trellises, wall abutments, sculpture, gazebos, garden furniture);
- playground and sport-recreational equipment placement;
- list containing the types and quantities of the plants and graphic planting layout and composition of vegetation;
- detailed dimensioning of the zones and chosen elements and surfactant-quantitative summary of materials used;
- executive estimate and implementing work schedule (work calendar).
Creation of the professional project will allow avoiding the errors related to the improper greenery arrangement, the necessity of the removal of the plants in the future and the errors related to the non-functional design of the space. There is a significant importance of the landscape architect’s supervision and the choice of the implementation contractor, which work experience will influence the appearance of the area in the years to come.

**The proposals for the green space use and development at the agritourism facilities.** Proposed solutions for the agritourism facilities consider the local conditions, specific of the facilities, owner’s expectations and the needs of the guests coming from the different tourists’ categories. They should increase the attractiveness of the facility and provide comfortable recreation, while harmoniously integrate with the surrounding landscape. The space around each facility was divided into functional zones adapting the elements described in the concepts (see Fig.).

The selected projects were presented as good-practice experience examples.

**The case of Silginy.** The goal of the design concept was to present the opportunity to develop the area as the future agritourism farm. The design parcel is situated in the village Silginy in the northern part of the province of Warmia and Mazury. Currently, only few guests visit the facility interested in horse riding. The area, where all of the research was conducted, is 0,6 ha. Before the design process started, the inventory and the valuation of plants were done. Furthermore, the soil from the area was also tested. All of the owner’s expectations were taken into account in the design work. In this concept, many different forms of recreation were considered: horseback riding ground, bonfire place, fruit orchard, garden with herbs and vegetables with wooden deck and a bridge. The small part of the area was designated as the playground. The concept establishes the representative part as well, situated in the front and planted with colorful perennial plants. The assumption of the design concept is created in irregular composition, free form, with flowing lines, typical for countryside. Beside the design concept, the technical project of vegetation was created, with species characteristic for rural landscapes, which are resistant to pests and illnesses (Hackiewicz, 2011, p. 43).

**The case of Linowo.** The area covered by this project is located in Linowo, the province of Warmia and Mazury, on the shores of the lake Sasek Wielki. The facility functions as an agritourism farm. It hosts a large number of guests every year in 10 rooms and a restaurant with 60 places, especially in summer (together about 130 guests). The design area is approximately 1,8 ha and it has a diverse terrain. But green space was not adapted to the needs of holiday travellers. Before starting the design work, a survey was carried out among the visitors and an interview was conducted with the owners, which helped to pre-plan the future shape of the designed area. In terms of supporting work, the inventory and landscape analysis were conducted. This allowed determining the most important elements of the facility and adapting the concept to its needs. The division of the area into different zones, adapted to different needs and types of recreation, as well as to different age groups, was taken into consideration. New recreational spaces were created, including bridges, benches, terrace, bonfire place and beach volleyball pitch. In addition, already existing elements, such as a space for a hearth, a pier over the lake, or
parking were modernised. All of these elements were complemented by the composition of vegetation, primarily the species that can be found in the vicinity of the tourism farm. The area has been improved in a way that significantly enhances the attractiveness of this place and certainly makes it more functional (Orlowska, 2011).

**The case of Dorotowo.** This concept has been created for the parcel situated in Dorotowo, in the province of Warmia and Mazury. Number of rooms in this facility is 12, there is also room for special events for 50–60 guests. The design area is 5.69 ha. The goal of the researches was to present solutions which can fulfil needs of all visitors hosted at the agritourism farm. Field works were carried out, like dendrochronology, inventory and valorisation of the buildings as well as the pavement and the greenery. Technical aspects of the terrain were also taken into consideration. Owner of the facility was interviewed in order to meet his expectations. His suggestions are reflected in the concept. Area for sport activities like volleyball, tennis, shooting range, throwing horseshoe, outdoor bowling and chess was allocated. Part of the land is reserved for the children's playground. „The Willow Valley’s Road” has been designed along the lake’s shoreline. The project consists of a bridge, fountain, bonfire place, gazebos and benches, all of which are the elements of small architecture. The green area was created in the rural style to co-exist with surrounding countryside in the best effort. Together with the concept, the technical project of greenery was design (Nosek, 2010).

**The case of Pawlowo.** The object of this project was to create a landscape development concept at a rural tourist facility in Pawlowo, the village in the province of Warmia and Mazury. In this facility with 5 rooms and restaurant for 80 customers the number of guests increases to 200 during the tourist season. The design space, where the research was conducted, is 5.3 ha. General untidiness and low aesthetic environment called for creation of a new concept for the development of this area. On the basis of the literature, as well as research and observation, it was determined what elements should be in the vicinity of the Hungarian inn-restaurant. Studies involved mainly inventory, analysis and valorization of landscape, functional scheme and diagnostic survey among the guests of the facility. The concept includes the use of the following elements: ergonomic communication system with parking, a garden pond with a pier, a playground for children, a number of garden buildings with decorative features and a landscaping equipment facility. All elements are to provide the best conditions for rest during the break while traveling. A very important part of the whole composition is vegetation. It consists of trees, shrubs and perennials chosen in such a way, that they beautify and complement the whole premise. Greenery also serves as a protection and fosters relaxation. The primary criterion in creating the concept was to obtain a feeling of harmony between the newly created composition and the natural surroundings. The landscape development will certainly increase its attractiveness of the facility and the number of tourists (Kruszewski, 2011).
The main idea of the functional zoning within the agritourism facilities is based on the understanding: all areas for recreation must be acceptable with human needs. Therefore the models and plans of the territories in the agritourism farms foresee to combine the production, representative and recreational areas (see Fig.). If this task will be solve as well as the investment be successful, the tourists will be satisfied and have much more reasons come back. The tourists from the cities want to spend more time in rural green areas, fruit orchards, vegetable and herbal gardens near the playgrounds and sport fields with the comfortable conditions for the rest.

**Conclusions**

1. The green areas, with supplements in the form of elements of communication and small architecture, play a decisive role in the attractive appearance of the agritourism facilities.

2. The surrounding greenery, fields, forests and meadows naturally fit into the country landscape. On the other hand, the managed green space needs a special care in order to provide the tourists with the rest and relaxation in a friendly sur-
roundings, in the natural environment. Those elements influence the popularity of the tourism in the countryside.

3. The agritourism farms, thanks to the adaptation of the green areas to the needs of the guests, turn into very attractive places for the recreation purposes. The variety of choices for spending a free time and the aesthetic and health values of the green areas skillfully blended into the landscape are the basic assets of the contemporary recreational space. It is necessary to implement such functional solutions, which will improve the quality of the agritourism services and assure the comfortable recreation for the tourists.

4. Special attention needs to be paid to usage program and the zoning of the space with the arrangement of the greenery and the small architecture. Within the functional zones, variety of attractions needs to be provided for the different age groups and different interests. It’s important to design the components allowing for the passive recreation as well, as for the physical activities and sports.

5. Thanks to the changes implemented by the landscape architect, the attractiveness of the facilities increases, which results in the popularity of the agritourism farms.

6. Development of the green area in accordance with rules of composition, allows for the harmonious integration of the arranged space with the surrounding landscape.

List of references

Straipsnyje nagrinėjamos vadybinės, o tiksliau organizacinių, žaliųjų erdvių ir infrastrukturos modeliavimo (projektavimo) problemas ikiuose, vystančiose kaimo turizmo (Lenkijoje naudojama sąvoka „agroturizmo“) verslą. Studijos rengimo metu buvo tiriami šiaurės rytų Lenkijos, Varmijos–Mozūrijos regiono agroturizmo ūkiai. Naudojant sisteminio modeliavimo (projektavimo) ir atvejo analizės metodus buvo pateikti keturi skirtingi žaliųjų erdvių ir ūkių infrastrukturos išdėstymo pavyzdžiai. Apibendrinti ir straipsnyje pateikti atvejai parodo įvairias galimybes, kaip kaimo turizmo (agroturizmo) ūkyje galima suderinti žaliąsias ir funkcinės erdves. 

Studijos tikslas buvo pasiūlyti vadybinės–organizacinės priemones, tinkamas modeliuojant (projektuojant) ūkių, vystančių agroturizmo verslą, teritorijas, siekiant jas pritaikyti vis augantiems poilsiautojų poreikiams.

Modeliuojant ūkio teritorijas, ypačiuojamos dėmesys buvo skiriamas žaliųjų plotų kompozicijai bei komunikacinio sistemų, įvairių įrengimų, naudingų aktyviam ir pasyviam poilsui, išdėstymui. Numatytos vadybinės (organizacinės) priemonės padeda projektuoti ir pateikti ūkio visumą, kartu įskiriant tam tikras funkcinės teritorinės erdvės (zonas) ir susieti jas su mažosioms architektūros elementais: nedidelės vandens telkiniai, stadionais, sporto ir vaikų žaidimų aikštės ir t. t., kurie padeda suformuoti tinkamas sąlygas poilsui.

Reikšmingiai įrodžiai: agroturizmas, dizaino koncepcija, infrastruktūra, kaimo turizmas, rekreacija, poilsis, žalios erdves.

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