

# **HOW WE CAN PERCEIVE CONCEPTION OF HEALTHY ENVIRONMENT. MULTILEVELLED FEATURES OF SPACE AND MATTER.**

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## **Abstract**

The aim of this article is to understand the conception of a healthy environment from a holistic point of view. Wholeness of Nature contains multileveled features of space and matter. Understanding and a conscious participation in Nature is easier to gain when we come closer to what is objective in the conception of a healthy environment. The meaning of a healthy environment is harmony between the physical and spiritual levels of both Man and Matter.

## **1. Objective of the article – The Concept of Health from a Holistic Perspective**

The aim of this article is to introduce the concept of a healthy environment from a holistic point of view - one which takes into account even the subtle and non-physical features of the world we live in. Conscious participation means that we can connect with the objectiveness (wholeness of nature) when thinking and feeling. A basis for an objective understanding of the term healthy is the feeling of liveliness in ones environment. At the level of feelings, the word lively expresses the essential meaning of the term healthy, it expresses happiness and fullness of life in abundance with joy, creativity and vital energy. What we perceive as healthy is in harmony at both physical and spiritual levels.

## **2. Elements of the Human Being and Features of Space. Contemporary and Future Evolution of Human Consciousness in Relation to Environment**

The relationship between man and environment refers to his multilevelness [1]. Human soul - his/her self, feelings, vital and physical levels have been developing throughout human history. Like in the human being, the spiritual, emotional, vital and physical levels are also present in space and materials. The word healthy - healthy houses - should express the concord of levels of man and space.

In various periods in the past human consciousness had been developing in a number of ways and so has been changing man's relationship with the world. As the development of consciousness continued man began to gradually disconnect himself from nature. The beginning of human disconnection from nature can be observed already in ancient Greece. In those times man became aware of his individuality far more than ever before. In Persian or Egyptian culture people were more in connection with nature.

The change in the state of consciousness seen in ancient Greek culture has influenced the development of all kinds of human activities, art and science. Greek man realized: "I'm thinking! I want to explore my thinking!"

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Today, we are even further from experiencing real nature. For the most part, we think we are independent of the surrounding world. It can be perceived in many human activities, e.g. watching television - which only mediates reality. However, this state is changing at every place where man has begun to look for his lost harmonious relationship with the world. We can see a number of attempts for ecological solutions, e.g. in the building industry. However, a typical and characteristic phenomenon of this movement is to judge the world only in terms of physical features, the countable ones. But the world is far richer and multileveled. Just like man, space has its more subtle levels. When these levels are equally present and are in balance, we can perceive this environment as healthy.

### **3. Conscious Observation of Nature and Matter in a Spiritual Perspective**

Conscious participation becomes meaningful only when the terms full of objectivity affect everyday actions. Where there is conscious observation there is health. We can access the wholeness of nature and the presence of its objective processes and forces through the conscious observation of natural processes, e.g. metamorphosis of plants [3]. Progress in conscious observation of nature as a whole can help us find harmonic and healthy solutions even for buildings. This objective approach to the term health can also be reached by the study of human health from a holistic point of view. [4].

The rudiments of a healthy environment come into existence from thoughts. We can spread thoughts of light and love through celebrations and rituals, e.g. placing of border stones, sanctification of a house, placing of foundation stones, beatification of materials and water [5], celebration of local feasts, announcement ritual of intention to build at the particular place, or erection of a tree on the truss after finishing building the house. In the same vein are conscious and caring cleaning and keeping order on the building site. All these actions lead to a healthy relationship between the spirit of the place of the future house and the human soul.



Pic 1 – The ritual of placing the foundation stone by the house owners. At the spiritual level, this is the new beginning for both the man and the place. It is an act of creating a healthy and joyful connection with the place, the building process and the people involved.



Pic 2 – The clay-modelled draft of intended shape of the house. The advantage brought by the creative process of modelling is higher awareness of what is being created. Artistic work is related to the emotional level of perception. All speculations in later stages about the basic concept and its description can be avoided if the model is created in close cooperation with the client. The model in this picture is made in 1:50 scale.



Pic 3 - Wooden construction of the family house made of natural building materials. This house will be insulated with 350mm (13.78 in) thick cereal straw bales pushed and pressed from inside into the wooden construction (for detailed wall construction please see picture 4). Roof of this house will consist of a shale roof part and an extensive green roof part at the top with lower slope. There will be an 80mm (3.15 in) air space under both roof covers.

#### **4. Matter and Emotions, an Emotional Level of Perception**

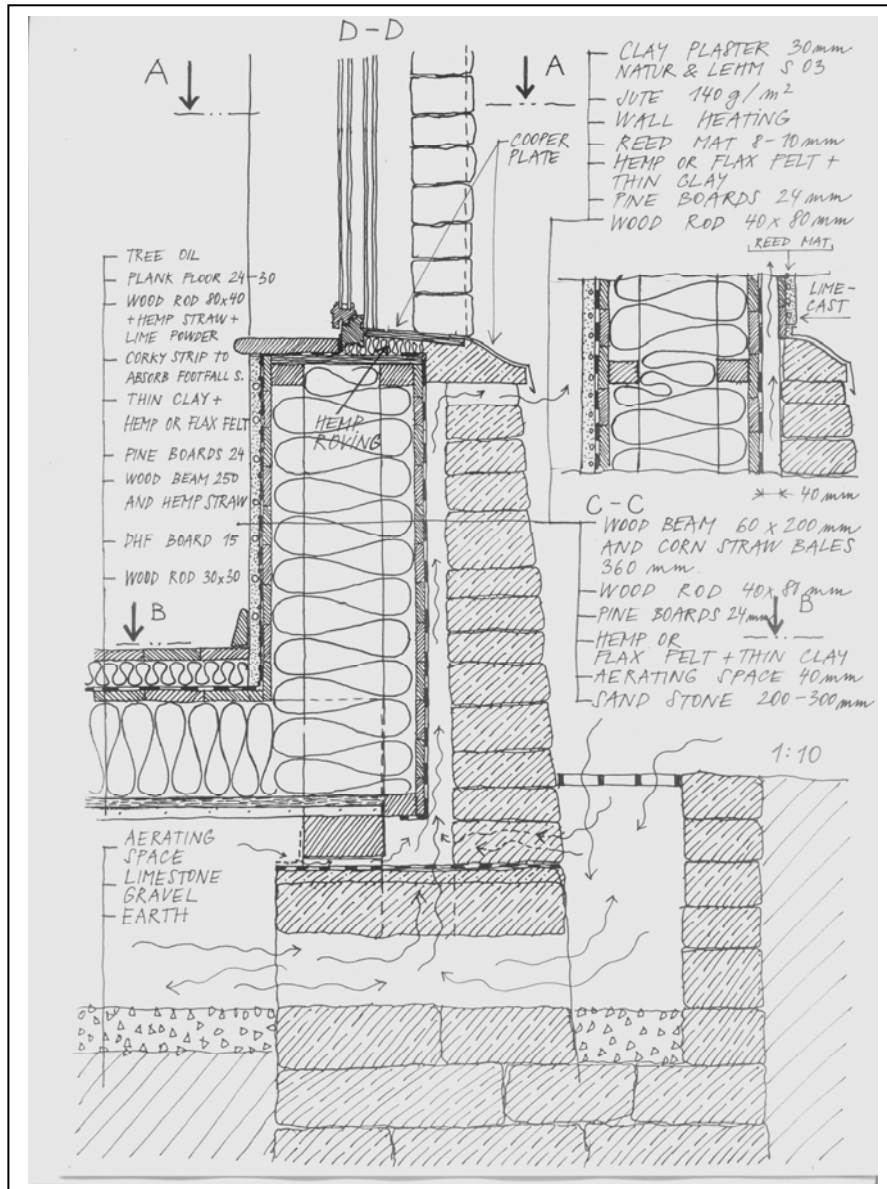
Integration of emotions into space results in the retroactive influence of environment on mood. The atmosphere of a place affects events occurring there. At the emotional level the term healthy hangs together with the beauty of environment and the state of amazement of the world surrounding us. Our activities in an environment are affected by our inner state with which we approach them [6]. The term healthy stands as well for creative, freely expressing emotions and wishes. One of the methods giving us a chance to dive into the stream of lively creativity is designing from clay or Plasticine. Through this activity we can express the look of our ideas and feelings directly into material. It is also a method with social elements. People can work together on the model. They will get to a consensus through sharing opinions within the group and collective creation, and this mood of concordance is then carried further to the final product [7]. As I have experienced, the mood positively affects the course of events during the project, building and it lasts even during use of the building. Since its user has participated in the project, he is more emotionally connected with the building.

#### **5. Vitality and Liveliness of Matter, Level of Vital Forces of Environment**

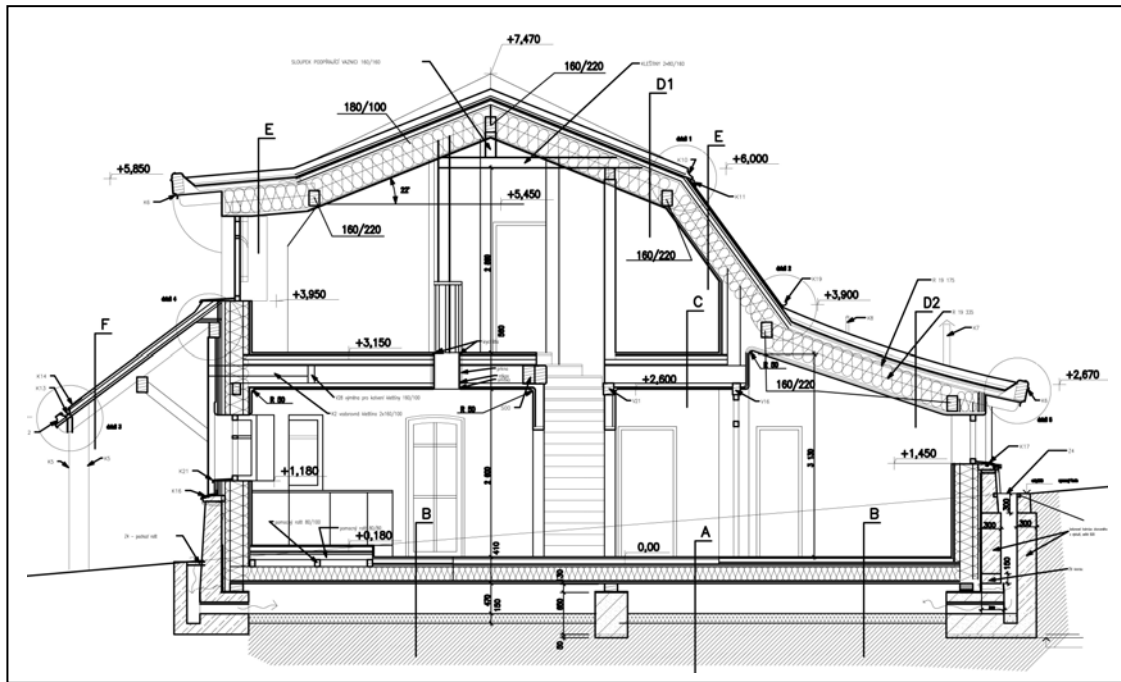
Materials keep their vitality when they are changed by industrial fabrication in the least possible way. It is the same with water [8] and air [9]. Vital activity of air and water can last when they can keep their freedom in the sense of most free movement possible. Qualities of water and air best flourish when they can touch natural materials and flow through shapes natural for them. For water for example "Flow forms" [10] or the through-flow vitalizing filters EWO and Ultra-Koloidator [11]. Therefore I recommend use of natural materials in their unmodified form. The best medium for distribution of water is ceramics, glass or noble metals. The best touch-materials for vital quality of air are wood without paint and clay pargets. In order to keep their vital energies and fulfil the meaning of the term healthy, air and water should be allowed to flow as freely as possible. Therefore, when building, I use most frequently quarried stone, wood, fired or un-fired bricks, clay pargets and insulation made from plant materials.

#### **6. Physical Level of Healthy Construction Materials**

At the physical level we can describe the term healthy material as something we find naturally comfortable. It can also be understood through the measurable features of materials and buildings related to provable features of human health. Considering the above mentioned features of the term healthy also from the holistic viewpoint, I can list examples of the materials and technologies which are healthy for people. These are for example: heaters with radiant heating sources, low thermal systems (wall heaters, fire places and stoves), breathable natural insulations (straw, flax, hemp and wool), steam-permeable constructions with natural steam-retardant (natural paper steam inhibition, jute or felt soaked in clay mash), vacuum aeration (air incoming by suction), natural materials with unmodified surfaces like wood and clay pargets (they keep up the volume of negative ions in the inner environment of buildings), wooden constructions and whole-wooden ceiling constructions (they do not alter the geomagnetic field of Earth), water, stone, wood and clay from local sources, passive and active solar sources etc.



Pic 4 - Detailed cross-section of the enclosure wall with a diffusion-open construction. Material wall structure described from interior to exterior: interior clay plaster with jute in last layer, wall heating, reed mat 8mm (0.315 in) clipped on boards, felt or jute soaked in clay mash (natural steam retardant), spruce boards 24mm (0.945 in), wooden rods 40 x 80 mm (1.575 x 3.15 in), spruce beams 60 x 200 mm (2.362 x 7.874 in), cereal straw bales 350 mm (13.78 in) and 90 kg/m<sup>3</sup> placed between the vertical wooden beams, spruce boards 24mm (0.945 in), felt or jute soaked in clay mash (natural steam retardant), aerated airspace 40mm (1.575 in), exterior gritstone retaining wall. Material floor structure described from interior to exterior: Kredezeit tree oil treated plank floor 24 - 30 mm (0.945 - 1.181 in) bolted to the wooden rod 80 x 40mm (3.15 x 1.575 in) base frame, cork strip - pug sound insulation under the floor frame, felt or jute soaked in clay mash (natural steam retardant), raw floor made of spruce boards 24 mm (0.945 in), wooden beams 240 mm (9,499 in), empty space among the wooden beams filled with hemp or cereal straw 90 kg/m<sup>3</sup>, diffusion-open fibreboard 15 mm (0.591 in), wooden rod 15 x 15 mm (0,591 x 0,591 in) on the bottom side of wooden beam fixing the diffusion-open fibreboard, aerated airspace 500 mm (19.685 in). The floor of the ground floor of the house solves problems with ground humidity and potential presence of radon without using foil insulation.



Pic 5 - Cross-section plan of a house with diffusion-open constructions. Insulated by 350 mm (13.78 in) straw bales. Overall heat loss 6.4 kW including loss due to exhaust duct-ventilation (without infiltration) installed in the bathroom, toilet and north part of house. For detailed plan of insulation please see pic 4.



Pic 6 – The interior of the first floor with semi-finished walls and ceiling boards. On the left wall, vertical wood boards 24 mm (0.945 in) will be nailed to the horizontal wooden rods. On that will be placed a reed mat, low temperature wall heating and 20 - 30 mm (0,787 - 1,181 in) thick clay plaster made of clay from the building site.



Pic 7 - House facade in May. As you can see from the size of the shadow, the overlapping roof shades the southern and western walls keeping the interior free from overheating. The wooden facade and the roof are aerated. The solar collectors are used for heating water.



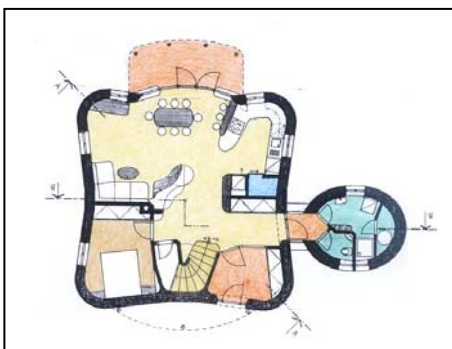
Pic 8 - Southern facade of the family house. Enclosure walls are made of 24 cm (9.5 in) thick thermal insulation bricks. Walls, roof and ground floor are insulated with mineral wool 20, 24 and 14cm thick (7.9, 9.5 and 5.5). Overall heat loss is 8.6 kW. Heating source is a gas furnace - 11 kW.



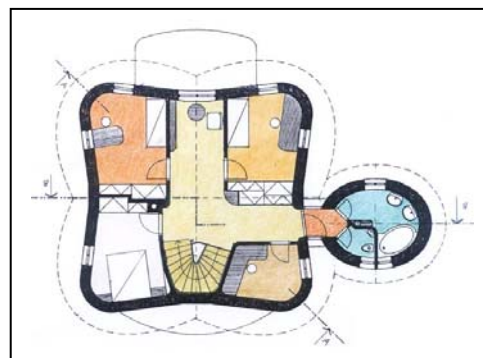
Pic 9 – Accumulator stove combined with kitchen stove situated in the centre of the house on the ground floor. It can be loaded with 10kg of wood and lasts heated for 24 hours - in this case the wall heating in the ground and first floor halls is switched off.



Pic 10 – Semi-finished ground floor. Enclosure walls are clay plastered with hot water heating inside. Ceiling is all-wood sheeted with ceiling boards, reed mat and clay plaster. Partition walls and sound insulation in the floor of the first floor are made of unfired bricks.



Pic 11 - Rooms in the ground plan are situated according to their use during the day and the movement of the sun in the sky. Entrance and staircase are on the north side. Overall home size is 152 m<sup>2</sup>.

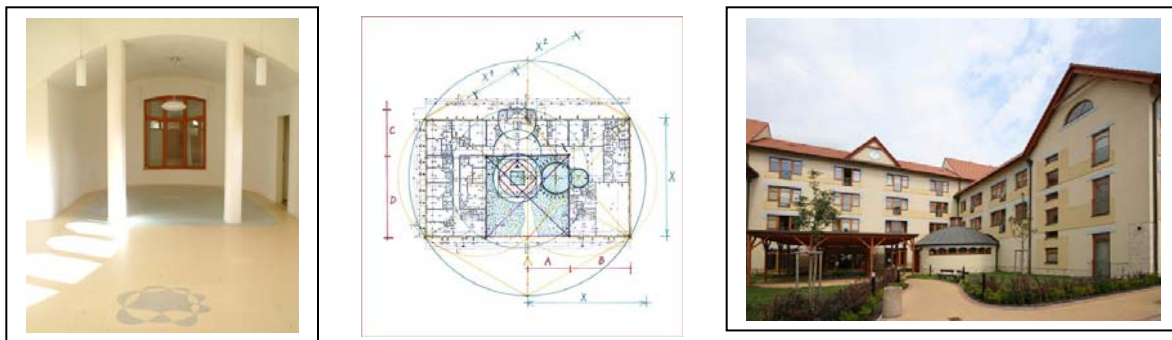


Pic 12 - Bathrooms and sanitary facilities are located in a separate ellipse-shaped building. The reason for this came from the wish to keep away the large flow of water through the hygiene facilities and thereby keep enough vital forces inside the house.

## 7. Social and Moral Impact of Environment and State of Mind on Healthy Environment

Architecture with its activities affects social and moral relations in society. Statistics have proven that removal of graffiti from a borough reduces criminality. Aesthetics of environment have an impact on morals and behaviour of people. Similarly proven has been the fact that criminality can be reduced by collective meditation of people in a particular area. Obviously, the environment is influenced on both the visible and mental levels. From my own experience with supervising at building sites I know that relations among employees and mood at the site are very important. This can be improved for example by more frequent conversation with labourers and creation of positive relationships. What makes building really healthy is the multileveled reality of our world.

This article outlines what the term healthy environment incorporates from the multileveled point of view at the levels of human beings and levels of environment. For the sake of connecting man with nature [12], it is desirable to deal with environment holistically.



Pic 13, 14, 15 - Nursing home in Praha 5 - Zličín. The major motif of the building is the entrance garden with a chapel. The garden with the entrance pergola is open to the south. Windows of the bedrooms are orientated toward the garden so the residents can see people entering, listen to the fountain and enjoy the greenery. Proportions of the whole building are in line with the principles of harmonic proportions. In socially focused architecture the aesthetic aspect is extremely important since it has a moral impact on satisfaction and takes part in the creation of social relationships among the residents.

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