Social Rehabilitation of People Convicted for Crime Committing by Means of Architecture and Landscape Design (Hybrid Space of Social Adaptation Centers)

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Abstract. The purpose of the research is providing a rationale for the design of special areas aimed at the psychophysical discharge (landscape gardens, special recreation areas in the premises of social adaptation centres) for the people who were imprisoned for crime commitment. To achieve the purpose set, the authors state and implement the following objectives: study of medical and psychological aspects of a person staying in the places of detention, consideration of green area arrangement issues - landscape remedial gardens in terms of botanic, analysis of the existing social adaptation centres, revelation of positive and negative points of their use, suggestion of solutions for the problems identified, analysis of various options of the landscape garden layouts, development of the concept for and suggestion of the arrangement of areas intended for psychophysical discharge in real situation. Basing upon the analysis of the experimental project the authors suggested the fundamental principles for the arrangement of the areas of psychophysical discharge and efficient rehabilitation at the Social adaptation centres intended for the people convicted and released from the places of detention. The authors defined the use of special plants to make the microclimate healthier and create the favorable video environment - using harmonious non-aggressive forms in the interiors, using green planting to reduce human stress, using green planting components for buildings and the functional zoning of plant trees and shrubs. At the uniform architecture&layout and technology space solution multiple scenarios may occur in terms of such space use by means of the application of psychological discharge areas with various green planting. It is necessary to stipulate for the free access to the rehabilitation centre space and landscape garden territory for disabled people.

1. Introduction

One of the priority areas of state policy in the development of the penal and correctional system defined by the correctional law of the Russian Federation and the Decree of the Government of RF No. 420. [1] defined the reduction in crime repetition, humanization of the confinement conditions, provision and improvement of guarantees on the observance of rights and legal interests of the imprisoned. A great amount of problems and difficult situations the imprisoned face during the service
of punishment adversely affects their further social life. Such an experience, negative social attitude towards the discharged from imprisonment can cause the repetition of the offense.

In Russia the prison terms are long. According to the data provided by the All-Russia Civil Forum experts in 2017 the EU countries sentenced approximately 40% of all convicted people for detention of up to 3 years (13% were imprisoned for less than a year), for detention of 3-5 years and 5-10 years - 19% and 23% of the convicted. In Russia the figures are different. 24% of the convicted were sentenced to 3 or less years of detention, 23 % were sentenced for 3-5 years of detention while 35% of the convicted were sentenced for 5-10 years, and 18% of the convicted were imprisoned for more than ten years [2]. The statistics of crime repetition in Russia is one of the most grievous in the world: 85% of a total of 673 thousand convicted are the people who were convicted twice and more times [3]. For the first year after the release from prison up to 34% of the convicted commit crime again.

The society is not released from its obligations when the person is discharged. That is why it is necessary to have public or private bodies that may care of the people discharged assisting them in their integration into social life” [4]. The former imprisoned are especially vulnerable in the period of 6-12 months after being freed. During that time they need to rebuild their ties with their family and friends, find the place to live in and job and take back the responsibility for their own lives. It is not an easy task for everybody to cope with it independently that is why the support provided is essential for the reintegration into the society during this period. It helps to organize the life again.

2. Relevance
In the Russian realm after the discharge from detention the former convicted are registered with the penal enforcement inspectorates. There are several types of public support and rehabilitation stipulated for the former convicted. The first type includes employment centres which help to obtain the status of an unemployed and apply for corresponding further unemployment benefit. Further, the centre offers vacant positions, professional training and educational professional guidance events. The second option are social adaptation centres. They provide temporary accommodation to the homeless and help them to restore documents, give them legal assistance. The main objective of the centre employees is to help their guests integrate into the social life and stop looking back at their criminal past, leave behind the behavior patterns common for the imprisoned. [5].

According to the data of 2017-2018 only 20% of the former convicted address the employment centres and only one third of them get employed. On average, only 7% of such people go to professional education courses, and only 35% of them get employed afterwards. One of the reasons we have such statistics is that not many employers are ready to employ the former imprisoned; however, the hidden side is the fact that not all of the former convicted can endure the pace of a modern city. The important thing is to build and preserve social ties with the friends, family and relatives. Such help is not always possible to be rendered in social adaptation centres.

One of the problems of people after prison is their state of health as 3-9 % are HIV-positive while 4% suffer from psychic diseases; about 3% have alcohol and drug addiction, and about 7% suffer from pulmonary tuberculosis [6]. A large amount of the convicted suffer from hepatitis B and C. This brings about the need to provide medical services and monitoring their state of health in the places of their residence. The problem of rehabilitation and socialization of the convicted is relevant as the person gets used to the rules and conditions of corrective institutions after a long time in prison. It is difficult for people to take independent decisions; however, independence and responsibility is exactly the former convicted need after discharge.

3. Problem statement
In 2021 the Russian University of People’s Friendship conducted the research to develop the principles of architecture&layout solutions for the spaces aimed at the rehabilitation of people convicted for the crimes committed. The researchers developed suggestions on the rehabilitation of the former convicted on the basis of creating landscape remedial gardens and psychophysical discharge
areas in the buildings. The project development was organized with the account of hybridization of the spaces designed.

To reach the purpose set, the authors stated the following research objectives:

1. Study the national and foreign experience of the existing projects for the rehabilitation of the people discharged from prison in the Russian Federation and abroad;
2. Identify positive and negative aspects of the existing projects for the Centres of social adaptation for the people released from prison.
3. Suggest solutions on the building the comfortable environment in the social adaptation centres for people discharged from prison with the account of the research conducted.

To conduct the research, the authors applied a system approach to the study, collected and analyzed the data of existing research, facilities and design solutions. In addition,

The scientific novelty of the research consists in:

1. Analysis and systematization of the architecture and layout solutions of the existing rehabilitation centres
2. Extending scientific concepts on the use of the hybridization principles to design the spaces for the former imprisoned. Providing a rationale for the need to design a uniform complex Center.

The research practical significance consists in the revelation of the universal principles of architecture and layout solutions of the social rehabilitation centres the use of which can help the design of such centres in any city of Russia.

4. Problem significance with a brief overview

The first global overview of the jail architecture impact was conducted by the research group Matter where the influence of eco-psychology on the environment improvement was defined. In total, 305 imprisoned of the new British prison HMP Berwyn took part in the surveys. [7] The highest result in terms of important living criteria and priorities was registered for the readiness to develop, safety and motivation for life changing. Other important things included the indicators “ability to choose”, “right to spend money”, “be physically active”, “getting along with other people”. These particular indicators should be taken into account during the rehabilitation of the convicted. The space around the building, the court yard do not give a sufficient perception of safety, happiness and communication opportunities. The surveyed point to a high noise level and a large number of obstacles for free moving, the desire to isolate in a small space for comfortable stay in the environment.

The efforts to change the organization of the social rehabilitation centre and resolve the problem of socialization and rehabilitation by architectural means were suggested in the project Healing Matrix2 by Jie Liu, Wen Sun, Hewen Suo (Canada). [8] They set an objective to use various rehabilitation methods, and for this purpose six interconnected spaces were designed, each having its own function (for prayers, for meditations, for social interactions, for healing from rage or depression, for recreation, for learning). Malaysia suggested the concept of creating a vertical prison where the convicted live and work in the communities on agricultural fields and plants to process secondary raw materials. [8] E.P. Glinka Social Adaptation Centre in Moscow has adopted and implements the program intended for the restoration of family ties “Understand. Accept. Forgive”; it helps to find relatives and start communication again. The institution welcomes people that need social support and provides an opportunity to get decontaminated against pediculosis, disinfect clothes and stay overnight. The institutions under study provided various types of social services but the former convicted have a lot of problems that should be resolved in a comprehensive way and, clearly, various services must be concentrated in a uniform centre. The types of services provided in the Centre today: medical, legal, psychological, domestic, pedagogic, employment ones. However, all the services provided in the rehabilitation centres now have a primary nature only - provision of the first aid measures, forwarding to medical institutions, assistance in buying the tickets to the former place of residence, employment help, etc. It is suggested to make a social rehabilitation space with various functions – living, work, recreation, medical services, education. To make such a centre, the authors suggest hybridization as a method for the interaction of various forms filled with new senses and
content. However, these are not well-known multifunctional facilities but those that now are labeled by a collocation “mixed use”. The key idea of a building or a mixed use centre is to unite various functions and thus reduce the risks in complex economic conditions of our time. [9] It is also desirable to stipulate for the room where, in addition to work, the centre residents may have creative leisure. The impact of visual art on social processes and personality formation, education by means of art cannot be argued. [10]

External environment factors which should be accounted for at the development of a space and layout design for the social rehabilitation of the people convicted: temperature and humidity, wind impact on the building, orientation of premises by cardinal points, fencing the premises from external noise, remoteness of the building from railroads, highroads and industrial areas. [11] One should also take into account the significance of colors, influencing the comfort of people, when designing the interior of the medical and rehabilitation centre and the navigation system of medical and rehabilitation centres. [12]

Rehabilitation centre design should include not only the development of premises for psychological discharge but also the development of therapeutic landscape on the centre territory including a remedial effect, psychological diseases prevention. It is desirable to organize a garden with various functional zones around the social adaptation building. First and foremost, the garden should have a remedial effect. Remedial garden is an open space serving for the satisfaction of physical, psychological, social and mental human needs. Analyze two different remedial gardens by the example of the therapeutic garden of the hospital Kansai Rosai in Osaka, Japan, and the Grenville Ward Garden in Truro, GB. The hospital garden near Amagasaki, Hyogo, Japan was designed and built by Yoshisuke Miyake in 2004. At the garden design the needs of hospital patients were taken into account alongside with the needs of their families and medical staff; however, it is open for all city residents. Natural materials and path and space coverings were used to build the garden. It have separate areas for secluded rest in the “Garden of whispering sounds”, active recreation zones on the “Sunshine square”, the section for health-improving walks “The Sunken Flowers”. It also provides the sites where wheel-chaired people can enjoy the time in the garden. The raised beds are designed on three various levels to touch and smell the flowers both staying and sitting. [13].

Grenville Ward Garden in Truro, GB. The main garden purpose is to conduct rehabilitation in a post-operation period for senior citizens and staff recreation. The garden is divided into “pieces” with various functions and sensor characteristics for patient communication, rehabilitation and recreation. These “pieces” take into account the needs of senior people. Also, a recreation area was organized for medical staff; it is separated by flower beds and a waterfall. An important part in rehabilitation is taken by the opportunity to care of the plants.

Analyzing various examples of remedial gardens, one could point to the main principles of remedial garden design, and these are: visitor-friendly navigation, use of natural materials for the design components, using sections with sensor stimulation, division into quiet and active recreation sections where one can hold remedial exercises outdoors and spend time both alone or together with somebody else.

The authors defined the principles of rehabilitation spaces design:
- organization of spaces of outdoor activities
- provision of several scenarios for activities
- possibility to watch the plants and take care of them
- creation of conditions for social interaction

5. Theory
The objective of creating favorable psycho-emotional, hygienic and microclimatic environment is resolved with the help of preserving a natural landscape around the rehabilitation centre, providing condition for medical and health improving procedures, physical activities of various complexity, creation of friendly environment for the interaction of people having rehabilitation with medical staff, kith and kin. Remedial gardens provide the opportunities of flower and aroma therapy. Flower therapy
is successfully used for the treatment of stresses and rehabilitation of people with psychological problems. Flower, plant and tree aromas positively influence the nervous, respiratory and digestive systems awakening the desire to live. Remedial essential oils are emitted by almost 3,000 plants. Natural essential oils have a biological activity and cannot be reproduced chemically.

Apart from the color plants influence the human state by its aromas, phytoncids also impact arterial pressure. The plant form and state also impact the human perception: thorny, pungent and aggressive or soft and delicate flower contour induce various emotions in a person. It is necessary to take into account the quantitative relation between accent and background design components, they create environment dynamics facilitating the viewer strain or relaxation.

The special significance is attributed to the garden space and layout design. It should stipulate for the opportunities for various types of recreation, both isolate and quiet and active leisure as well when several people get together. Alongside with this the person walking in the garden should feel safe which is also important for patients suffering from dementia. For visually impaired people one should envisage kinesthetic navigation components and the sources of audio, aroma, kinesthetic impressions and information. There are a great variety of needs and limitations in a remedial garden [14]. The territory is divided into the areas of entrance group, quiet recreation, active leisure, recreation area, domestic area.

The principles of creating rehabilitation spaces: simple and clear navigation in the garden allows comfortable amusement and eliminates the risk of taking a wrong path. The orientation problem is one of the key problems of correct space perception. The peculiarity of the remedial garden is a long stay of a person in this environment. That is why one should pay attention to the artistic decoration, the level of public services and amenities and functional zoning. As a rule quiet zones take the largest part of the park space and characterized by a paysage landscape with natural relief forms. 90 % of the quiet recreation areas are occupied by plants and water[15]. Active sections must be divided into several specialized sectors - for remedial exercise of men, women, sports zones. [16]. The best solution in terms of the materials used for park components will be natural materials such as wood, stone, small rock, sand, clay, etc. The combination of natural materials and elements facilitates the sensor stimulation, and this is the next principle in the design of the therapeutical garden.

Sensor stimulation is a great way of getting closer to nature. The researchers defined suitable plats to make people with neurotic and psychosomatic disorders relax. Sensor plants for hearing are bamboo, sweet corn, dithering grass. Sensor plants for sight create visual effects for garden patients - sunflowers, love-in-a-mist, marigold. Sensor plant for touching were selected due to their longevity and texture variety - salvia, silver sage, lamb’s ear, moss. The taste receptors can be influenced by eatable fruit, berries, vegetables, herbs and spices - garlic, rosemary, strawberry. Sensor plants are of a particular importance for people with poor sight and other population groups - sweet pea, mint, melissa, basil. In addition, the sensor garden can be filed with sand, pebble stones, dried bark, cones, moss. Therefore, the sensor environment consists of multiple various stimulators acting on various organs of sigh, hearing, scent, tactile sense and vestibular sensors immersing the visitor in the state of calmness and peace. [17].

Joint work in the garden facilitates the faster socialization of the former imprisoned. Garden therapy stipulates for using plants and natural materials for human rehabilitation. It has been proved that working with the plants positively influences the psychological and physical state of the human. At the work with plants in the garden or farm the influence is exerted on the fine motor skills, movement coordination, attention concentration and memory. One way or another this encourages self-belief, self-love, improves the capacity to fight with aggression and stresses occurring in the world [18]. This therapy effect can be considered in various spheres: intellectual, social, emotional and physical.

The intellectual sphere can include the improvement of communication skills, memory development, attention raise and improvements, enhancement of the ability to plan and take decisions, obtaining new professional skills. Growing flowers, vegetables or fruit in the garden boosts the motivation of the drug addicted people to start working. Further, they are able to adapt faster in the
society [19]. Summarizing the aforementioned, remedial garden is a space for the joint activity and communication with other convicted people, medical staff, human services workers, and, naturally, the family and friends.

6. Practical part
To implement the concept of rehabilitation events for the former convicted, the authors selected the E.P. Glinka Social Adaptation Center where help is rendered for the people discharged from the penitentiary system institutions. The centre is located at the south-east of Moscow, Pechatniki, 2 Ilovaikaya Str. [20] The centre territory has a sufficient area to organize a garden (approx. 1 ha). In our case the main garden function is remedial and rehabilitation.

Modern design of social objects focuses a lot on the environment quality as it directly influences the positive treatment outcome and patient psychological state. When making an additional building for the existing one, it is possible to organize a space for social rehabilitation with various functions - living, work, recreation, medical service, education. The people staying in the centre can acquire demanded professions, practice arts, get medical services. The building premises are designed with the account of temperature and humidity climate characteristics, wind impact on the building, premises orientation by cardinal points, protection against the external noise.

A special emphasis is place on the landscape territory organization. The building is surrounded by the garden that uses plants growing in the central part of Russia. At the garden creation the authors took into account the needs of former convicted people, revealed earlier, as well as the experience of remedial gardens intended for the rehabilitation of patients of various groups. In connection to the research conducted the garden should meet the following requirements:
- opportunity for the visitors to choose the recreation, work, people to communicate with, etc.
- free and unrestricted walking in the territory
- strengthening patient social interaction
- facilitating patient recovery with the help of work in natural conditions

The garden has been designed with the account of the developed principles of remedial gardens:
1. Simple navigation. Large stand with the garden layout and key attraction points is located at the entrance to the centre territory. Additionally, the guides to the functional sections are placed over the hole garden territory. The guides have not bright visual accents but are also equipped with a duplicating text in Braille script and sound tracks for comfortable use by low mobility population.
2. Changing of active and quiet areas sections. Over the garden territory, regardless of the intended functional area, there are places to take rest, They may have a form of benches for more isolated time spending as well as the garden houses for a comfortable recreation of a large group of people. The active recreation stipulates for the stage to hold mass remedial events for patient rehabilitation.
3. Natural materials. Benches, litter bins, beds, pavements and other design element are made of natural materials to add architectural emphasis as well as to give the sense of unity with nature by means of kinesthetic and visual interaction with the materials.
4. Sensor stimulation. In general, the remedial garden influences all senses: smell, tactual sense, sight, hearing and even taste regardless of the functional area.
5. Socialization. To boost a faster socialization, the authors selected garden therapy. Working in a garden/farm is a collective activity with constant contact and interaction with other patients and medical staff allowing the former convicted to get back to a normal life faster.

To reach all the objectives and meeting all the principles, the authors envisaged remedial garden areas with certain intended use for the former convicted rehabilitation: sensor garden, garden therapy, active therapy, aroma garden, and quiet recreation.

7. Conclusions
Social adaptation centres provide temporary accommodation to the homeless and help them to restore documents, give them legal assistance. They perform a function of document restoration, employment assistance but don’t resolve the task in a comprehensive way. The centres do not have an opportunity
to provide medical services, education and psycho-physical rehabilitation. One of the means of rendering help to people convicted for crime commitment is the creation of psycho-emotional discharge areas in the buildings and landscape therapy. The social adaptation centres should adopt humanitarian programs on rehabilitation to treat the human psycho-emotional state and reduce the repetition of crimes.

Basing upon the analysis of the experimental project the authors suggested the fundamental principles for the arrangement of the areas of psychophysical discharge and efficient rehabilitation at the Social adaptation centres intended for the people convicted and released from the places of detention. The authors defined the use of special plants to make the microclimate healthier and create the favorable video environment - using harmonious non-aggressive forms of green planting to reduce stress.

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