

Henry van de Velde Higher Institute of Architectural Sciences Antwerp, Belgium

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In 1999 the **Henry van de Velde – Higher Institute of Architectural Sciences** launched a new approach to architectural education, the so-called "the third way" which can be briefly summarised as a teaching method aiming at a strong and coherent integration of theoretical courses in the studio-practice (3 x 4h /week) of architectural design.

To guarantee a contribution of theoretical education in the design studios, professors of these courses, themselves, are added to the staff of the design-studios. Their collaboration, the so-called "**capita selecta**" is thematically related to town planning, construction, sustainability and typology.

Special lectures concerning structures, the building envelope, technical equipment, materials etc...) initiate once a week the design sessions. These lectures, related to specific assignments of the students, are given by the theory-professors.

This dual approach - i.e. material and immaterial - confronts students permanently with the triangle CONSTRUCTION - FORM - FUNCTION in which architecture should be elaborated, based on a vision on culture and society.

The teaching method is facing two problems:

1. the enormous supply of information concerning materials and construction
2. students' fear to go about this duality

Therefore we promote the following teaching method in facing:

a. Theoretical courses

Integration can only be successful when it starts from a strong theoretical teaching of principles of construction combined with a permanent transmission of knowledge dealing with materials. Traditionally these courses were made up linear i.e. on the one hand starting from simple housing and ending with complexes as airports and on the other hand starting from foundations and ending with roofing.

It's our vast conviction that the approach nowadays had to be **concentric** i.e. from the beginning the

theoretical course in construction has to deal with both small and great buildings but with consideration of problems of the 1st, 2nd and 3rd grade corresponding to the 1st, 2nd and 3rd Bachelor.

Example: a veneer wall can be explained and educated to

1st-Bach-students in its continuity (tectonics, physics, durability, overview of materials)

2nd-Bach-students in its edgings (surfacing, heading, footing)

3rd-Bach-students in its connectivity to other parts such as structural elements, roofs, canopies, etc.

The motive and main advantage is the need for permanent training as it will be impossible to study for the examination of the 3rd Bach without rehearsing the principles of the material of the previous Bachelors.

Exercises in which specified problems of construction are solved out of a context of a given building or site, should be connected to this courses and are given by the same teacher. The further mission of this teacher has to be integrated in the studio-practice.

A documentation-centre where books, samples and internet are permanently available, is linked to this courses and studios. The theoretical professor makes up a special syllabus with the most important data of materials, which can be used during exercise- and studio-sessions.

b. Studio-practice

Theory-professors of Construction add the staff of the design-studios to make clear to the students how to go about the knowledge of the theoretical courses so aiming at the building-up of a self-confidence of the students.

It is important that theory-professors participate actively by considering different possibilities of problem-solving, even by drawing, even by consulting data-bases **together with students.**

A good bedside manner yields more than a permanent attitude of examining.

Bachelor - Arch 1

Module Name	Lecture	Practice	Self-study	Study time	ECTS credits
Module Science 1	24	12	84	120	6
Mathematics 1	24	12	84	120	3
Physics 1	24	12	84	120	3
Module Building Technology 1	24	12	84	120	3
Construction 1	24	12	84	120	3
Building Materials 1	24	12	84	120	3
Module Architectural and Cultural Sciences 1	36	12	72	120	6
Cultural History 1	24	12	84	120	3
Man and Society	12	12	84	108	3
* Sociology	18	18	84	120	3
* Philosophy	18	18	84	120	3
Module Methods and Techniques of Presentation 1	6	48	66	120	4
CAD and Sketching 1	6	48	66	120	4
* CAD 1	6	48	66	120	4
* Sketching 1	6	48	66	120	4
Module Design Studio 1	120	120	240	8	
ARLARO 1 - Architectural Design 1	120	120	240	8	

Module Name	Lecture	Practice	Self-study	Study time	ECTS credits
Module Science 2	24	12	84	120	6
Mathematics 2	24	12	84	120	3
Physics 2	24	12	84	120	3
Module Building Technology 2	36	12	84	132	6
Construction 2	36	12	84	132	6
Module Architectural and Cultural Sciences 2	36	12	72	120	6
Introduction to Design Theory	24	12	84	120	3
Man and Environment 1	12	12	84	108	3
* Psychology of the Environment	24	24	84	132	3
* Anthropology and Human Settlements	18	18	84	120	3
Module Methods and Techniques of Presentation 2	6	48	66	120	4
ARLARO 2 - Form and Sketching	6	48	66	120	4
* Form 1	6	48	66	120	4
* Sketching 2	6	48	66	120	4
ARLARO 2 - Color and Light 1	6	48	66	120	4
ARLARO 2 - Architectural Design 2	120	120	240	8	

Bachelor - Arch 2

Module Name	Lecture	Practice	Self-study	Study time	ECTS credits
Module Building Technology 3	24	12	84	120	6
Strength of Structural Materials 1 & 1.5	24	12	84	120	3
Building Materials 2	24	12	84	120	3
Complementary Technical Issues	24	12	84	120	3
* Safety Regulations	6	12	84	102	3
* Topography	6	12	84	102	3
Module Architectural and Cultural Sciences 3	36	12	72	120	6
Cultural History 2	24	12	84	120	3
Man and Environment 2	12	12	84	108	3
* Ecology	24	24	84	132	3
* Gardens and Landscape Architecture	12	6	84	102	3
Module Methods and Techniques of Presentation 3	6	48	66	120	4
CAD and Sketching 2	6	48	66	120	4
* CAD 2	6	48	66	120	4
* Sketching 3	6	48	66	120	4
Module Design Studio 3	120	120	240	8	
ARLARO 3 - Architectural Design 3 of 3.5	120	120	240	8	

Module Name	Lecture	Practice	Self-study	Study time	ECTS credits
Module Building Technology 4	24	12	84	120	6
Structural Analysis	24	12	84	120	3
or Module Building Technology 4a	24	12	84	120	3
Building Physics 1	24	12	84	120	3
Technical Equipment 2 - Electricity	24	12	84	120	3
Technical Equipment 1 - Sanitation	24	12	84	120	3
or Module Building Technology 4b	24	12	84	120	3
Color, Light and Design: Presentation	6	48	66	120	4
* Color and Light 2	6	48	66	120	4
* Design Presentation	6	48	66	120	4
Ergonomics	24	12	84	120	3
Construction Aspects of Furniture 1	24	12	84	120	3
Form 2	6	48	66	120	3
Module Architectural and Cultural Sciences 4	36	12	72	120	6
Cultural History 3	24	12	84	120	3
Project Analysis 1.5 of 1.5	12	24	84	120	3
Module Design Studio 4	120	120	240	8	
Architectural Design 4 of 4.5	120	120	240	8	

Bachelor - Arch 3

Module Name	Lecture	Practice	Self-study	Study time	ECTS credits
Module Building Technology 5	24	12	84	120	6
Construction 4	24	12	84	120	3
Strength of Structural Materials 2	24	12	84	120	3
Building Physics 2	24	12	84	120	3
Module Architectural and Cultural Sciences 5	36	12	72	120	6
Theory of Architecture 1	24	12	84	120	3
Theory of Urban Design 1	24	12	84	120	3
Module Methods and Techniques of Presentation 4	6	48	66	120	4
CAD 3	6	48	66	120	4
Module Design Studio 5	120	120	240	8	
Architectural Design 5	120	120	240	8	
Research Related Capita Selecta	12	24	84	120	3
Project Analysis	12	24	84	120	3

Module Name	Lecture	Practice	Self-study	Study time	ECTS credits
Module Building Technology 6	24	12	84	120	6
Structures 1	24	12	84	120	3
Technical Equipment 3 - Sanitation	24	12	84	120	3
Module Management Sciences 1	36	12	72	120	6
Aspects of Office Management	24	12	84	120	3
* Specifications/Quantity Survey	12	12	84	108	3
* Total Management	12	12	84	108	3
* Scientific English / Reporting	12	12	84	108	3
Law and Legislation	24	12	84	120	3
* General Law / Building Law	24	12	84	120	3
* Town Planning Legislation 1	24	12	84	120	3
Module Optional Courses 1	24	12	84	120	3
Module Design Studio 6	120	120	240	8	
Architectural Design 6	120	120	240	8	
Research Related Capita Selecta	12	24	84	120	3

Master - Arch 1

Module Name	Lecture	Practice	Self-study	Study time	ECTS credits
Module Building Technology 7	24	12	84	120	6
Structures 2	24	12	84	120	3
Building Physics 3	24	12	84	120	3
Building Physics Capita Selecta	24	12	84	120	3
Construction Capita Selecta	24	12	84	120	3
Technical Equipment Capita Selecta	24	12	84	120	3
Module Architectural and Cultural Sciences 6	36	12	72	120	6
Theory of Architecture and Urban Design 2	24	12	84	120	3
Architectural Typology Capita Selecta	24	12	84	120	3
Architectural and Urban Design Capita Selecta	24	12	84	120	3
Man and Society Capita Selecta	24	12	84	120	3
Module Methods and Techniques of Presentation 5	6	48	66	120	4
Methodology of research	6	48	66	120	4
Module Optional Courses 2	24	12	84	120	3
Module Design Studio 7	120	120	240	8	
Architectural Design 7	120	120	240	8	
Research Related Capita Selecta	12	24	84	120	3
Module Antwerp Design Seminars and Lectures	40	40	80	160	3

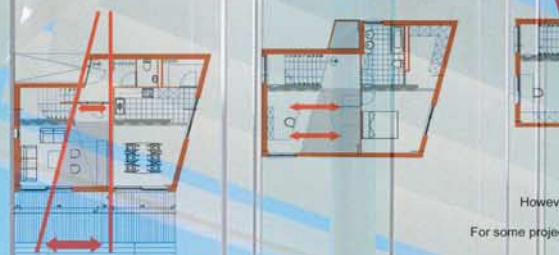
Module Name	Lecture	Practice	Self-study	Study time	ECTS credits
Module Building Technology 8	24	12	84	120	6
Construction 5	24	12	84	120	3
* Construction	24	12	84	120	3
* Project Analysis	24	12	84	120	3
Technical Equipment 4: Heating	24	12	84	120	3
Building Physics Capita Selecta	24	12	84	120	3
Construction Capita Selecta	24	12	84	120	3
Technical Equipment Capita Selecta	24	12	84	120	3
Module Architectural and Cultural Sciences 7	36	12	72	120	6
Architectural Typology Capita Selecta	24	12	84	120	3
Architectural and Urban Design Capita Selecta	24	12	84	120	3
Man and Society Capita Selecta	24	12	84	120	3
Module Building/Urban Water/Space 2	24	12	84	120	3
Law & Economics	24	12	84	120	3
* Building/Urban	24	12	84	120	3
* General Law	12	12	84	108	3
* Building Law	12	12	84	108	3
Module Optional Courses 3	24	12	84	120	3
Module Design Studio 8	120	120	240	8	
Architectural Design 8	120	120	240	8	
Research Related Capita Selecta	12	24	84	120	3
Module Antwerp Design Seminars and Lectures	40	40	80	160	3

Master - Arch 2

Module Name	Lecture	Practice	Self-study	Study time	ECTS credits
Module Building Technology 9	24	12	84	120	6
Structures 3	24	12	84	120	3
Building Physics Capita Selecta	24	12	84	120	3
Construction Capita Selecta	24	12	84	120	3
Technical Equipment Capita Selecta	24	12	84	120	3
Module Architectural and Cultural Sciences 8	36	12	72	120	6
Design Theory 1	24	12	84	120	3
Architectural Typology Capita Selecta	24	12	84	120	3
Architectural and Urban Design Capita Selecta	24	12	84	120	3
Man and Society Capita Selecta	24	12	84	120	3
Module Management Sciences 2	36	12	72	120	6
Aspects of Office Management 2	24	12	84	120	3
* Quantity	12	12	84	108	3
* Environmental Legislation	12	12	84	108	3
* Specifications/Quantity Survey Budget Control	24	12	84	120	3
* Urban Planning Legislation 2	12	12	84	108	3
Module Optional Courses 4	24	12	84	120	3
Module Antwerp Design Seminars and Lectures	40	40	80	160	3

Module Name	Lecture	Practice	Self-study	Study time	ECTS credits
Module Building Technology 10	24	12	84	120	6
Sustainable Architecture	24	12	84	120	3
Building Physics Capita Selecta	24	12	84	120	3
Construction Capita Selecta	24	12	84	120	3
Technical Equipment Capita Selecta	24	12	84	120	3
Module Architectural and Cultural Sciences 9	36	12	72	120	6
Theory of Architecture and Urban Design 3	24	12	84	120	3
Architectural Typology Capita Selecta	24	12	84	120	3
Architectural and Urban Design Capita Selecta	24	12	84	120	3
Man and Society Capita Selecta	24	12	84	120	3
Module Optional Courses 5	24	12	84	120	3
Module Graduation Project	30	30	60	120	30
Graduation Project Option 1 - Research by Design	30	30	60	120	30
Project Design	30	30	60	120	30
Research Related Capita Selecta	14	14	56	84	3
Design Communication	7	7	28	42	3
Technical Equipment Capita Selecta	7	7	28	42	3
Project Design	17	17	68	102	3
Research Related Capita Selecta	14	14	56	84	3
Design Communication	7	7	28	42	3
Graduation Project Option 2 - Architectural Scientific Research	30	30	60	120	30
Thesis	30	30	60	120	30
Research Related Capita Selecta	14	14	56	84	3
Construction	7	7	28	42	3

GENERAL APPROACH on CONSTRUCTION at the Henry van de Velde-Institute part of the Design-Sciences Department of the Hogeschool in Antwerp-Belgium



Teaching construction to young people, is to prepare them to be able to solve rather technical problems as an integrated part of building design.

This educational process deals with 2 approaches:

- lectures to transfer basic knowledge, reaching:
 - the usual, well-known solutions
 - the criteria of quality
 - the spirit to distinguish problems
 - the strategy in solving problems
- design applications
 - construction as a necessary job, being part of making architecture (mostly)
 - construction as a base for design (e.g. structure, sustainability)

The TEACHING OF CONSTRUCTION in ARCHITECTURAL EDUCATION

professor Lucien Denissen, eng.-architect
professor Koen Van de vrekem, architect

Starting the 4th year of the training for architects at the Henry van de Velde-Institute, part of the Design-Sciences Department of the Hogeschool in Antwerp-Belgium, the students have already been entertained with many traditional construction techniques, like bricks. So the subject of their course of "Construction" is: non-traditional facade design systems, as used in utility and industrial projects, but recently more and more transferred to private and public buildings.

We consider next façade types:

- heavy precast concrete
- natural stone
- flat pressed plates
- aluminium flat plates
- sidings
- small plates / slates
- ceramic tiles
- profiled metal plates