people solve specific problems and create new design solutions. How good can artificial intelligence be for this? In our case, AI did very well'. [2]

'We tried to make artificial intelligence create projects the way humans do, understanding this process: how people approach design, how they plan a sequence of actions, and then, step by step, create a new design', said Ayush Raina, co-author of the study. [2]

Examples of software using AI in architecture:

- Autodesk Dynamo;
- Spacemaker AI;
- Archistar;
- Cityzenith.

Having analyzed this information, it is possible to understand that in a few years AI will not just be an assistant, but also a full-fledged part of the architecture, because human imagination, sense of style and aesthetic perception are combined with the analytical skills of artificial intelligence, creating a symbiosis that promotes to innovative design, providing new opportunities, process optimization and innovative design approaches.

REFERENCES

1. URL: https://commercialproperty.ua/analitics/shtuchnointelektualne-seredovishche/

2.URL:https://ecotech.news/architecture/604-shtuchnij-intelekt-navchivsya-stvoryuvati-arkhitekturni-proekti-bez-uchasti-lyudini.html

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FOREIGN EXPERIENCE IN DESIGNING REHABILITATION CENTRES FOR CHILDREN

The relevance of the chosen topic is due to the urgent need to improve the architectural and planning solutions of rehabilitation centres in Ukraine. Most rehabilitation centres in our country were built in Soviet times and are now morally and physically outdated. These buildings do not meet the modern medical needs of children. Given the psychological trauma and the need for medical rehabilitation due to the military conflict, it is important to study and use international experience.

The goal is to analyse foreign experience in designing rehabilitation centres for children.

Statement of basic material In the modern world, the issue of rehabilitation of children with various physical and mental disabilities is becoming increasingly important. Increased attention to this area is not only a matter of humanitarian aid, but also a strategically important component of society's development. In this context, foreign experience in the design of rehabilitation centres for children becomes particularly interesting and important to study and implement. The design of rehabilitation centres in other countries includes analysing the needs of the target audience, developing individual programmes and using advanced techniques and technologies. Particular attention is focused on creating a comfortable environment that promotes not only physical but also emotional and social development of each child [1].

In this study, we will look at key aspects of the design of rehabilitation centres for children abroad, in particular in Europe, Asia, North America and Africa, to highlight the prospects and opportunities for improving current practice in Ukraine (Fig. 1).

Figure 1. Graphic presentation of rehabilitation centre projects for children

In the practice of foreign rehabilitation centres, a technique is being introduced to associate the centre building with a home. For example, in Budapest, Hungary, in 2015, a rehabilitation centre was built with the aim of creating a simple, safe and comfortable five-storey building connected to the existing rehabilitation centre building by a passage. The first two floors house common areas and a dining room, while the top three floors are used for living quarters. The main goal was to create a simple, safe and user-friendly environment. It has a simple shape with a pitched roof, which is reminiscent of a home. Most corridors have natural light for better orientation of blind residents, and perforated metal panels reduce excessive light. The perforations form braille inscriptions with the words ‘trust’, ‘home’, ‘shelter’ and ‘love’[2].

Another building with such a reception is a hospice for children in Osaka, Japan, built in 2015. The complex is located in a memorial park and is partially open to the public as a public playground. It consists of six residential ‘houses’ connected by ‘streets’ and courtyards of various shapes and sizes. The use of wood, tiles, metal and soft materials creates a cosy, homely atmosphere. Deep canopies protect from the sun, and the design provides natural ventilation. The ‘streets’ lead to a public area with play hills where the children patients can play with local children. The facades have simple proportions and details

typical of traditional houses. Overall, the 'TSURUMI' hospice is an innovative project that seeks to integrate the facility into the urban environment and spread the idea of community support for terminally ill children [4].

This technique was used in the design of a children's hospital in Zurich, Switzerland, but it went beyond the interior. The layout resembles an urban structure with streets, intersections and courtyards that let in natural light. The ground floor is the most public area with the reception area and operating theatres. The second floor is dedicated to the clinic and office space. The top floor is the most private area with four wards for inpatients. The hospital's façade is a combination of concrete frame, wooden, glass and plant inserts, symbolising the diversity of internal functions. The patient rooms have individual roofs, large windows, wooden ceilings and floors, and folding beds for parents, creating a homely atmosphere. In general, the project demonstrates an innovative approach to hospital architecture, focused on the needs of children patients and medical staff [7].

The same effect was achieved at the Welfare Centre in Paris, France, back in 2013. 'Welfare Centre for children and teenagers in Paris'- is an emergency accommodation centre that provides shelter for minors under state care. The main purpose of the centre is to provide practical, educational and psychological support to these children and teenagers. The architects designed the building in the shape of the letter 'L' with terraces for recreational activities on each floor to optimise access to daylight. To emphasise the unified character of the building, the facades are made of white concrete, golden louvres and black metal. The interior space is organised in separate sections for different age groups. Particular attention was paid to creating a cosy, homely atmosphere with designer furniture and poetic navigation symbols. The main staircase serves as the focal point of the interior, as in old residences [5].

Another example is the Children's Rehabilitation Centre in North Bay, Canada. Its main goal is to create a favourable and stimulating environment for the treatment of children with a variety of needs, including physical, speech and communication. The centre is designed as a single-storey building around a courtyard that provides natural light, visual connection to the outdoors and a safe space for therapy and recreation. The architects used natural materials, such as limestone, brick, and wood, which are in harmony with the northern context. One of the most prominent features is a six-metre-high living wall that acts as a biofilter to improve air quality. The interior is enlivened by colourful stained glass windows, local artwork and decorative elements, creating an attractive and stimulating atmosphere for children. Overall, the centre demonstrates a respectful attitude to the environment and a concern for the well-being of young patients [3].

Let's also consider the principle of creating a rehabilitation centre for children in an area that needs it but does not have an appropriate urban planning framework. The 'JIGIYA SO' psychomotor rehabilitation centre in the Republic of Mali is part of a programme to build community infrastructure in West Africa. It is designed to promote integration and raise awareness of disability issues, which in this region are still associated with certain beliefs and traditions. The centre is located in the city of Katia, near the capital Bamako, and is designed for children aged 3 to 15 with disabilities. It provides spaces for individual and group rehabilitation, as well as areas for social integration and support for patients' families. The architectural solution is integrated into the local context and uses locally available materials such as cement blocks, metal profiles and traditional construction techniques. The compact layout with courtyards, shady galleries and landscaping ensures a comfortable microclimate on a limited budget. Energy is supplied by solar panels [6].

Conclusion. The analysis of foreign experience in designing rehabilitation centres for children demonstrates a number of important approaches and innovative solutions that should be taken into account to improve Ukrainian practice.

Firstly, there is a tendency to create a cosy, homely environment that is as close to natural conditions as possible. This is achieved through the use of natural materials, large windows, patios, and landscaping. The layout resembles the structure of a small town with "streets", courtyards, and play areas. Secondly, an environment is created that is focused on the diverse needs of children - physical, psychological, and educational. For this purpose, separate zones or pavilions are provided for different age groups, types of therapy, and education. Thirdly, architectural solutions maximise the use of natural

light and fresh air and create a comfortable microclimate. Sun protection systems, natural ventilation, and green courtyards are used. Fourthly, projects are integrated into the urban environment and open to the local community. Buildings become public spaces for meetings, communication, and games.

All of these approaches can serve as useful examples for the design of modern rehabilitation centres in Ukraine, creating a comfortable, safe and stimulating environment for children's recovery.

REFERENCES

1. I. Kravchenko. Basic differences in organisation of rehabilitation environment for disabled adults and children: analysis of functional structures. Scientific enquiry in the contemporary world: theoretical basics and innovative approach. Vol. 4, USA, L&L Publishing. 2013. - Pages 121-124.

2. Batthyány László Institute for the Blind. A4 Studio URL: https://www.archdaily.com/771020/batthyany-laszlo-institute-for-blinds-a4-studio

3. One Kids Place. Mitchell Architects. URL: https://www.archdaily.com/82958/one-kids-place-mitchell-architects.

4. Tsurumi Children's Hospice. Taisei design Planners Architects & Engineers. URL: https://www.archdaily.com/972238/tsurumi-childrens-hospice-taisei-design-planners-architects-and-engineers?ad_medium=gallery.

5. Welfare Centre for children and teenagers in Paris. Marjan Hessamfar & Joe Vérons architectes associés. URL: https://www.archdaily.com/512588/welfare-centre-for-children-and-teenagers-in-paris-marjan-hessamfar-and-joe-verons-architectes-associes?ad_medium=gallery.

6. Jigiya SO psychomotor rehabilitation centre. URL: https://www.archilovers.com/projects/215625/jigiya-so-psychomotor-rehabilitation-center.html#info.

7. Herzog and de Meuron. Kinderspital, Zurich, Switzerland URL: https://www.herzogdemeuron.com/projects/377-kinderspital-zurich/

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GREEN ROOFS AND WALLS IN BUILDING DESIGN

Relevance. Significant changes in population density and urban environments are contributing to the unprecedented climate change currently occurring in the world. Denser cities result in greater built form, with more hard surfaces and less green space, landscapes areas and permeable surfaces. One way to create a more natural environment in cities and contribute to climate change mitigation and adaptation. Another competing pressure on space is the use of roofs and vertical surfaces of buildings. [3]

Objectives. to investigate the advantages and disadvantages of green roofs and walls in South Korea.

A green roof or living roof is a roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. It may also include additional layers such as a root barrier and drainage and irrigation systems. [2]

Green walls are created by attaching a frame system from gutters, pockets or mats attached to internal or external walls or fences, in which many small plants are planted. These plants support livelihoods through an irrigation system. «Living» walls can also consist of a mesh of steel ropes, which allows climbing plants rooted in the soil on the ground to slowly cover the wall. [1]