

## Researches concerning landscape development project of a roof garden in Timisoara municipality

Berar C.<sup>1\*</sup>, Băla Maria<sup>1</sup>, Fora C.G.<sup>1</sup>, Toța Cristina<sup>1</sup>

Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara, Faculty of Horticulture and Forestry

\*Corresponding author. Email: cristianberar@yahoo.com

**Abstract** In terms of the microclimate, the city is a desert of stone and masonry, being much hotter in the summer than the neighboring regions. Although few are the natural features of the city, trees, interesting formations of land, the area that requires arranging has very rich vegetation that helps regulate the microclimate. Therefore, for the accomplishment of the project, the valuable specimens of a special expression were kept, to which new species were added in perfect harmony with the existing ones, but that gave a special touch of freshness.

The composition has three main interest points, one in the public area, and the other two in the private area.

Due to the placement on one of the most circulated roads of the city and in an area of particular spirituality, through the presence of these three buildings of cult of the Orthodox, Baptist and Nazarene Churches, the area was created as an open space, where the passer-by, who has to travel this road daily, or the pilgrim on his way to church, can rest for a few moments, on a bench in the shade, next to the inhabitants of the block of flats for which the development was proposed. Therefore, communication of the inhabitants of the block of flats with the passers-by is encouraged, the need of socialization of the contemporary man being fulfilled.

For a more successful design, visits on site will be performed, so that every aspect of the scenery can be noted, every tree, shrub or artificial element introduced by man being carefully observed, as well as every different sector of the scenery. Only through a visual observation of the land can one capture the „sense" of the land, perceive the relationships that it has with the neighboring areas and become fully aware of its placement. Only then, being on the land can one sense the dynamic lines, the roads that border it, the prominent routes of pedestrian access, the position of the sun, the dominant breeze, the beautiful views, the ugly views, the usable surfaces, the features that must be maintained and features that must be eliminated. Whatever we may observe along the access lines towards the site concerned are its extensions. Whatever we may see from inside the site, is part of it. Whatever we may hear, smell or feel on this land is part of it.

### Material and Method

The negative features of the area represented by the noisy bustle of the road passing nearby, the peculiar angles of the buildings, the narrow lanes that separate two blocks or the strange clutter of plots between the chains of garages, the dull part in the vicinity of the concrete fence of 2 meters high or the lack of humidity

### Key words

green roof, insulation, extensive system, intensive system

in the soil resulted in the approaching of a solution for the reduction of these effects and even their transformation into positive elements where possible.

All this was performed to encourage communication of the inhabitants of the block of flats with the passers-by, the need of socialization of the contemporary man being fulfilled.

The good features, a proud group of willows, the presence of some specimens of *Pinus silvestris* with gnarled trunks and dark green foliage on the background of a grey façade of the block, the presence of a wall of *Thuja occidentalis* make an efficient veil that hides everything. A sidewalk that crosses the trees planted on 2 rows of contrasting heights and colors. *Acer palmatum* and *Tilia tomentosa* on the superior step, competing with *Prunus cerasifera* on the inferior step create a long axial perspective, giving the present illusion of large distance and vast freedom within the modest space of the property.

The view from the west becomes particularly enjoyable in the evening, after the sun goes down and the sunset sky is invaded by intense or mellow colors, pastel colors of twilight, view that can be best valued when admired from the superior floors of the block oriented towards the west side.

The intoxicating fragrances that can be felt in the air together with the thawing of the snow when *Prunus*

*cerasifera* becomes a pink cloud, followed shortly by *Robinia pseudocacia* with its white flowers arranged in edible clusters and finally *Tilia tomentosa* showing off its flowery branches in clouds of honey, all this must remain untouched, shining in their own light.

With the establishing of the plantations that according to the project are about to be kept, general measures regarding the maintenance of these plantations are taken. These measures imply: removing the dry trees and shrubs, tree crowns grooming operations, works for maintaining the soil, its loosening and the introduction of necessary fertilizers.

During the development operations on the roof, the vegetation on the soil shall be protected against damage that might be produced by the trucks carrying the construction materials. Therefore the trucks shall have well established routes and the places of storage of the construction materials shall be chosen accordingly, so that the existing vegetation is not affected.

In this area one can observe best the vertical composition as most of the plant species have reached maturity. Therefore, grasses, perennial flowers, shrubs and trees have the gift of enchanting the eye from the level of the soil up to the height of the tree crowns.

The development style for this area is mixed, with a dominant landscape. On designing the green space, the presence of insects, small animals and birds was taken into consideration; therefore there are isolated areas with no alleys.

Then, the spacious roofs of the blocks, a little lower, another group of flat roofs, of the garages of various shapes promise an ideal space for the development of a roof on top of the block.

The development of the green roof is the area of the highest interest. The existence of this area is determined by the man's need to relax. Recreation is at present a vital necessity in modern society, one that captures the attention with a growing strength; therefore it is subject to a preoccupation both of a scientific nature and an administrative – organizational one.

Recreation is a biologic necessity of the man; it must be a natural extension of the usual lifestyle, a daily phenomenon. Intellectual activities that solicit the man, through their nature and, also through the high level of the demands that must be met require a nervous tension for precise adaptation. These are the activities that increasingly solicit our society in its full technical development. A functional system composed of such activities can not be maintained danger free for long. It must be followed by periods of relaxation, characterized either by a return to more automated activities, or by rest. All this represented a live interest in designing the green roof. Therefore recreation becomes a vital function of the development. Within the development of the green roof, three distinct areas can be distinguished, corresponding to the three major

functions of recreation: relaxation, entertainment and development.

Man is a „biological, affective, emotional, intellectual and social being". Starting from these spheres of existence, the green space was designed and developed to its most „functional" usage. For the affective states when man feels the need of relaxation, of freeing himself from the fatigue, isolation, when he withdraws in the depths of his own conscience, areas were designed where the space created induces the sensation of rest, quiet, intimacy, safety and peace. For this, various design tricks have been approached in order to create intimacy. In most of the cases, they were used where it was possible, retreats from the main alley and flower pots raised from the ground to the quota + 15, 60 ( quota + 15,00 is considered the level of stepping ), that surrounds the areas chosen on three parts, where there are planted either *Ligustrum* left to grow freely, or specimens of *Amaranthus* flowing over the edges of the ornamental flower pots, bringing a touch of romance, or the role of the veil being taken over by the hedge of *Ligustrum* or *Spiraea x vanhottei*. To the same end, throughout the surface of the park appear groups of benches with a high back or trellis where specimens of *Rosa wichuraiana* grow, adapted to the harsh conditions on the roof, or *Rosa moscata* very fragranced, that also creates diversity.

Entertainment, that frees man from boredom and lets the imagination loose, is fully satisfied through the concept of this project. During his walk, man passes through a series of spaces different in design and functionality.

The journey begins in the first wing of the building completely isolated from the other three. Here, green is the dominant color. The centre of the composition is represented by a flower bed of *Sedum surium* that catches the eye. On the right side a more „wild" area can be found, with hidden places through the species of *Ligustrum* left to grow freely and *Amaranthus*. In tune with the atmosphere created, the floor is formed out of a carpet of grasses over which stoned were scattered. On the opposite side, the carpet of *Cerasium tomentosum* out of which *Yucca filamentosa* rises, creates a balance. The predominant materials used are the simple grasses carpet and the one with scattered stones above it, and also the stone with the green joints. For the relaxation places, pergolas with benches where stalks of *Rosa wichuriana* grow, were used.

Access to the II area on the roof, across the block situated on 47 Carei Street, is made through a sea of flowers. Here, one can find hedges of *Ligustrum vulgare* and *Hibiscus syriacus*, decorative flower pots of *Yucca filamentosa* of an exquisite white, that bloom in the middle of the summer and are particularly resistant to drought conditions, climbing roses and species of *Amaranthus caudatus* „Crimson Tasse" hide behind them a row of lounge chairs that can barely be distinguished among the pergolas *Rosa wichuraiana* „Minnehaha". After the visitor comes out of this sub-

area, his eyes can rest for a few moments on the tiles with grass joints, on the grassy prisms that break the alley and on the flower pots planted with decorative grasses. I said that the eye can rest for just a few moments because the blend of colors from the next sub-area shall draw the passenger towards the bridge equipped with wooden tiles and a carpet of grasses.

The bridge can be found on the joint of the block no. 47 with block no. 48. Due to the shift of direction, a light breeze can be felt that makes the leaves of *Ligustrum* left to grow freely and of the *Ligustrum* driven in the form of a small tree make a pleasant rustling, bringing in a breeze. The effect is increased through the choosing of the accompanying plants with white petals. The growing closeness to the movement dedicated area is felt through the presence on the roof of the block no. 48 on Carei Street, of a ping pong table. The meeting point between block no. 48 on Carei Street and block no. 40 on Calea Aradului Street is marked through an ensemble of climbing racks arranged in the shape of a pavilion. Here the red colored roses *Rosa wichuraiana* „Minnehaha” and *Amaranthus caudatus* „Albifolius” are stars. From here, on the brick road, the jogging can begin!

The academician Pora performs an interesting analysis of the physiological aspect of recreation which is: the air we breathe during our recreational walks eliminates from the blood the excess of carbon dioxide, of toxins and leads to an increased quantity of oxygen, through which the lactic acid accumulated in the tissues oxidizes through a strong functioning. Fats are oxidized and the vessels are cholesterol free. The skin eliminates a lot of nitrogen products, facilitating the functioning of the kidney.

Non-compliance with the work-rest rhythm, if it persists for a long time, can cause deficiencies in the system of control of the biological functions of the body, can cause metabolism disorders, mental balance disorders, decreases the working capacity, can induce diseases, eventually. But man is a dynamic being; he feels the need to move, to play, and to have fun. Therefore, the need to move, to research, is satisfied with the help of the ping pong tables placed throughout the entire route that leads us to the sports dedicated area. But all at once these areas where the ping-pong tables are placed are easily lost between the clumps of perennials, flower pots and pergolas that send us to more intimate areas more private, away from the curious eye of the passer-by.

In the area dedicated for sports, another human need is met, the one to socialize. The park facilitates meetings and common actions, matter that is best observed in the sports area but also on the playground, where children of several ages interact and play together. The sports area is a combination of places for relaxation, where man can enjoy a glass of fresh water in the shade of the pergolas in the break between the series of sporting exercises; and pots with plants that enchant the eye, all arranged to surprise the eye and to lure the man to

move, for a daily urban recreation as part of the concept of the habitat of the future, as a dominant element of its structure. Therefore, after a day's work man is given an alternative to the sedentary life in front of the television, the daily exercise hour being brought to his home.

Man, an intellectual being feels the need to study, the need of lecture, diversity. For this particular reason, species that bloom in stages were proposed. Also, an important factor in encouraging the imagination is color, colors that influence the psychological state of the person admiring them. There are colors which we enjoy in the first hours of the morning or late at night, others that fascinate us in the afternoon. Green, the colors of leaves and lawn, the most relaxing of the colors, has the power to increase the capacity to work for an indefinite period of time and to favor the mental balance, which is why it is so prevalent in the green space.

The light colored bark of the species of *Betula pendula* introduces a note of joy. The yellow of the *Pentemon pinifolius* „Merea Yellow” is a warm color, full of light, a group of *Pentemon pinifolius* „Merea Yellow” has the property to freshen the landscape and to suggest happiness and optimism. The blue of the *Lavandula angustifolia* is the color of desire, loyalty, truth, and faith. It is the color of the sky, of water, of the night, has the dematerialization property, it manages to create the impression of length, space, boundlessness. This is the predominant color, next to the green in the third part of the project, in developing the roof of the groups of garages. To break the monotony and to give a playful note to the project, next to the lavender, decorative herbs of different shades were used in different shades of green and species of *Dianthus* brightly colored and drought resistant. But as it is a dynamic project, full of life, red can not be missing. *Rosa wichuraiana* „Minnehaha”, *Astilbe chinensis* „vision in Red” and *Pentemon barbatus* symbolize temper, passion and love for life, through the color of their flowers. Red has the most stimulating influence on the psyche, but used in excess it can become a tiring color and it reduces the capacity to work. These are the things that were taken into consideration during the project. So, red has the note of accent and green dominates the entire composition. Blue, yellow and white have the role of harmoniously completing the composition.

Nature, through its many shapes, through the variety of colors and sounds, acts through all the sense organs over the human mind. Because we are facing an element of great dynamism, vegetation, a landscape development project is in permanent shifting.

This avalanche of sensory impulses, that man is mostly not aware of, breaks even the most stubborn stereotype, the most unpleasant automatism of the behavior, removing from the brain the areas „trodden” due to some and the same operations.

The mixed style combines the features of the regular gardens and of the landscape ones, appearing as a result of the requirements of the era, without being assigned a particular creator. The mixed style is also known with the name of composite style and is characterized through the creation of some areas of the garden, geometrically and of others, naturally with harmonious crossings between them, forming a unitary ensemble. The mixed park can be more attractive through the variety of the scenery in which both aspects of the geometric aesthetic order and picturesque and romantic aspects can be combined. The mixed style allows a bigger freedom of the solutions and adapts better to the requirements of development of the multifunctional public parks, including many features and secondary systematization, especially in the case of large surfaces, with great capacity of receiving visitors. In general, the mixed style involves the treating of the parts next to the buildings in a geometrical style, because in the more remote and less accessible parts, closer to the natural frame to be treated in a landscape style.

In the parts arranged in a landscape style, such as the garden next to the block and the development of the roof on top of the garages, the classical methods of designing a garden shall be met. So the stretches of low plantations shall be fenced with irregularly spread massive trees, in accordance with well established principles. The main principle in this corner of the garden shall be the avoidance of symmetry. The main element of the composition shall be the vegetation.

Next to the buildings there are species of *Rosa glauca* that bloom rich and beautiful and the species of existing trees are the ones that adapted best to the climate of Timisoara Municipality, species such as *Acer palmatum*, *Tilia tomentosa*, *Juglas regia* or *Betula pendula*, the interior of the massive of trees is planted with species and varieties of obsolete and persistent leaves. In addition to the species enumerated above, one can find specimens of *Pinus silvestris*, *Picea excelsa* and *Thuja occidentalis*, and the ratio between the deciduous trees and the ones with persistent leaves will be of 2 to 1.

The marking of the roads will be subordinated to the other elements of the composition. Although the alleys are curved or sinuous, they delimit the plots that combine various plantations. The variation of the alleys shall be justified by changes in direction or by the appearance of some obstacles that must be avoided; also the alleys lead towards fixed objectives, following a rational path, continuous as movement. Where a central building is placed, the network of alleys is concentric and connects the building with the remote points.

The geometric landforms are leveled and sunk, and the ones adapted to the natural style were intended to be adapted as well as possible to the land.

The marking of the alleys within the mixed style involves a good combination of sinuous, free forms, with the regular geometrical ones; nevertheless an alley conceived in a geometrical style shall not be continued in a landscape style. The geometrical marking involves a greater widening of the alleys and their sealing at the ends with ornaments. This principle was taken into consideration when the drawing of the green roof was performed. The alleys marked in a natural style are narrower and side alleys emerge from them, reaching more hidden places.

When developing a green roof, plantations compartmentalize the space just like for the rooms of the apartments protected by this roof. The floral palette is rich and it contains specimens of hedge, trimmed or grown into the shape of a sphere.

The elements of design in a geometrical style are found in the composition of the development project. The buildings are places next to a much circulated main road. And the access road is provided with a street alignment both at the entrance of Calea Aradului Street and for the one of Carei Street. The great majority of alleys proposed for the green roof are straight, oriented towards interesting places and at the crossroads of the paths appear markets with a central decorative element. The shrubs are cut in geometrical shapes, the green fences of *Ligustrum* and *Hibiscus* are carefully trimmed, and next to them there are also some specimens that are left to grow freely, as a feature of the landscape style.

Access on the parcel is made both from Calea Aradului as well as from Carei Street. The alleys represent straight lanes to which the entrances to the blocks of flats attached to the parcel are connected. The connections of the alleys are performed according to their angle, so in the case of almost perpendicular alleys, there is a connection with springs corresponding to the angle of 90 degrees and curved paths with sharp and obtuse angles.

In the first area of interest, at ground level, the alleys divide the space in equal parts, having a well established order. For the arrangement of the roof gardens, they travel through different areas and divide the land in uneven surfaces. In some parts they take the form of bridges, that once they pass through a certain space and enter another, end up spreading in a vast space. On their way, they pass through multicolored flower beds, for then to be used as a runway for jogging. The alleys are bordered by benches, pergolas and trellises placed in such a manner to provide the best comfort for the passenger.

Materials used for the alleys are stone, brick and wood that receives an interesting patina with time, and also modern materials such as concrete, where the functionality of the space requires it. Also for promoting the idea of green space they have resorted to portions in which the tiles have large gaps where grasses were planted, and where it was possible, the alley was turned into a vast grassed area sprinkled with

stones, placed so close to one another that the crossing of the space is not disturbed, but in the same time to allow the growth of the species of grass. In order to enlarge the green space, in some portions over the paving of the alley, strips of grasses were placed 25 cm wide, 30 cm from one another, and in other areas these strips were turned into slabs of wood placed over the lawn layer.

Another function of the alleys is that of protecting the green areas and offering a layer of comfort in conditions of high humidity.

The organization of the garden was performed so that it can highlight the functional and visual relations between the different spaces and their components. Therefore we have:

- Pedestrian accesses, block entrances, alleys;
- Rest areas on the benches, lounge chairs;
- Access areas for vehicles, parking spaces, a lane for bicyclists;
- Areas of decorative interest.

For the green garden roof, extensive and intensive vegetation is used as well as trees greensward or plants that require regular care, suspended garden been the most proper ones. The accomplishment of the terrace roof with intensive vegetation is subject to prior calculation of the maximum admitted load on the structure which the garage or the chosen blocks of flat has. Besides the esthetic and environmental protection advantages, the vegetation roof helps to reduce the climatization costs, reduces the heat losses in the winter time, ensures phonic protection, reduces the greenhouse effect in large cities, protects the existent roof, it is estimated that the green roof shall last twice more than the conventional roof, which leads to reduction of the maintenance costs.

For choosing the plants for the roof garden, there were considered species very well adapted to the climate of the Timișoara Municipality and it was tried to make a connection between the vegetation existent in the garden in front of the blocks and that proposed for the garden roof.

Thus, species of *Yucca filamentosa* was chosen, a very decorating plant with white flowers as some bells, which enchants us since the beginning of the summer and which is at the same time very resistant to drought, it decorates both by the lanceolate leaves arranged in rosette and especially through the white inflorescences arranged on long rods. For the climbing supports and pergolas, *Rosa wichuraiana* was chosen, being a species used for rocking and stony slopes with a length of 3-5 m, with glassy and white flowered smelly semi-evergreen greenery, of 4-5 cm diameter, in pyramidal corymbs.

As the resistance structure of the roof does not allow a very large load with soil, it was opted for planting drought resistant rubber plants that are also present in the garden in front of the block of flat. Thus *Ligustrum* appears under three ways, the first time cut as hedge, then as a decorative little tree, and eventually some of

the specimens shall be left to grow freely making up real protection curtains. Together with *Ligustrum* we encounter *Hibiscus syriacus*, growing as a hedge and *Spiraea x vanhouttei* with white extremely beautiful flowers that blossoms at the beginning of the summer.

For the high window boxes, there were chosen combinations of *Amaranthus caudatus* „*Albifolius*” and *Amaranthus caudatus* „*Crimson Tassels*”. After its popular name of *Amaranthus* or the turkey crest, it is an impressive seedling plant that may be cultivated successfully in the window boxes from the block. The bush has reddish stems and the leaves receive brassy nuances after a while, and the summer and autumn time, on the plant appear the long tufts, that fall down extremely decorative. Another plant with a good resistance to drought is also *Astilbe Chinensis* "Vision in Red" cultivated in a nutritive layer of 30 cm and surrounded by a hedge of *Ligustrum vulgare* cut to soil. This variety of the species was used as it has a strong color that provides additional dynamism to the arrangement.

The window boxes with a length of up to 80 cm and depth of 40cm were seeded with *Penstemon barbatus* "Rondo" and *Pestemon pinifolius* "Marea Yellow". Being some plants very appreciated for their aspect, developing very well when they grow in the sun light, needing that the sunbeams fall directly on the flowers, so that they receive an interesting coloring value. They are not well adapted to humidity and excess wetting, preferring the dry soil, which makes them ideal for arrangements in the roof gardens.

The decorative herbs can be not only companions of other plants, but also stars. In the summer garden, we will have attractive inflorescences, in the autumn garden, a special colour, and at the first snow falling, we will find evergreen bushes fully developing.

At the level of the roof platform, over a nutritive layer with a proper thickness, together with the gramineous plants used for making the greensward, there were used also specimens of *Cerasium tomentosum* that leads one thinking to the winter snow, due to the silvery leaves and of the multitude of white flowers.

For the arrangement of the roof on the garage, there were chosen plants that make up rich carpets and at the same time a varied colored spot. Thus, for mauve nuances there were chosen *Lavandula angustifolia* "Hidcote Superios" and *Lavandula angustifolia* "Lady Lavander" specimens, adapted to the drought conditions. For the pink nuances, there were chosen *Dianthus gratianopolitanus*, *Dianthus carthusianorum* and *Dianthus myrtinervius*.

The ornamental lighting aims to emphasize the art objects such as the stone well with decorating sand imitating water, of the blocks and garages in order to create nocturne perspectives full of mystery, but also of the green areas. The effect produced by a town, which is well lighted on its inhabitants and especially on the tourists is spectacular, ensures safety and optimism.

In conceiving the urban lighting system, the specialist in the techniques of lighting must taken into consideration the simultaneous existence of two types of lighting: for traffic and decorative. These systems may cross each other, or may function separately, as necessary:

1. The decorative lighting system, arranged in order to emphasize an object or an aggregate of objects, may be isolated from the traffic lighting systems, at large distance from them, and to have around the aggregate of lighting objects, only passenger traffic. In this case, the setting of the lighting fixtures, must be carefully made, so that the big sources of lighting is not located in the visual field of the observatory.

2. The objective or the lighting aggregate is located in open area, at a relatively small distance from the traffic ways. In this case, the decorative lighting system might influence the traffic (for instance: faulty orientation of the projectors, uncontrolled reflections), but the traffic lighting system shall not influence the decorative lighting system.

3. The simultaneous functioning and existence of the two types of lighting systems determines their mutual influencing, most of the times in a negative way, if the luminotechnical solution is adopted without a unitary concept, that should target the harmonious integration of the two types of lighting systems. The quality criteria must be considered: light color, color reproduction, lighting / luminance level, setting the lighting fixtures.

The outdoor lighting shall create not only a more safe garden roof, easier to use and more attractive and with a bigger value, enabling the inhabitants of the block and to their guests to discover the hidden beauties of the landscape and of the garden.

The accentuating lighting with spots is an efficient method to add special effects to the garden, by positioning some lighting fixtures with strong fascicule and concentrated on the area or elements that are meant to be emphasized. Thus, the positioning shall be at the basis of some bushes wells or at the basis of the props on which the roses climb. This method is efficient, but the specialists recommend not the abuse it.

## Obtained results

Where the garden had beds of flowers, hedges and greenswards, they shall be emphasized through some lighting fixtures ensuring the light spreading.

The positioning of the fixtures must be made in such a way to obtain the best distribution of the light. In case of the aggregated of the props for the climbing plants forming arbours, it shall be simulated the moonlight in order to create a romantic atmosphere. This type of artificial lighting shall be obtained with small power fixtures, power transformers as well as with anti-blinding devices and opaque lens.

In case of the 46 block on Cărei street, that is very close to the 45 Block on the Carei street and that has the roof covered with tiles, there shall be set garden lighting fixtures with degree of protection, so that the orientation of the fascicules be upwards. In this way, the lighting shall determine indirect reflections from the roof, and the warm and discrete light generated in that way shall contribute to making a mysterious and nocturne atmosphere.

When one wants to emphasize a natural decorative object, it is recommended as solution to place an outdoor lighting fixture on the part of the object that is aimed to be lighted. More light fascicules produce some shadows and reveal various details.

Another solution is shadowing, that adds a special spectacular but also surprising effect. In this case, there may be used items incorporated in front of the object, in order to create shadows behind it. Opposed to shadowing, making silhouettes is a way through which light effects for gardens may be obtained, as well as outside garages, and blocks. For that purpose, the lighting fixture must be positioned as low as possible and at the basis of the object, thus creating some spectacular silhouettes.

Everyone knows that there is nothing more attractive at night than a beautiful lighted alley. For that, one may use soil incorporated projector lighting fixtures, on the middle or margin of the alley, or lamps, charged by the sun, along the alley. An identical effect may be obtained by means of the small garden fixtures.



Fig. 1. General plan of arrangement



Fig.2. Perspective 3D image



Fig.3. Perspective 3D image

## Conclusions

Recreation is produced by nurturing the body and the spirit and by developing the personality. In time, man developed a certain normal capacity of processing information, and of course, a certain psychical energy of processing information, especially of the elements from the exterior environment. But in the contemporary modern world the whole environment is limited to the office or factory, where man develops his daily activity. Therefore, his capacity to process information is incompletely used and storage of processing energy is produced at certain nerve centers, while others are being exhausted. This energy storage can grow in intensity and can become damaging, triggering an intellectual breakdown, asthenia, neurosis.

A discharge of this stored energy, a mental disconnection is imperative. The ideal way of disconnecting is the contact with environments that can offer a very rich informational flow. Nature is the ideal environment for this.

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