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Knowledge is the key to innovation in architectural design

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Abstract

Attention is drawn to tacit and explicit knowledge, in particular regarding the functioning of closed scheme buildings, and integrated designing. Using an example, the significance of A/V shape ratio has been discussed, and the importance of synergy in multi-aspect design.

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Keywords: architectural design, explicit and tacit knowledge, A/V shape ratio, synergy

1. Introduction

Engineering, innovation and design activities take place in the context of the intellectual-ecological revolution. It is a revolution (like any other, to a greater or lesser extent) based on knowledge, [1,2].

The revolution is developmental, but what can already be said is that a new term: architectural IQ has become its derivative. The dynamics of new examples/practical implementations is astounding: [3,4].

An architect, taking this trend on board, confronts not only the need to respect the applicable laws, meeting the basic requirements of design, but also the need to truly grasp many topics, issues, signalled in Fig. 1; see also [5,6]. It is a tangle of problems; their solving/use brings about the following observation:

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An architect should know that it is not enough to have a small office at his/her disposal in order to meet the requirements indicated in Fig. 1; to cope with all this one needs to have a competent team, use new ways of organization (e.g., Integrated design), new tools (e.g., BIM).

2. Knowledge is intellectual and creative capital

Fig. 1 shows some of the motifs which result from the architect's entering the Vitruvian triad or a triad entered into sustainable development. Both triads are shown in the figure, while the oval marks basic pillars which are indicators of sustainable development. What ties these threads is KNOWLEDGE, both designer's and community knowledge.

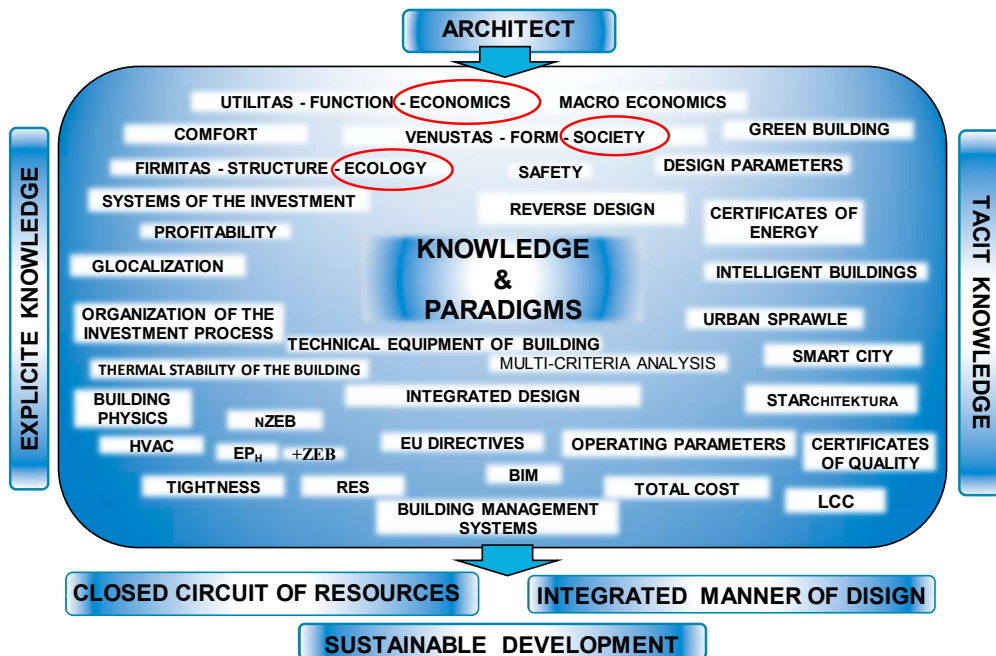


Fig. 1. Architect in the jungle of knowledge - selected items (own arrangement)

From the an architect's viewpoint (and his design office viewpoint), there are two kinds of knowledge. Formal (explicit knowledge) and hidden (tacit knowledge). The former is the knowledge obtained, originating from standards, technical conditions of the design, and may even be obtained from technical specifications. It also includes design paradigms. The latter concerns the ability of individual creativity, and is used in the design on a regular basis.

Both types of knowledge are intellectual and creative capital. The architect who is unable to use both these kinds of knowledge loses - at least - their professional prestige. Nonetheless, knowledge management is also acquiring knowledge, education (of the architect and society), selection, storage. In the era of digitization, IT technologies acquire special significance. The scope and amount of knowledge expands in accordance with the requirements of development and human resources. Hence, the architect and his/her studio should be a learning organization. It remains an open question whether in contemporary categories it would be a step towards an intelligent organization?

3. Knowledge and anti-linear design paradigms

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