



136

Educating Building Science Engineers: Links between Geometry and Building Science

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Building Science examines the intentional and preplanned restructuring of space, whose measurement and theoretical approach are being organized by Geometry. Their relationship is, therefore, direct but not necessarily simple or accurate. Geometry, as a branch in the field of Mathematics, is a theoretical cognitive subject with logical and virtual dimensions. It represents the simplest thought pattern, as something linear, logical and objective which, according to Aristotelian logic, defines that "if x then y" rationally and inductively. On the contrary, Building Science is primarily an applied science, an art in which, issues such as those involving senses, emotions, visual perception and its accompanying optical illusions are being taken into account during the design and the construction process. Thus, Building Science provides its own dimension concerning geometrical approach, recording and understanding.

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Given the aforementioned point of view, Geometry, as the coherent result of a serial, inductive reasoning and processing which forms a basis in solving practical problems, is addressed to intellectual intelligence, while Building Science, as a product of associative reasoning, examines the correlation between images and emotions. Consequently, refers to emotional intelligence and its related conceptual effects. As students, engineers engaged to Building Science are invited to learn how to combine these two kinds of intelligence within their field of study. In other words, they are invited to consolidate on how the mathematical-logical approach defines “ $2+2=4$ ” precisely and always while taking into account the subjective perspective which transforms the “precisely and always” to “approximately and where appropriate”.

This paper attends to analyze the parallel study of Geometry and Building Science while examining its importance, regarding the education and future training of all engineers engaged to Building Science, both as scientists-technicians and educators. ■

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