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FROM GEOGRAPHY TO ARCHITECTURE: TERRITORIAL AND SITE ANALYSIS ON DESIGN PROCESS – CASE STUDY: GENERAL HOSIPITAL OF MUNICIPALITY OF GOSTIVAR

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SUMMARY

The purpose of this paper is to present some of the environmental analysis that are taken into action for a proposed reconstruction and new design for the municipality hospital of Gostivar. The result showed that these analysis give us a summary description based on information available as to the urban, geographical and territorial aspects, a safety measure and orientation in terms of sustainable design. This paper represents a design methodology used and only part of overall analysis for this case study.

Key words: sustainable, environment analysis, hospital design

INTRODUCTION

Design process is a series of steps that engineers follow to come up with a solution to a problem. As a sometimes highly rational effort, is embedded in overall trial-and-error processes. Over the past hundred years, even when driven by the most positive intentions, designers have been active promoters of the ideas of well-being and ways of living that we have recently and dramatically discovered to be unsustainable.

Interaction with nature is important to human well-being and development (Kellert, 2005), for which even the design itself is oriented. Designing buildings is about providing healthy environment within the facility itself, and new approaches have been developed in terms of building design with the sole objective and emphasis to sustainability.

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SUSTAINABLE DESIGN

The most cited definition of sustainability is the Brundtland Commission's definition:" Meeting the needs of those present without comprising the ability of future generations to meet their own needs". Keller (2005) describes that the main objectives of sustainability are economical and resource efficiency, health and pollution decrease (Kellert, 2005). Williams (2007) points out three key scalar elements that should be considered in initial design process: (1) Connectivity: Designing with reinforced relationship between the project itself, the project to site, to community and ecology, aiming to minimal changes to natural systems functioning, and reinforcing-supervising those natural characteristics that are specific to the site. (2) Indigenous: Design with and for what has been resident and sustainable on the site for centuries. (3) Long life, loose fit: Design for future generations while reflecting past generations (Williams, 2007).

Also, in this case is worth citing Dubos (1980), who points out that: "Conservation of nature is based on human value systems that rather than being a luxury are a necessity for the preservation of mental health. Above and beyond the economic reasons for conservation there are aesthetic and moral ones which are even more compelling. We are shaped by the earth. The characteristics of our environment in which we develop condition our biological and mental health and the quality of our life. Were it only for selfish reasons, we must maintain variety and harmony in nature." (Dubos, 1980).

A sustainable site analysis begins with study of the sun and its impact on the region, the community, and the site. It includes its climate and ecological niche and how the sun angle, intensity, and duration establish the bioclimatic and microclimate. Solar, soil, and water patterns and flows have been sustainable resources on the site for many years; these are the free generators of the natural character and form of the site. Working against those natural patterns is expensive, requires significant mechanical intervention, and is, therefore, not sustainable. The natural patterns and characteristics are unique to each region and site, and understanding and connecting to them will benefit the design.

CASE STUDY

In this paper are presented environment studies done for the reconstruction and proposed design for the municipality hospital of city of Gostivar. For this paper, we distinguish only part of analysis done for the case study,



Gieo Informacione



Nr.4. Viti 2015

Geo Information

dealing with territorial and environmental parameters taken under consideration for the new designs of the building.

The issues of environmental protection and environmental control represent since a long time the key elements on which rests the concept of "Towards Sustainability" and determined, since the early nineties, the establishment by the European Union of voluntary instruments including EMAS, which allow Member States to activate mechanisms and rules, even market, to commit organizations to adopt self-monitoring tools aimed at preventing pollution and improve environmental performance (APAT - Agenzia per la protezione dell'ambiente e per i servizi tecnici, 2003).

To analyze the environmental impacts associated with a service such as that provided by a hospital and to manage them with a preventive approach, it is appropriate to extend its borders, with a flexible and adaptive logic.

TERRITORIAL FRAMEWORK

The main goal was to retrieve information's relevant to territorial framework with the essential goal to systematize and evaluate both the connections of the hospital with the territory (in terms of accessibility and area of influence of the hospital), and the sensitivity of the territory in relation of the possible presence of sensitive receptors. This provides a study of the main characteristics that distinguish the area surrounding the case study. The physical space must necessarily be extended to the area next to the case study-hospital and the surrounding area, i.e. one that can be influenced by the activities of the organization. This gives us a summary description, based on the information's available about the urban aspect, geographical, territorial, natural, historical, cultural and environmental.

The framework is organized according to the following subject areas:

- 1. Administrative urban; 3. Historical and cultural landscape;
- 2. Geographical territorial; 4. Description of environmental system.

1. Administrative – urban framework

The object of administrative-urban framework concerns the retrieval of data and information relating to the planning instruments and sector plans in force in the municipality of case study. It is out of the scope of this paper to mention all the instruments and sector plans in force.



No.4, Year 2015





2. Geographic-territorial framework



The object of geographic-territorial arrangement of the area of interest concerns the retrieval of data and information relating to the settlement conditions, with the aim of providing and overview of the main features of the hospital site location in reference to a wider territorial context, morphological characteristics (Fig.1a), and altitudes of the area as well as the main behaviour conditions of the settlements, land use (Fig.1b), giving thus the necessary quantitative information in report to the building density conditions, construction types, the nature and level of the infrastructure (Fig.1c), the level of connection of the area (Fig. 2) and whatever else is deemed necessary in order to clarify the conditions of geographic aspects.







Figure 2. Isochrones of the user-base area

3. Historical and cultural landscape;

The object of this subject is to find the possible presence of nearby places or sites of great interest as well as protected areas. The wide area of the case study site did not include any of this subject parameters.

4. Description of environmental system.









Figure 3. Environmental framework analysis a) Definition of the wider area; b) Ridge and draw lines of wider area; c) Vegetation density; d) Vegetation structure

The description of the environmental systems potentially subject to interference with the activities in the area of interest, will help to identify, analyze and evaluate the significance of the scientific data base, both cartographic and descriptive, in order to define the environmental framework, namely the state of the components and factors of the structure of the given system environment, natural and human. While it was difficult to find the appropriate databases, it was necessary that in addition to the acquisition of the information's available, proceed to an interpretation of the data defining the main factor and parameters that characterize the environmental factors analyzed for the site.











The result of this phase was the definition of a synthetic descriptive picture of the urban characteristics, geographical – territorial, landscape – cultural and environmental such as the definition of wider area of the hospital, ridge and draw lines of the area, vegetation density and structure, geologic map, slope maps, permeability of the area and artificialisation of the area.

DISCUSSIONS

Designing is a very complex process, and to have a better insight about the environment perspective of the building itself, we should explore external parameters. Analyzes for case study dealing with territorial - geographic – urban involvement, showed that, to be successful in the design of buildings, especially those of hospitals, designers should not start the analysis from the subject itself, but they should be expanded a broader context. The objective is to classify information's, identify and analyze current issues, detect weak signals of emerging issues, speculate on likely future issues, provide organized information and to foster strategic thinking.

The results of above analyzes, provide a descriptive overview of urban and territorial characteristics of the area and can be used in subsequent stages of design correlated with parameters of other phases that follow, especially with those of environmental impact. They can put in picture whether environmental aspects have influence, or not, unlike the inherent characteristics such as quality, risks etc. They can help in the effectiveness and efficiency throughout all subsequent stages, and can help understanding the external environment in which the building will operate and anticipate as well as respond to significant shifts.



No.4, Year 2015



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