

**Construction Teaching
Methods:
Construction Exercises**

Although the main subject of the second EAAE-ENHSA WORKSHOP OF THE CONSTRUCTION TEACHERS SUBNETWORK is "The Role of Exercises in the Teaching of Construction", we consider it necessary to first of all make a brief assessment of how we think the topic of construction should be taught.

The two exercises described in these two posters are directly related to this assessment, and have no relevance outside this framework.

To teach construction is to teach architecture: construction must not be isolated from the process as a whole. Its practical aspects, then, such as these exercises, give us an overall idea of how to teach architecture.

Our method is based on the idea that the existence of a wide range of different materials and technical solutions makes it impossible to become well acquainted with all of them. *Therefore, we do not focus on giving our students specific data; above all, we try to teach them to employ analytical tools and develop analytical skills.*

We have chosen for this workshop two basic exercises that are carried out at very different moments all along the five years of the Degree in Architecture. They demonstrate two different ways of relating the theoretical knowledge acquired at the School to the realities of Construction.

These two exercises should help you to understand the teaching methods employed at our school, where we never lose sight of the complexity of the world in which our students will have to work.

Title of the First Exercise:

"The High School I have been studying in"

Architectural and Technical analyse. New vocabulary.

Content of the Construction Exercise

The goal of this first exercise is to rediscover in a technical and architectural way one building that the student already knows. This building is the High School they have been attending to until they reached the University.

They have been living that building, feeling it, sometimes suffering it some things they like and some things they don't now it's time to understand it.

We try to make the student realise that Architecture and Construction are not new for them as the world we live in is the best scenario for learning.

Even if they are just beginning a new stage of their lives, they all have a wide baggage of knowledge in those topics.

This first course we want our students to *learn to observe*. We will try to make them conscious of all the things they already know. Give them *technical vocabulary* and *analytical tools* to understand the phenomenon that are related with construction: climate control, sun protection, noise control, ...

Year in which it is Taught

It is a compulsory subject taught the first year of the Degree.

Duration of Study

Students work in this exercise for four months organised as follows:

First Stage: Description of the Building

- Analysis of the structure
- Climate control
- Sun protection
- Waterproofing
- Noise control

Second Stage: Critics

(Structured in the same points as for the first stage)

Third Stage: Other Solutions

Students find in some other buildings examples of different ways of constructing so as to improve what they think it is wrong in their High School.

Staff/Student Ratio

The staff is composed by one professor, one lecturer and two assistants.

Depending on the registrations we normally have one hundred and sixty students more or less.

For the theoretical lessons we organise two groups of eighty students each.

The practical lessons are structured in four groups.

The scheme is the same for students that course the degree in the morning, as well as students coursing it in the afternoon.

Title of the Second Exercise:

Building details of the student's project.

Content of the Construction Exercise

The main purpose of this exercise is to develop the building details of a project chosen between those designed by the student throughout the Degree.

In order to reach this purpose, the students would have to come into contact with building industry.

This work has two main goals. One is the acquisition of the needed understanding and skills to participate in the building process applied to a project known and loved enough by the student to motivate him in this topic. The other one is to introduce in the student the clear idea that the building materials and systems are the language of the Architecture.

Year in which it is Taught

It is a compulsory subject realised by the student during the fourth year of the Degree, corresponding to the last course of general construction (The fifth's year construction topic is Building Pathology and Restoring technologies).

Duration of Study

Students work in this exercise for four months organised as follows:

- Constructive development of the facade and the roof of the building, with particular emphasis in the junctions between roof and overstanding elements, roof and facades, facades and ground and/or underground.
- Encounter of the massive walls and windows or other openings.
- Constructive development of an inner space, including design of some fix furniture.
- Constructive development of a space where water is used (Bathroom or Kitchen)
- Development of the specifics details of the project that only its author can do, in strong relation with the architectural intention.

Staff/Student Ratio

The staff is composed by one senior professor, one professor and three associate teachers. All of them are architects and practitioners.

In depending on the registrations we normally have one hundred students more or less.

For the theoretical lessons that last three hours weekly, all the students stay together.

During the two hours by week of guided practical work we organise four groups with twenty five students each.

Specialisation of Teachers

Our entire teaching group is composed by practitioner architects. This makes easier the interpretation and understanding by the student of the relationship between construction details and architectural intentions and expression. Nevertheless every teacher overlaps a specific subject in order to complete the education and training of the student.

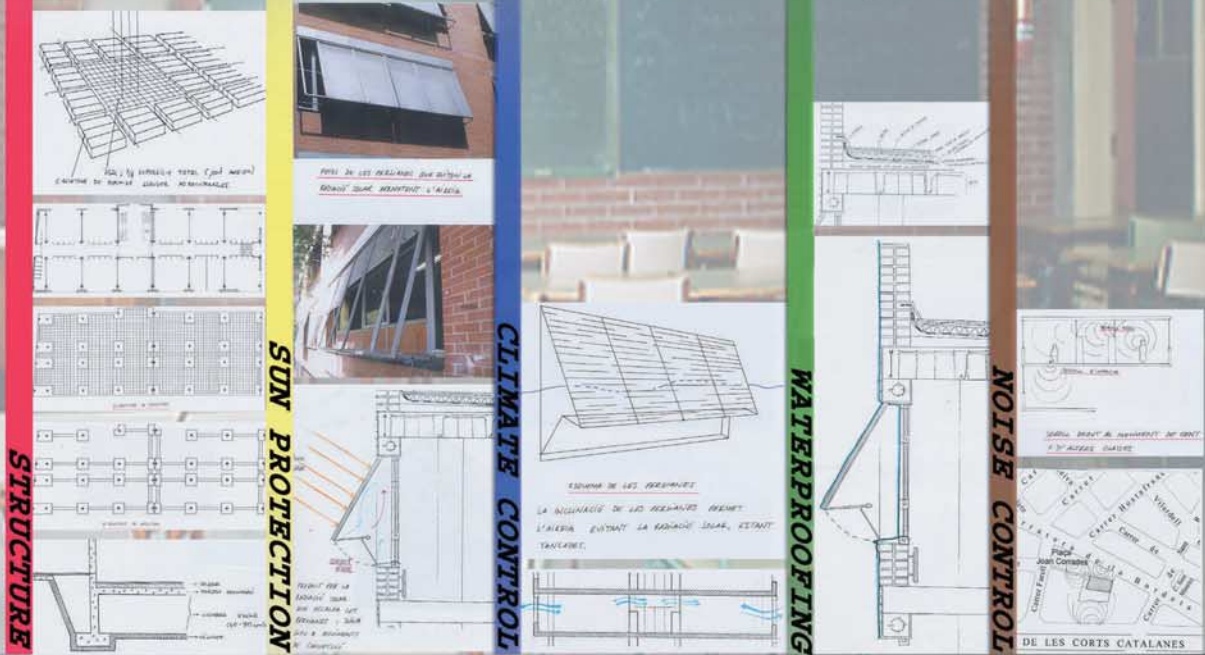
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The Teaching of Construction in Architectural Education

Construction Teaching Methods : The Exercise(s) in the Teaching of Construction



TEACHING METHOD

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THE EXERCISE

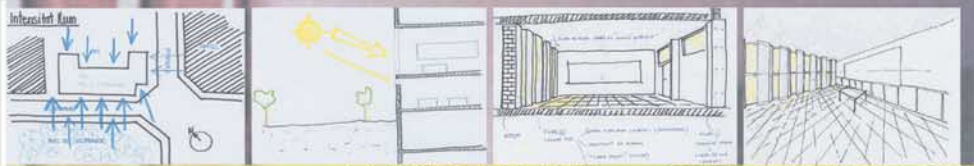
TITLE OF THE EXERCISE:
"The High School I have been studying in". Architectural and Technical analyse.
New vocabulary.
CONTENT OF THE CONSTRUCTION EXERCISE.
The goal of this first exercise is to rediscover in a technical and architectural way one building that the student already knows. This building is the High School they have been attending to until they reached the University. They have been living that building, feeling it, sometimes suffering it ... some things they like and some things they don't ... now it's time to UNDERSTAND it.
We try to make the student realise that Architecture and Construction are not new for them as the world we live in is the best scenario for learning. Even if they are just beginning a new stage of their lives, they all have a wide baggage of knowledge in those topics.
This first course we want our students to learn to observe. We will try to make them conscious of all the things they already know. Give them technical vocabulary and analytical tools to understand the phenomenon that are related with construction: climate control, sun protection, noise control, ...

YEAR IN WHICH IT IS TAUGHT:
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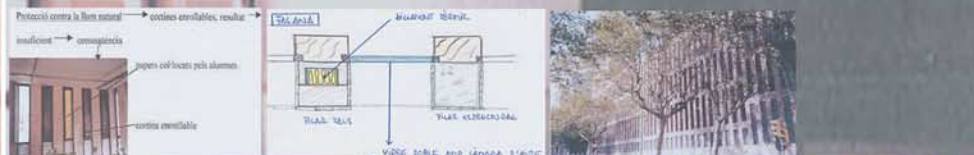
DURATION OF STUDY
Students work in this exercise for four months organised as follows:

- FIRST STAGE: DESCRIPTION OF THE BUILDING
 - Analysis of the structure
 - Climate control
 - Sun protection
 - Waterproofing
 - Noise control
- SECOND STAGE: CRITICS
(Structured in the same points as for the first stage)
- THIRD STAGE: OTHER SOLUTIONS
Students find in some other buildings examples of different ways of constructing so as to improve what they think is wrong in their High School.

STAFF/STUDENT RATIO:
The staff is composed by one professor, one lecturer and two assistants. Depending on the registrations we normally have one hundred and sixty students more or less.
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DESCRIPTION - SUN PROTECTION



CRITICS - SUN PROTECTION



OTHER SOLUTIONS - SUN PROTECTION

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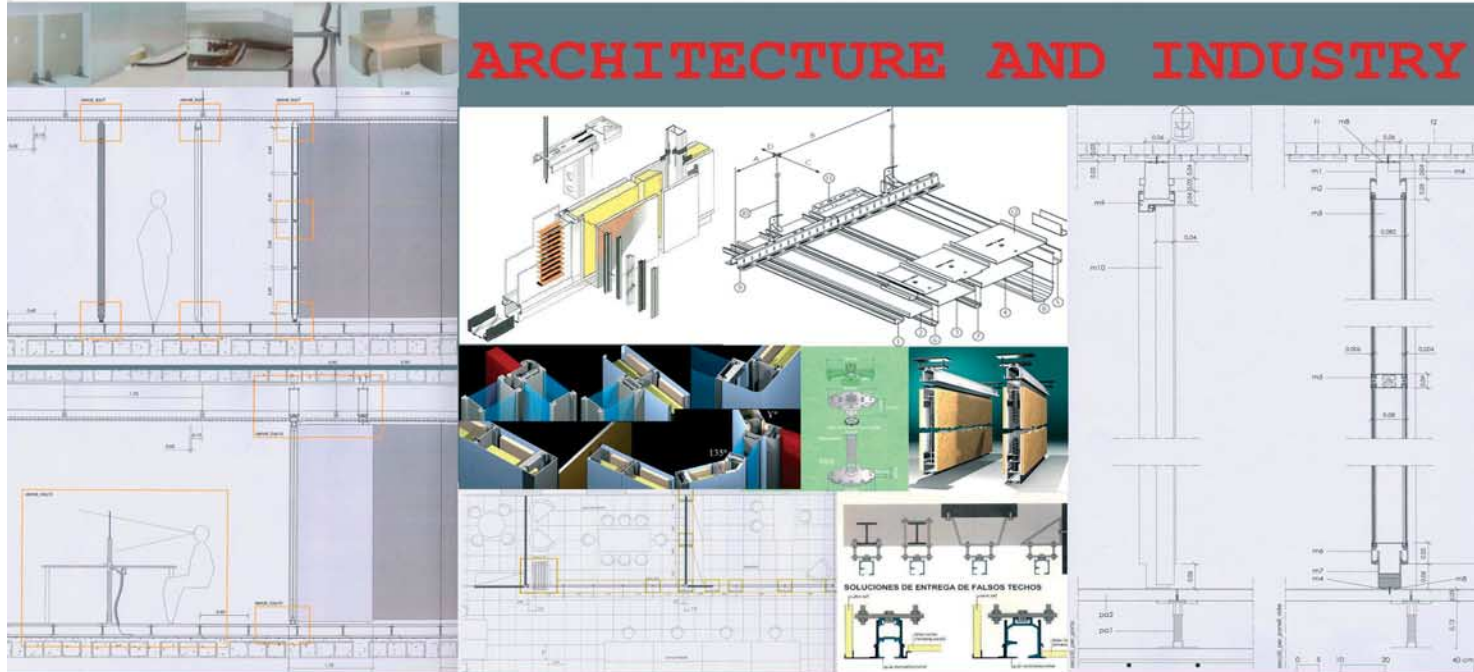


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ARCHITECTURE AND INDUSTRY

DESIGNING BY MEANS OF CONSTRUCTION



FOURTH YEAR -
THE EXERCISE

TITLE OF THE EXERCISE:
Building details of the student's project.

CONTENT OF THE CONSTRUCTION EXERCISE:
The main purpose of this exercise is to develop the building details of a project chosen between those designed by the student throughout the Degree.

In order to reach this purpose, the students would have to come into contact with building industry.

This work has two main goals. One is the acquisition of the needed understanding and skills to participate in the building process applied to a project known and loved enough by the student to motivate him in this topic. The other one is to introduce in the student the clear idea that the building materials and systems are the language of the Architecture.

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(The fifth's year construction topic is Building Pathology and Restoring technologies).

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