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**Searching for a White Blackbird
Teaching AEC in the New Digital Era**

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Overviewing the history of Architecture, Engineering and Construction (AEC) in Europe one can, briefly conclude that till World War II most buildings were elevated with a small differentiation of materials. Most commonly used were: bricks for walls, wood for floors, roofs, stairs, doors and windows, plaster in the exterior as well as in the interior, and natural stone (floors and facades).

Besides this, structures were often based on massive load-bearing systems with direct descent of loads. Post-beam was rather an exception because it could ask for the (expensive) use of concrete which wasn't readily available as it is nowadays.

Regarding post-war, architects had to face a huge increase of new construction parameters all developing for common use such as:

- curtain wall for skeleton structures, initially to erect on site but more and more prefabricated to join using a new logic of connectivity
- building physics control
- increasing needs for technical equipment
- fire safety concepts
- considerations of sustainable exploitation and materials of buildings
- safety of on-site-execution as well as of exploitation.

At the same time and speed a multiplicity in the supply of materials involved designers in such complexity that, according to Christian Schittich (publisher of the famous magazine 'Detail'), after execution more and more architects cannot explain any details of their own conceived buildings. They do not even possess drawings because they were actually elaborated by engineers and contractors.

Obviously teaching construction and tectonics becomes a heavy part in educating architects, for teachers as well as for students. More specialists (in building-physics, ecology, acoustics, ...) are in attracted to fill in appropriated study curricula while a larger amount of know-how seems to emerge from contractors and producers of building materials instead of educational centres.

Since the seventies the digits enter the world of architectural design too. First as a drawing tool but faster than expected as a real instrument of design. They certainly produce many opportunities for project presentation and execution plans as well as for parametric design. The University of Bath in the UK even set up a new conference, the so called Digital Tectonics.

The never-ending commercially driven race between software and hardware developers also generates an endless quantity of interfaces, operating procedures, commands and drawing techniques that can only be mastered by specialists working day-by-day on these programs.

Exploration of and application in both domains of knowledge i.e. construction and digital methods seems more and more impossible to get managed by one person. Perhaps this is the reason why at many schools an autonomous CAD-cell is often established. In this way lack of collaboration and synergy between educators involved in designing, construction and computing is a dangerous trap easily to walk into due to overemphasizing the means to and end which, at least, should be architecture at first sight and finally people living site-bounded together.

So far so good a new approach in appointing teachers in construction and CAD urges. The creation of duo-jobs in which specialists of both disciplines work effectively together can be useful as far as mutual influence is guaranteed and, above all, made visible for students. Assimilation of the complexity of the architect's world and learning methods to master it, can give them the self-confidence they will undeniably need.

