HEALTH BENEFITS OF HOSPITALS LANDSCAPE DESIGN

BENEFICII ADUSE SĂNĂTĂȚII PRIN AMENAJAREA SPAȚIILOR VERZI AFERENTE SPITALELOR

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Abstract. *Proper use of landscaping related medical institutions may lead to reduced costs for treatment patients, while improving workplace in which medical staff operate. While the green spaces of hospitals in the world are designed and implemented as vibrant landscapes, representing the "life", most Romanian hospitals are facing a decline in the landscape, with a negative effect on quality of life of people (patients, visitors and medical staff). This paper presents a concept of designing a green space for a medical institution taking as a case study Institute of Oncology "Prof. Dr. I. Chiricuta "Cluj-Napoca.*
Key words: landscape, hospitals, health, solutions, concept

Rezumat. *Valorificarea corespunzătoare a spațiilor verzi aferente instituțiilor medicale pot duce la o reducere a costurilor pentru tratamentele bolnavilor, îmbunătățind în acelaşi timp locul de muncă în care personalul medical îşi desfăşoară activitatea. În timp ce spațiile verzi ale unor spitale din lume sunt proiectate şi amenajate ca peisaje vibrante, reprezentând „viață", majoritatea spitalelor româneşti se confruntă cu un declin al peisajelor, cu efect negativ asupra calității vieții oamenilor (pacienți, vizitatori, personal medical). Lucrarea de față prezintă un concept de proiectare al unui spațiu verde aferent unei instituții medicale, luând ca studiu de caz Institutul Oncologic „Prof. dr. I. Chiricuță" din Cluj-Napoca.*
Cuvinte cheie: peisaj, spitale, sănătate, soluții, concept

INTRODUCTION

In recent years, the medical worlds there is concerned for the creation of functional areas, with beneficial effects on reducing patient stress and improve their health, leading to give greater attention and importance of green spaces planning in medical centers.

For a patient, visitor or employee time spent in hospital can be a stressful experience.

Opportunity to spend part of their time in middle of a landscape or a garden, can improve people's ability to cope with stress and at the same time, improve the physical health.

Based on existing research and results in foreign literature (Ulrich, RS and R. Parsons, 1992) regarding the influence of vegetation and environment on health, this paper presents a concept for designing a green space for a medical institution.

MATERIAL AND METHOD

Development of this project started by analyzing the effects of green space on health, taking as a case study Oncology Institute „Prof. dr. Ion Chiricuță" Cluj-Napoca. The design of such green space aims to positively influence quality of life for patients, medical staff and others whose work is related to that institution.

For a large number of patients treated ambulatory, only temporary waiting spaces are lounges, offices, hospital lobbies. Therefore becomes imperative solving these spaces landscape through designing projects that meet patients' needs.

The approach of this project is based on documentary analysis and several observations made in the hospital. Green space of the medical institution is sufficient, but is designed so that people which have to come into this place to feel excluded, to feel that the only space that is allowed to use it inside the hospital.

In dealing with landscaping of the proposed project, in accordance with objective, to achieve an effective proposals were studied following: analyzing Oncology Institute neighbourhoods, the existing accesses, analyzing the relationship between built area and area of green space, spaces between buildings located, existing vegetation, topography, analysis of pedestrian walkways, parking, decorative accessories, fences, utility system, lighting system, roofs of buildings (fig. 1A, fig.1B and fig.2).

Fig. 1A. Existing situation

Fig. 1B. Surface analysis (a. buildings; b. paving, c. Green spaces)

For a better approach and treatment of concept was studied shading, and for proper integration into the urban landscape were studied climate, noise and exhaust pollution.

Analysis and design was done using 2D and 3D Architecture and Landscape Software (Archicad, Realtime Landscaping Architect, SketchUp, CorelDraw, Google Earth) by photo simulation, either by the total reconstruction of studied areas (fig. 2, fig.3).

For understanding and playing more special details or some proposed arrangement was made a 1:20 scale model (ex. thematic garden for children) (fig. 4).

Fig. 2. Shading study

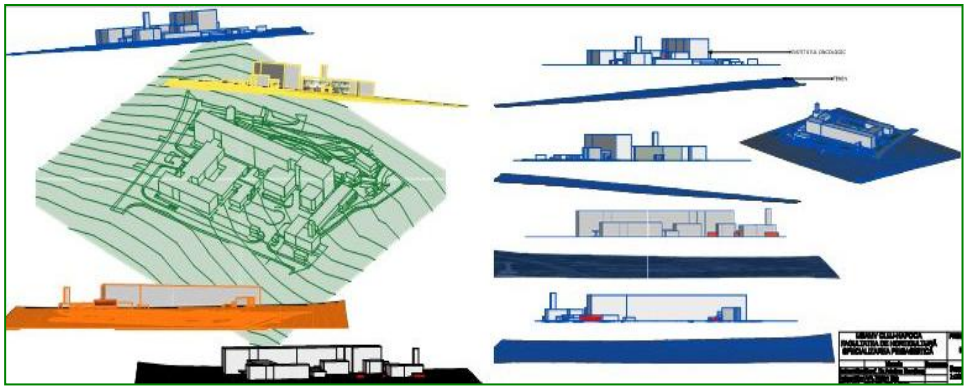

Fig. 3. Land survey

Fig. 4 - Model, thematic garden
Scale 1:20

RESULTS AND DISCUSSIONS

Hospitals related green spaces should be designed to give the landscape the following attributes: reducing stress and balancing the body, creating a natural environment for practicing physical therapy and horticultural therapy, providing an optimal environment for relaxation (Cooper-Marcus, C. and M. Barnes, 1995). In addition to these medical attributes, the proposed project aims at a better exploitation of existing green space and landscape aesthetic effect of urban area to which it belongs (fig. 5).

Fig. 5. Proposal

After analyzing the situation, taking into account the different location of green areas inside the hospital, was proposed a subdivision of these areas, allowing a clearer approach and understanding of the proposed concept.

Thus, were designed and developed the following areas: waiting areas, relaxation areas, decorative water areas, spaces between buildings, themed gardens for children (landscape architecture witch style an idea or theme - in this case a scene from a fairy tale).

To increase and diversify the areas of green spaces were designed roof gardens (on terraces and roofs of buildings) and vertical gardens (by coating the walls with vegetation).

Rest and relaxation areas: arrangement of these spaces is proposed to in the main courtyard of the hospital. By creating uneven ground these areas will become real "vegetable compartments" which will have the following roles: to provide protection against environmental conditions in this strong anthropic environment, to reduce noise (these areas being located near thoroughfares or are surrounded by parking) (fig. 6). Added interest will be made by designing decorative water - ornamental ponds (fig. 7).

Design the main entrance: to highlight the main entrance of the institute has developed a stylized model of medical symbol, who will be done by associating species of shrubs, with decorative foliage, that are suitable for trimming (*Buxus sempervirens* and *Berberis thunbergii*) perennial flower species and ornamental grasses.

Fig. 6 - Field gradient around the areas of relaxation

Fig. 7. Ornamental pool water

Area of buildings: is proposed location of a garden theme (garden style an idea, in this case a characteristic element of fairy tale), (fig.8).

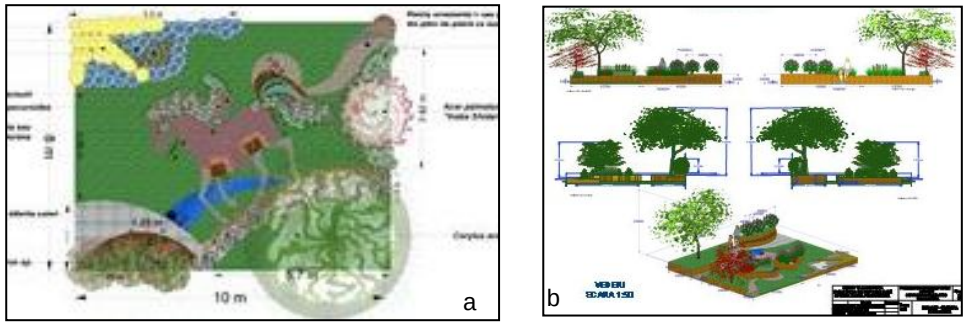

Fig. 8. Theme garden: (a) detail, (b) views

Gardens on roofs and vertical gardens: is proposed coating part of the the walls of vegetation using systems for vertical gardens and roofs of buildings will be designed using two types of system - intensive and extensive (fig.9).

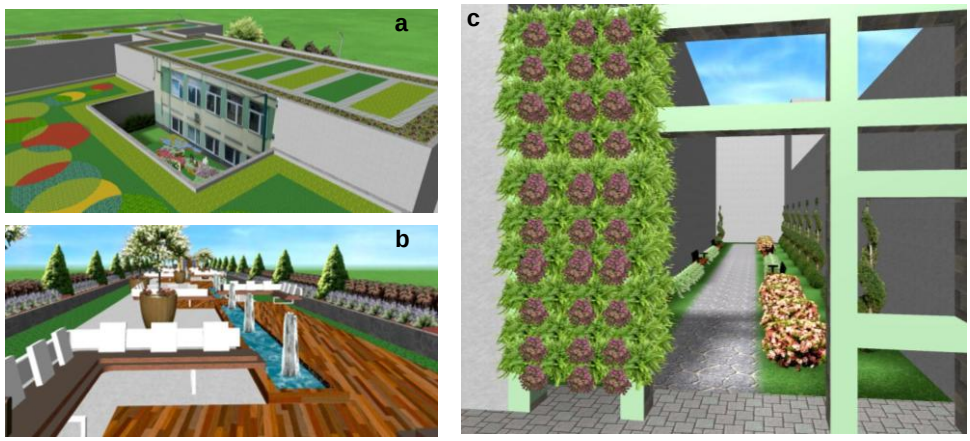

Fig. 9. (a) extensive green roof; (b) intensive green roof;
(c) Vertical garden

Increased green spaces surface area *with 32,87%* (currently the total area corresponding Cancer Institute totals 20332.797 m^2, with 6684.51 m^2 occupied by buildings, 5317.219 m^2 are occupied by pavement and 8331.068 m^2 is the area occupied by vegetation). 32,87% increase of surface area is accomplished by arranging green roof and vertical gardens (Singureanu V. et al., 2008).

Vegetation is the main constituent of the proposed development, being represented both ornamental woody species, species flower and grass surfaces (Dumitras Adelina et al., 2008).

CONCLUSIONS

Considering the psychological links between green spaces of cities and people, proposal defines an atmosphere atmosphere that a user can feel natural and clear.

Proposal application will remove the anonymity of areas located between buildings, in particular, which are now in a state more or less damaged, roofs extending over a considerable area and green spaces that were designed only to be seen and not used. Redevelopment area for the Oncology Institute will bring improvements in terms of aesthetic, social, environmental quality, education.

Benefits of applying and implementing the concept detailed in this paper are: *under medical issue*: significant effects on health, improve attention, facilitate recovery, and improve state of mind and general welfare; *ecologically viewpoint:* reduce pollution by promoting and applying the principles of sustainable development.

The project attempt to establish one of the possible answers the question: "What are the qualities which must meet a mental health and physical rehabilitation landscape?" proposing new approaches and aesthetic values of the Institute of Oncology green space and not least for the urban landscape of Cluj-Napoca.

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