

4th YEAR

Seminar 2B – INNOVATION AND TECHNOLOGY

Paulo Mendonça

LEARNING RESULTS

- Knowing the aspects associated with the techniques of extraction, processing and production of materials relevant for the definition of building systems;
- Identify and describe the distinguishing characteristics of the major building materials and construction systems;
- Recognize, understand and integrate new materials and emergent construction technologies in the creative process of architecture;
- Represent and construct a prototype of innovative building system, developed according to the specificities of the architectural object in which it operates.

PROGRAMME

The curricular unit Seminar 2B aims to stimulate a critical thinking and innovation on the relationship between materials, systems and construction. During the classes are initially presented and characterized the materials and conventional building systems and are subsequently raised new possibilities. These new possibilities can be applied for conventional materials as well as for new materials and emerging systems on architectural solutions which enhance functional advantages with unexpected tectonic approaches.

Through theoretical lectures and practical exercises, it will be developed throughout the semester some discussion issues which concepts should be applied in a group report in the middle of semester. At the end of the semester an individual experimental exercise should be done, which will consist on the design / construction of a building system to develop in close relation with the Atelier 2B exercise.

BIBLIOGRAPHY

ADDINGTON, Michelle e SCHODEK, Daniel; *Smart Materials and New Technologies – for Architecture and Design Professions*, Architectural Press, 2005.

DEPLAZES, Andrea; *Constructing Architecture: Materials, processes, structures – a handbook*, Birkhauser, Basel, 2005.

HEGGER, Manfred; AUCH-SCHWELZ, Volker; FUCHS, Matthias; ROSENKRANZ, Thorsten; *Construction Materials Manual*, Birkhäuser, 2006.

MANZINI, Ezio; *A matéria da invenção*, Centro Português de Design, Lisboa, 1993.

SCHITTICH, Christian; *Building Skins – Concepts, Layers, Materials*, Birkhäuser; Edition Detail, Munchen, 2001.

SCHITTICH, Christian; *Building Simply*, Birkhäuser; Edition Detail, Munchen, 2005.

TEACHING METHODS

Theoretical and practical. Classes will be taught in blocks of 3 hours per week, including lecture exposures, punctuated with moments of discussion and short exercises. The topics covered will be coordinated with the exercises of practical classes, supporting and encouraging the work developed there. Throughout the semester the students will perform a group report made about specific themes in the midterm. At the end of the semester an individual experimental work should be made, consisting of a construction detail prototype in real scale, including its respective descriptive memory.

EVALUATION METHODS

Continuous evaluation. The final evaluation results of the weighted average of the grades of the two main elements of assessment, accounting for 40% the evaluation of the investigation report of group and 50% the individual experimental work and its descriptive memory. It also constitutes an evaluation element the participation (behaviors and attitudes - in 10% of the total), and the frequency to at least 2/3 of the classes is mandatory condition for approval.