

## Designing gardens for hortitherapy

EWA KOSIACKA-BECK, IZABELA MYSZKA

Faculty of Civil and Environmental Engineering, Warsaw University of Life Sciences – SGGW

**Abstract:** *Designing gardens for hortitherapy.* Hortitherapy is a phrase that can be understood in many ways, but above all it depicts a set of activities that include working in specially designed gardens. This article will focus on gardens that aim to help in therapy for people with neurodegenerative and mental health diseases. What catches our attention is that the matter is usually approached through the importance of garden therapy, yet most of the research pays little attention to the design part of the process. The methods used while composing a space for the use of therapy consists of the general rules of designing a landscape and the needs of the patients that are to benefit from the therapy. Thanks to the research, we have established that particular needs of patients with mental disabilities require particular landscape elements. These elements are correlated with particular disabilities and needs. Garden design for hortitherapy in its specifics shows the possibilities of spatial organisation to make it special in a way that comprehends patients' needs and embodies the procedures and conditions of standard therapy.

*Key words:* garden, hortitherapy, garden design for hortitherapy

## INTRODUCTION

Gardens are special spaces. We compose them so that they connect the human with nature in a way that enables us to keep the garden space in a particular order, compose it, give it a meaning and value.

The history of garden design, and modern typologies demonstrate the sty-

listic and formal variety of gardens, which depends upon the function of the particular garden (Hobhouse 2005, Myszka-Stapór 2014). Therefore, we can distinguish church gardens, household gardens, gardens that are spaces for art exhibitions and many others.

Although there are different types of gardens, they are always associated as special places in landscape, calm places for relaxation, places where one is surrounded by the beauty and harmony of nature. As with the ancient Arcady or the biblical Eden, gardens have been linked with the idea of happiness. Therefore, in our culture, the garden is a symbol of prosperity. Following from that, we can also perceive one special kind of garden space – one that is designed for therapy – in this case hortitherapy.

Hortitherapy is a phrase that can be understood in many ways, but above all it depicts a set of activities that include working in specially designed gardens. Apart from general landscape design, hortitherapy is also connected with composing special groups of flowers or flowerbeds. Although all of those define the phrase, the essence of hortitherapy is to design a garden space in such a way that it is suitable for therapeutic activities (Kalina et al. 2015). In practice, this means composing a space in order for the participants to get the best out of

the whole experience, to challenge their needs in balance with nature.

The uniqueness of gardens designed for the use of hortitherapy is strictly connected with their function. They are designed for people with special needs and particular therapy requirements. Therapy centres are equipped with special care essentials aimed to help therapy participants. While designing a garden space intended for therapy, it is crucial to account for the care and equipment that is provided for the patients by that particular centre. That applies to the special way and order in which we plan and compose the garden space for the use of therapy for each disability.

This article will focus on gardens that aim to help during therapy for people with neurodegenerative and mental health diseases.

Hortitherapy has been analysed in many research papers. The welfare and the sense of prosperity that specially designed gardens guarantee to the therapy participants has been explored by scientists for a long time. The history of designing a space for therapeutic use is described in "Garden history" (Hobhouse 2005).

The welfare connected with being in the garden is the topic taken up by Stigsdotter and Grahn (2002). They are looking for guidelines for designing a garden that provides a sense of well-being. They call it the "healing garden". They pay attention to the necessity of creating different garden spaces so that people with various dysfunctions could also use them.

The author mentions not only the effect of the therapy, but also the importance of the presence the sublime in the

garden space. This matter has been also raised by authors that work on different types of therapy for people with mental health diseases, they also include some research on reducing stress and aggression levels (Skórny 1994, Nowak 2008, Latkowska 2009, Radzewicz 2015). They distinguish two types of therapy, active and passive, as well as the methods of aromatherapy and chromotherapy (based on the interaction of colour). The research includes plants that affect our senses in a particular way, that stimulate our senses through touch, smell or even hearing (Kaplan and Kaplan 1989, Cooper and Barnes 1999). Płoszaj-Witkowska (2014) focuses her research on the influence of plants on the health of disabled patients. By working with disabled children, she measures the possibility of therapy based on the patients' interaction with plants, and their potential improvement afterwards. The sessions suggested by Płoszaj-Witkowska include activities which might be associated with the art therapy, such as creating special flower compositions.

The part of creating a particular plant composition just to use the "tools" needed during the therapy is a matter that Radzewicz (2015) deals with, and points out its importance during sessions, such as for example cooking sessions where the patients can use the edible plants from the flowerbeds that they grew. Apart from that, some authors (Latkowska 2008) focus on the aesthetic values of the therapy, namely the influence of flowers on the health of patients. Latkowska and Miernik (2012) also highlight the significance of working with plants on the mental and physical improvement of the general condition of participants. How-

ever, working in those gardens not only limits participants to the use of flowers. The usable type of garden – one that includes herbs, fruits and vegetables – guarantees a far broader range of use. Therapy through this sort of garden involves more processes, which makes patients feel more attached to the interactions than those connected with planting or cooking (Ożarowski and Jaroniewski 1987). What catches our attention is that the matter is usually approached through the importance of garden therapy, yet most of the research pays little attention to the design part of the process. The rules developed for composing a garden space that applies for the therapy of people with autism show the significance of particular elements in a designed space on the health of autistic patients.

## MATERIAL AND METHODS

In order to establish the rules for designing a garden space for particular disabilities, we decided to choose therapy centres that support people with mental disabilities.

After visiting several medical centres, we had to select those that were spacious enough and most suitable for potential therapeutic gardens.

For every centre there were several garden concepts that were later on analysed and used as an indicator for further steps in designing a space for therapy. The initial basic material for our research was based on the work done by our students for the course connected with hortitherapy conducted as part of the fifth term of the Landscape Architecture course at Warsaw University of Life Sciences – SGGW.

Over a four year period, 2014–2018, we established four cases of disease and therapy centres that could benefit from our research:

- autism – in the gardens in Wilcza Góra (10 concepts were created);
- Alzheimer’s disease – in the garden next to the Alzheimer’s Centre in Warsaw (7 concepts were created);
- serious mental trauma – in the garden next to the psychiatric hospital in Drewnica (5 concepts were created);
- addictions – in the centre in Kazuń-Bielanach (19 concepts were created).

Design work is always based on coordinating and collaborating with the therapists. The designer comes up with the following types of solutions:

- meaningful ones – that are in accordance with the rules of planning a normal garden space, as well as the ones for the use of therapy;
- functional ones – that apply to the needs of the patient, that have been previously established by the therapists;
- compositional ones – that apply to the general rules of composing a landscape space.

The students working on the design concepts worked in groups of three. Concepts were made after area analysis and discussions with the therapists, and corrected as suggested by therapists and users.

The conceptual solutions were presented and discussed with the patients and therapists in order to establish the best improvements. We changed some aspects only after discussing them with the potential users and benefactors of the therapy, so that it applied for all their

needs, and the results of the therapy. This was done in order to avoid any misinterpretations, as patients may find some aspects more or less helpful, or useful only after the actual visit in the designed space.

The process of design requires the steps illustrated in Figure 1.

The concepts that were established during the designing a space for the use of hortitherapy course became the research material for the detailed rules for creating a therapeutic space for particular diseases.

The main task for the designers was to connect the rules of composing a landscape with the particular needs of the patients, so that both aspects were treated with the same level of importance. The methods used while composing a space for the use of therapy consists of the general rules of designing a landscape and the needs of the patients that are to benefit from the therapy.

The plans that we established with the help of therapeutic centres enabled

us to gather research material and generate new methods.

The concept was based on choosing compositional elements that have a specific influence during therapy that were discussed between the designers and therapists (Fig. 2).

First, we distinguished the elements indicated by the therapists as crucial for the therapeutic use of the garden. Then we compared them with the rules of composing a landscape with the needs of the patients that were to benefit from the hortitherapy.

While developing the particular features of garden spaces to be used for therapy, it is essential to follow the methods and procedures used during basic therapy.

In the concepts, an analysis of combinations of garden elements of therapeutic significance was used, establishing their form and function. The research procedure diagram refers to the methodology in determining the form, function and significance of the garden elements

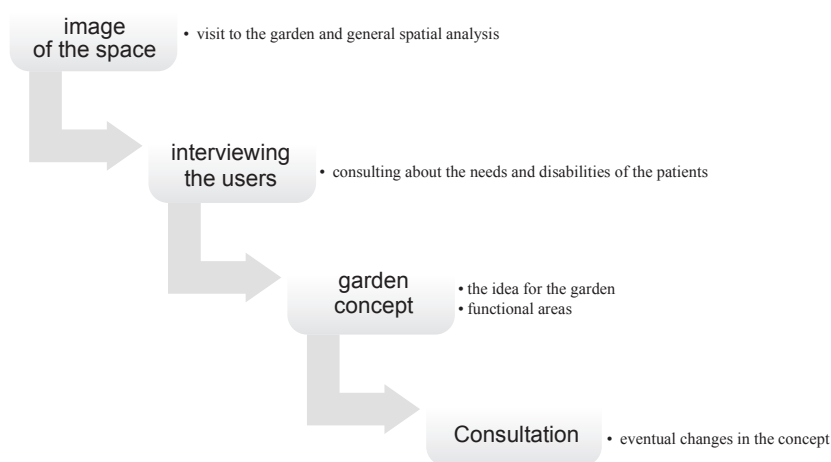


FIGURE 1. Designing a garden space for the use of hortitherapy

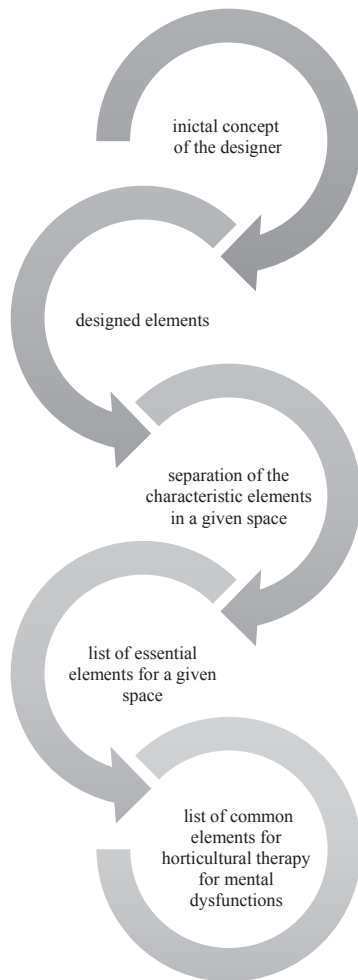


FIGURE 2. Steps in preparing the design concept

(Myszka-Stapór 2014). The significance of garden elements was determined through interviews with the therapists and patients. While establishing the project of our design, our major focus was on using the information gathered from the interviews with patients and therapists.

## RESULTS AND DISCUSSION

The benefit of being in a garden is a result of the harmony of the space created by the rules of design and function customized to suit the dysfunctions of the users. In order to make the designed garden a place that supports therapy, the landscape concept must be designed in a way that follows and applies particular rules connected with the needs of the patients that are to benefit from the therapy conducted in this space. Thanks to the research, we established that the particular needs of patients with mental disabilities require particular landscape elements. The elements are correlated with particular disabilities and needs.

The juxtaposition of the elements used during hortitherapy is presented on the chart below. Each colour represents the level of importance of particular elements in the process of creating a space for the use of therapy (the table).

The tabular juxtaposition establishes that in hortitherapeutic gardens both decorative and use elements, such as boards with descriptions and paths, are crucial.

## GARDENS FOR THE USE OF AUTISM THERAPY

The garden designed for autistic adults is located in Wilcza Góra, on the outskirts of Warsaw. Participants can use the space on a weekly basis, which means that the garden is open for them from Monday to Friday, from 8:00 till 16:00.

TABLE. List of essential garden elements for hortitherapy

No	Element	Form	Function	Autism	Alzheimer's disease	Mental health issue	Addiction
1	title	the name for the concept, named by the creators, in accordance with the design idea that will be realised	describes the content of the design, and the main therapeutic motive				
2	inscriptions and codes	boards with information in gardens	enables orientation in the space				
3	fences	traditional fences in gardens	boundary				
4	entrance	doors, fence, gate	availability of the garden space				
5	path	pedestrian path, circular path	conducting, sensing, setting goals to achieve, construction for the use of decorative elements				
6	square	paved surface	place for social gatherings				
7	buildings	house symbols, floor, walls, roof	place for social gatherings and some intimacy				
8	decorative plants	trees, ornamental bushes, perennial compositions	affecting the senses				
9	artefacts	elements made during art therapy	representation, establishing symbols and associations				
10	water	maintained in forms that enable temporary usage	affecting the senses, associated with relaxation, entertainment, fun				
11	animals	cats, dogs	caring				
12	crop plants	composing flowerbeds, greenhouses, vegetables, herbs, fruit trees	physical work, participating in growing plants and seeds,				

TABLE cont.

No	Element	Form	Function	Autism	Alzheimer's disease	Mental health issue	Addiction
13	useful elements	furniture, gym objects, smoking space	relaxation, isolation				
14	water	watering cans	participating in the process of watering plants, physical participation				
15	animals	chickens, hens	being surrounded by animals				

Legend

irrelevant	relevant	quite relevant	very relevant
------------	----------	----------------	---------------

In exceptional circumstances, gatherings also take place at weekends. The space has been designed to hold meetings of approximately 25 disabled people and their therapists.

The garden space includes building intended to be the room for the sessions and one unused guest house. The garden space has been designed in a way that is most appropriate to be used during therapy. The introductory assumptions included the necessity of including the following elements:

- distinction of the space to include different parts of the garden that are in accordance with the needs of patients;
- crop garden;
- areas for social gatherings;
- workshop space within the garden;
- space for active and passive recreation;
- decorative and representative sphere.

We established 10 concepts. The discussions that we had enabled us to be more precise in designing ideas and so-

lutions. Thanks to the formal analysis we created a list of guidelines (see chart) for designing hortitherapeutic gardens for autistic adults.

To conclude our research, it is crucial to acknowledge that in those special garden spaces some particular elements must be included:

1. A functional distinction that will work for both hyperirritable and calm patients.
2. Highlighting readable boundaries between spaces with different functions.
3. Marking the space with clear signs according to the different functions they have within the garden.
4. Affecting the senses through different spatial solutions, for instance sculptures, hills that enable patients to roll around. Although this might sound quite unusual, it is a crucial aspect from the perspective of the therapist.
5. Affecting the sense of touch by intensifying particular features of the garden. For instance, building labyrinths



- out of hedges that make it impossible for the patient to go through them without touching the plants.
6. Water as an element of sound and tactile therapy, where patients can actively participate and have the chance to engage with water fountains or small springs from the ground.
  7. Crop garden that will enable the patients to experience different processes of work and growing plants. Composing flowerbeds in a way that is accessible to people with physical disabilities.
  8. Creating circular paths is a very characteristic feature of this garden space as it enables therapists to make some exercises for patients, for instance to go the same way two or three times.

These guidelines were established thanks to the consultations established after presenting the initial ideas.

### GARDENS FOR ALZHEIMER'S DISEASE THERAPY

The garden near the Alzheimer's Centre is located in Warsaw's Mokotów district. The space is quite awkward, because the area where older patients with multiple physical dysfunctions operate is quite bumpy. The many ups and downs exclude a part of the space from the possibility of usage. There is only very limited area in which we can establish our therapeutic designs and that is within the courtyards of the centre (Fig. 3).

The guidelines for designing a space that supports Alzheimer's disease therapy were established during analysis. The research showed that the following elements must be included:

1. The location of the garden must be on a flat area.
2. Giving the space the character of a courtyard, as remembered by the patients. In accordance with the therapists' advice, the garden space should include some elements that remain in the patients' memories: like granny's garden etc. Unfamiliar, modern solutions are not the best for these patients, as they do not have any previous associations with them, and therefore the therapy is not be as effective as in a space that evokes memories for the patients.
3. Hiding the entrances. A specific of the disease lies in the need to escape and hide from others. Therefore we should include hidden entrances.
4. Because of the fact that we will be hiding the entrance, we need to develop the signs. However, the garden paths should still be circular, they should not necessarily direct the right way to the entrance, at least not too obviously.
5. Some of the plants in the garden should not be edible. As, once again, a specific of the disease makes the patients try and put everything in their mouth, we need to decide whether every plant in the garden is edible or not, so as to make a clear message for the patients, yes you can, no you cannot.
6. Making it clear that if we previously established that the plants will not be edible, we need to put some stone fragments etc. to highlight to the patients that they are not allowed to eat garden elements. This is in accordance with point 5.

Once again, all of those points have been established and discussed with the therapists and agreed together after several interviews.



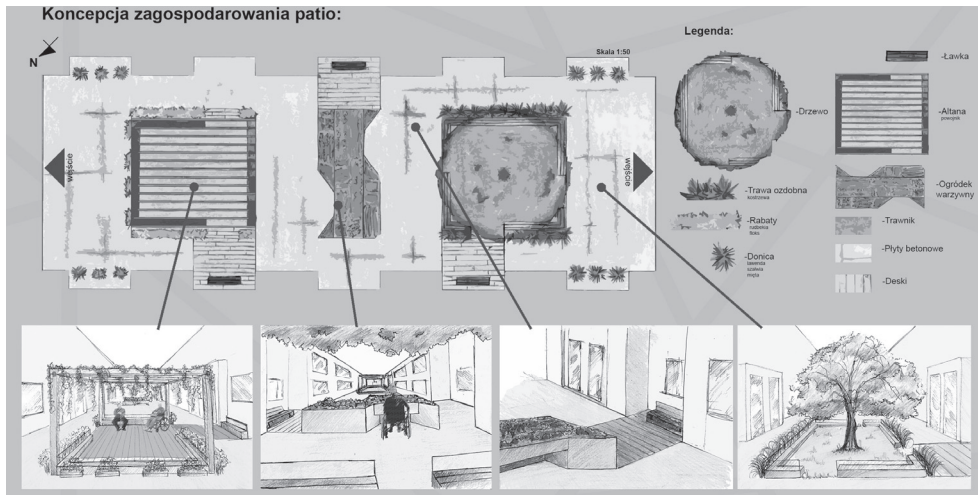


FIGURE 3. Garden interiors in the Alzheimer's Centre in Warsaw, with possibility of being used in therapy

## GARDENS FOR PATIENTS WITH VARIOUS TRAUMAS

People with various traumas are those that need to go through different types and processes of therapy. Firstly, they need isolated therapy, then to be hospitalized with a lesser level of isolation, and then, finally, the last part of the therapy is to enable them to function in a normal environment. The therapy is based on a series of daily care, suitable for eight hour sessions in the therapy centre.

The space that we designed is located next to the psychiatric hospital in Drewnica, near Warsaw. The patients that are to benefit from the garden therapy are people who have already completed the first level of therapy and now are trying to function in the normal environment.

Thanks to our discussions and analyses, we established particular features for our gardens:

1. The garden space should be a place for general integration. It is crucial

to develop at least one space where the patients can integrate with one another.

2. The space should include a part where the patients can show the work that they have done during art therapy.
3. The paths in the garden should be developed in a way that enables patients to create "journeys" in the garden, which is also a way of giving them a chance to become more and more active.
4. We should decide upon not making any barriers in the garden space, so as to prove to the patients that they are not being isolated once again, as they were at the beginning of their sessions at the hospital.
5. It is crucial to include some flowerbeds, in order to demonstrate to the patients different processes of work and plant growth.

The above issues were discussed with both therapists and patients. Thanks to the discussions held with the supervisors

of the therapy, it became crucial to get the disabled involved in the process of designing the garden space.

## GARDENS FOR PATIENTS WITH ADDICTIONS

People who are undertaking therapy related to recovering from addictions remain in closed centres. Therapy takes a year, and in this time patients go through different levels of isolation. Their world shrinks to the garden space.

The garden is like a domestic garden, where vegetables and herbs are grown, chickens are raised. It is a place of family meetings; for the patients it's a space of hard work and taking responsibility for their actions. However, the domestic garden requires introducing harmony and order into the concept. The work that was put into the recomposition of the garden showed the aspects and features that must be included during the process of composing a garden space for people with addictions:

1. Utility garden as a work environment and a place to carry out therapeutic procedures through work.
2. Domestic animals – chickens in the garden – as an expression or display of taking responsibility and custody/caring.
3. Setting up the space for spending time in company.
4. Including an option of memorialization in the garden; a symbolic representation of defeating addiction. Pathways become an element along which it is suggested to set out symbolic elements – tables and signs.

Gardens for patients with addictions are an exceptional therapy space, considering the fact that during this particular therapy the supervisors have to develop a sense of a working process. People with addictions spend time in isolation, so that the garden tends to become their micro-universe. It is our aim to make people feel engaged in the activities held during therapy but also to guarantee them a place of calm and harmony.

## CONCLUSIONS

The cooperation entered into with therapeutic centres, and common considerations about space, reveals the aspects that attention should be paid to while designing a hortitherapy garden.

The coordination between landscape architects and therapists is the key for designing horticultural therapy for people with mental illnesses. A horticultural therapy garden is a place of well-being for the ill, as well as for their supervisors. The first conclusion that arises is the awareness of therapeutic effects of a well-designed space, in which the essentials are appropriate zoning, fences with entrances, and garden equipped with elements providing a sense of well-being.

According to medical workers/specialists, merely entering into these kind of activities, such as consulting designs, discussion and searching for solutions, can be a medium for therapy. Thinking about gardens as a medium in therapy does not limit in any way the usual conditions that are found in therapy rooms. It turns out that working in the garden is, in itself, a kind of therapy.

The most effective work process is using the garden for cultivation, which requires constant involvement in tending the plants, and provides patients with tangible results of their work in the form of vegetables, herbs and fruits. Designing the garden pathway properly, making it an “assignment” for patients, is equally important. Its setup and direction, materials and elements arranged near it are factors in a therapeutic game of the prosperity of soul and body. What came as a surprise to the designers was the need for a smoking area in each garden type. Every time, it was important to design a place dedicated for family meetings, ending the need for privacy and making the garden an area providing this kind of intimacy. The necessity of ornamental plants, that operate on the senses and fulfil educational, aesthetic and therapeutic values, also became a crucial issue during the discussions held with both therapists and patients.

Garden design for hortitherapy in its specifics shows the possibilities of spatial organization to be specially arranged in a way that comprehends the needs of patients and embodies the procedures and conditions of normal therapy.

## REFERENCES

- COOPER M.C., BARNES M. 1999: *Healing Gardens: Therapeutic benefits and design recommendations*. John Wiley & Sons, Chichester.
- HOBHOUSE P. 2005: *Historia ogrodów [Garden history]*. Arkady, Warszawa.
- KALINA A., KOSIACKA-BECK E., MYSZKA-STĄPÓR I., SKIBIŃSKA M. 2015: *Projektowanie ogrodów dla osób chorych z autyzmem – zasady projektowania [Horticultural therapy gardens for adults with autism – guidelines for designing]*. *Ann. Horticult.* 26 (2): 13–26.
- KAPLAN R., KAPLAN S. 1989: *The experience of nature*. Cambridge University Press, New York
- LATKOWSKA M.J. 2008: *Hortiterapia – rehabilitacja i terapia przez pracę w ogrodzie [Hortitherapy – rehabilitation and therapy through work in the garden]*. *ZPPNR 525*: 229–235.
- LATKOWSKA M.J. 2009: *Ogród bez barier – jak urządzić ogród dostosowany do potrzeb osób z niepełnosprawnością ruchową i sensoryczną [Garden without barriers – how to arrange a garden adapted to the needs of people with physical and sensory disabilities]*. In: B.J. Gawryszewska (Ed.), *Ogród za oknem. W poszukiwaniu formy*. Wydawnictwo Sztuka Ogrodu. Sztuka Krajobrazu, Warszawa.
- LATKOWSKA M.J., MIERNIK M. 2012: *Ogrody terapeutyczne, miejsca biernej i czynnej „zielonej terapii” [Therapeutic gardens – places of passive and active “green therapy”]*. *Czasopismo Techniczne. Architektura* 109 (8A): 245–251.
- MYSZKA-STĄPÓR I. 2014: *Elementy ogrodowe. Ich forma, funkcja i znaczenie [Garden items. Their form, function and meaning]*. Sztuka Ogrodu. Sztuka Krajobrazu 3.
- NOWAK J. 2008: *Terapia ogrodnicza w krajach europejskich [Horticultural therapy in European countries]*. *ZPPNR 525*: 271–276.
- OŻAROWSKI A., JARONIEWSKI W. 1987: *Rośliny lecznicze i ich praktyczne zastosowanie [Medicinal plants and their practical application]*. Instytut Wydawniczy Związków Zawodowych, Warszawa.
- PŁOSZAJ-WITKOWSKA B. 2014: *Hortiterapia [Hortitherapy]*. Wydawnictwo Uniwersytetu Warmińsko-Mazurskiego, Olsztyn.
- RADZIEWICZ J. 2015: *Hortiterapia, czyli zbawienny wpływ roślin na zdrowie człowieka [Hortitherapy, or the beneficial effect of plants on human health]*. *Rolniczy Magazyn Elektroniczny* 69.

- SKÓRNY Z. 1994: Psychospołeczne mechanizmy agresywnego zachowania się a arteterapia [Psychosocial mechanisms of aggressive behavior and art therapy]. In: W. Szulc (Ed.), Kulturoterapia – wykorzystanie sztuki i działalności kulturalno-oświatowej w lecznictwie. Wydawnictwa Uczelniane AM, Poznań.
- STIGSDOTTER U.A., GRAHN P. 2002: What Makes a Garden a Healing Garden? J. Therapeutic Horticult. 13: 60–69.

**Streszczenie:** *Projektowanie ogrodu dla hortiterapii.* Hortiterapia ma szerokie spektrum rozumienia. W tym pojęciu mieszczą się działalności związane z pracą w ogrodzie czy twórczością wykorzystującą ogrodowe elementy. W artykule skupiono się na ogrodach przeznaczonych do terapii dla osób zmagających się z chorobami neurodegeneratywnymi i psychicznymi. Rozważania o sposobach włączenia chorych w różne aktywności ogrodowe są bogatym źródłem informacji o funkcjonowaniu ogrodów terapeutycznych, jednak uwagę zwraca marginalne traktowanie aspektów związanych z projektowaniem. Metodyka postępowania w projektowaniu ogrodu dla hortiterapii wynika z połączenia uniwersalnych zasad projektowania przestrzeni oraz celowego stosowania rozwiązań odnoszących się do kon-

kretnych dysfunkcji użytkowników organizowanej przestrzeni. W wyniku przeprowadzonych analiz stwierdzono, że zasady projektowania dla hortiterapii nie są uniwersalne, a zróżnicowanie w doborze elementów i ich form jest skorelowane z dysfunkcją użytkowników ogrodu. Projekt ogrodu dla hortiterapii w swej specyfice ukazuje możliwość takiej organizacji przestrzeni, aby stawała się ona miejscem szczególnym, ukierunkowanym na potrzeby chorych wynikające z ich dysfunkcji.

*Słowa kluczowe:* ogród, hortiterapia, projekt ogrodu dla hortiterapii

*MS received:* 24.06.2018

*MS accepted:* 25.10.2019

**Authors' address:**

Ewa Kosiacka-Beck  
(<https://orcid.org/0000-0002-1696-0415>)  
Izabela Myszka  
(<https://orcid.org/0000-0002-8820-4053>)  
Katedra Sztuki Krajobrazu  
Wydział Budownictwa i Inżynierii Środowiska  
Szkoła Główna Gospodarstwa Wiejskiego  
w Warszawie  
ul. Nowoursynowska 166, 0-787 Warszawa  
Poland  
e-mail: [izabela\\_myszka@sggw.pl](mailto:izabela_myszka@sggw.pl)