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**Researching and Redefining
the Content and Methods of Teaching Construction
in the New Digital Era**

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The teaching method

Our concern as construction teachers, is to make students (and to some of our colleges in the design studio) understand, that buildings are composed from *materials*, that form *components*, the assembly of which, define space, organize circulation and meet other design constrains. Finally, construction affects the design process, *influencing the Architectural proposal* and materials with their substance and characteristics, *determine the tectonic quality* of the building.

Its crucial for students to realize, that materials do not only specify the texture of various building elements, such as walls, floors, ceilings or by covering the exterior surface of them. Materials *participate* in the assembly of the building itself, *shaping* their structure, *defining* their volume and *contributing* in their final appearance.

Even if students have been taught about materials as individual elements, or are kept informed about new ones and all new construction methods, the *key issue* is the understanding that construction is an *important part* of the design process.

New technologies also and their potential, should be gradually introduced in the content of construction teaching. Drawing on a paper or a screen, is two-dimensional and therefore, difficult to grasp the sense of volume, an indispensable tool to start feeling space itself. Virtual models, for instance, will not help students understand volumes in a three-dimensional expression on a computer screen, as the construction of a real model will do.

An approach to construction teaching

To make students understand construction as a design process is a difficult task, but a challenging one.

The *analysis* of a building in its components, focusing in selected areas, going from the essential to the more complex, could be a starting point. It is important that the construction details have to be of the same building, in order to recognize them as part of one entity.

The *synthesis* process by designing a simple building or construction could be the continuation. The construction teaching should be more *elaborated* by programming tasks defining construction problems of a simple but qualitative nature. The design effort should be more concentrated in resolving complicated construction details, rather than other design parameters.

Models in the design process could be decisive in understanding volume and space. The make of *models with simple materials*, at various scales, gives to the students the opportunity to gradually comprehend volumes. Also the difficulties they meet in *building* their models, obliges them to invent ways of *supporting* the elements they use for the model as a first step towards the understanding the complexity of a structure.

As students mature, new technologies became indispensable, as tools that help understand implement and research the design process. They can use intricate software for drawing purposes, as they will command it to their full extend, visualizing the three-dimensional models of their design, not as spectators, but as creators.

Obtaining *information* with the help of new technologies should be available to students, from the very beginning of their studies. Their involvement in searching

information will be moderated from a simple search of materials to a more complex one of construction methods.

The research

The creation of a site where we as construction teachers could contribute with information about experiences from our teaching might be a useful tool to enrich our expertise. We can simply keep in touch, research together or collaborate in making common or parallel projects. Opening our schools among ourselves, might improve our teaching or just making it more fun.

