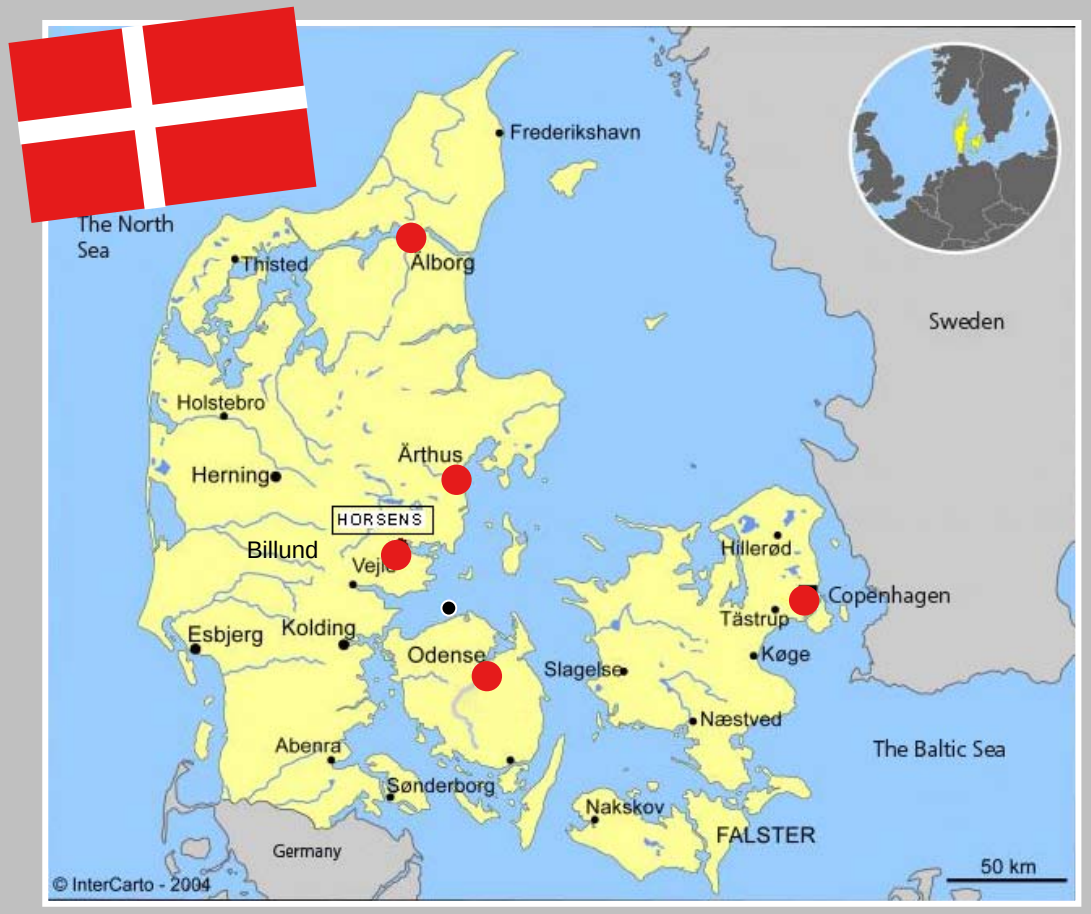
Faculty of Technology & Business

www.viauc.dk

Lecture contents:

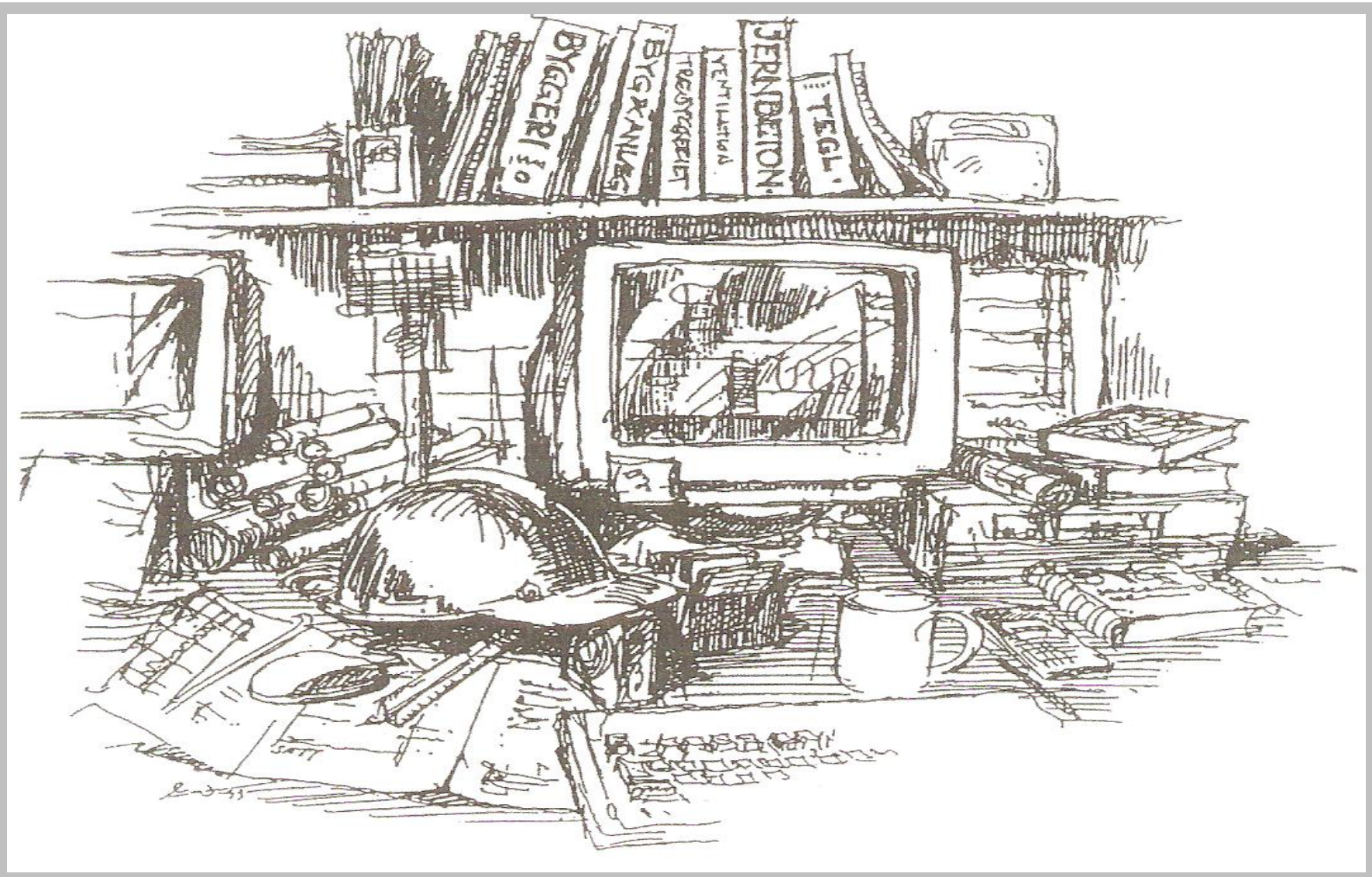
- Denmark
- Entrance criteria & education level
- Danish education system
- Learning environment
- ECTS credits
- Mandatory and elective subjects
- Core subjects
- CA Competences
- Examination & assessment
- CA employment
- International aspects
- Final project examples

Five universities that offer the Constructing Architect degree



- Ålborg
- Aarhus
- Horsens
- Odense
- Copenhagen

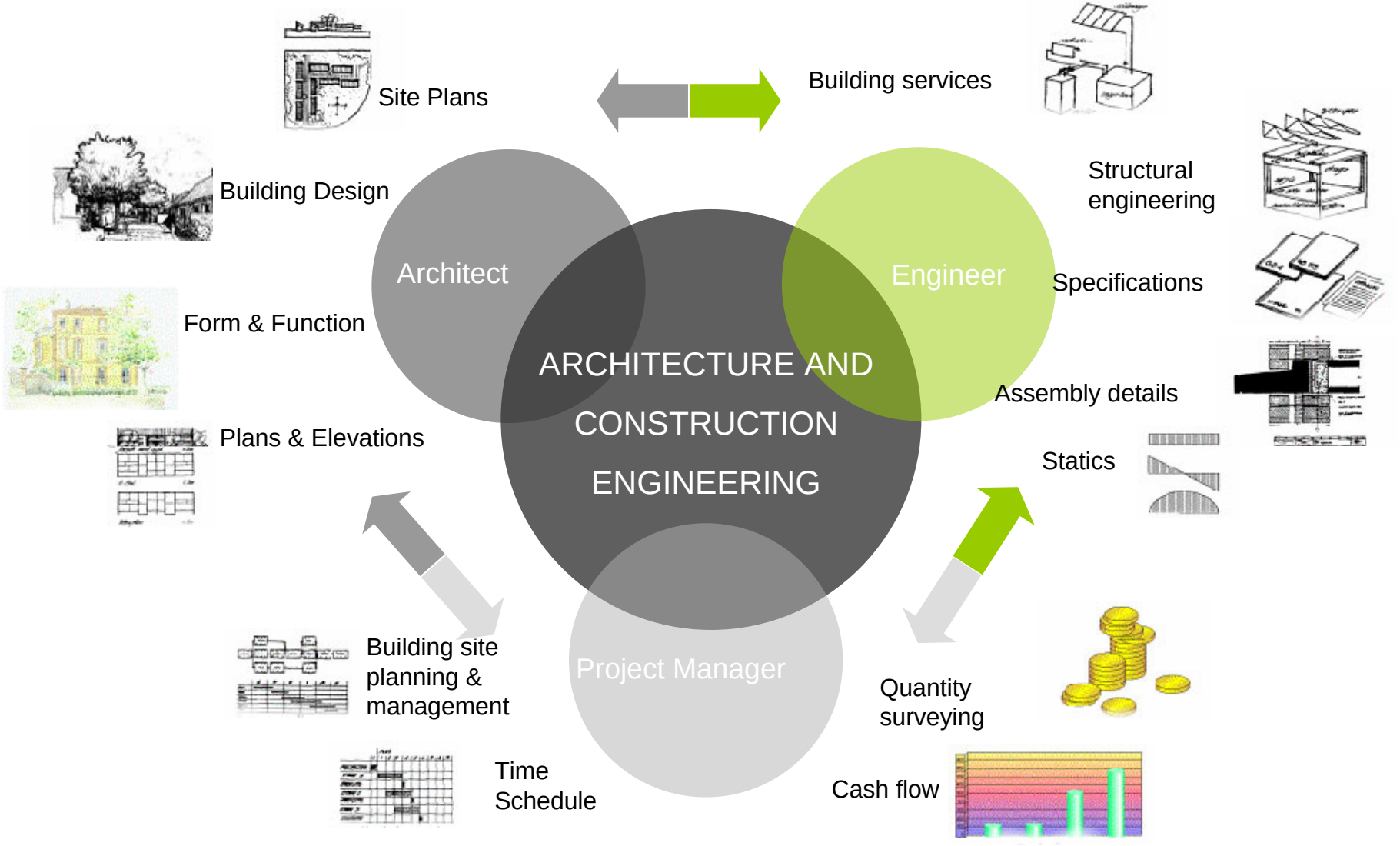
The Danish Constructing Architect Education



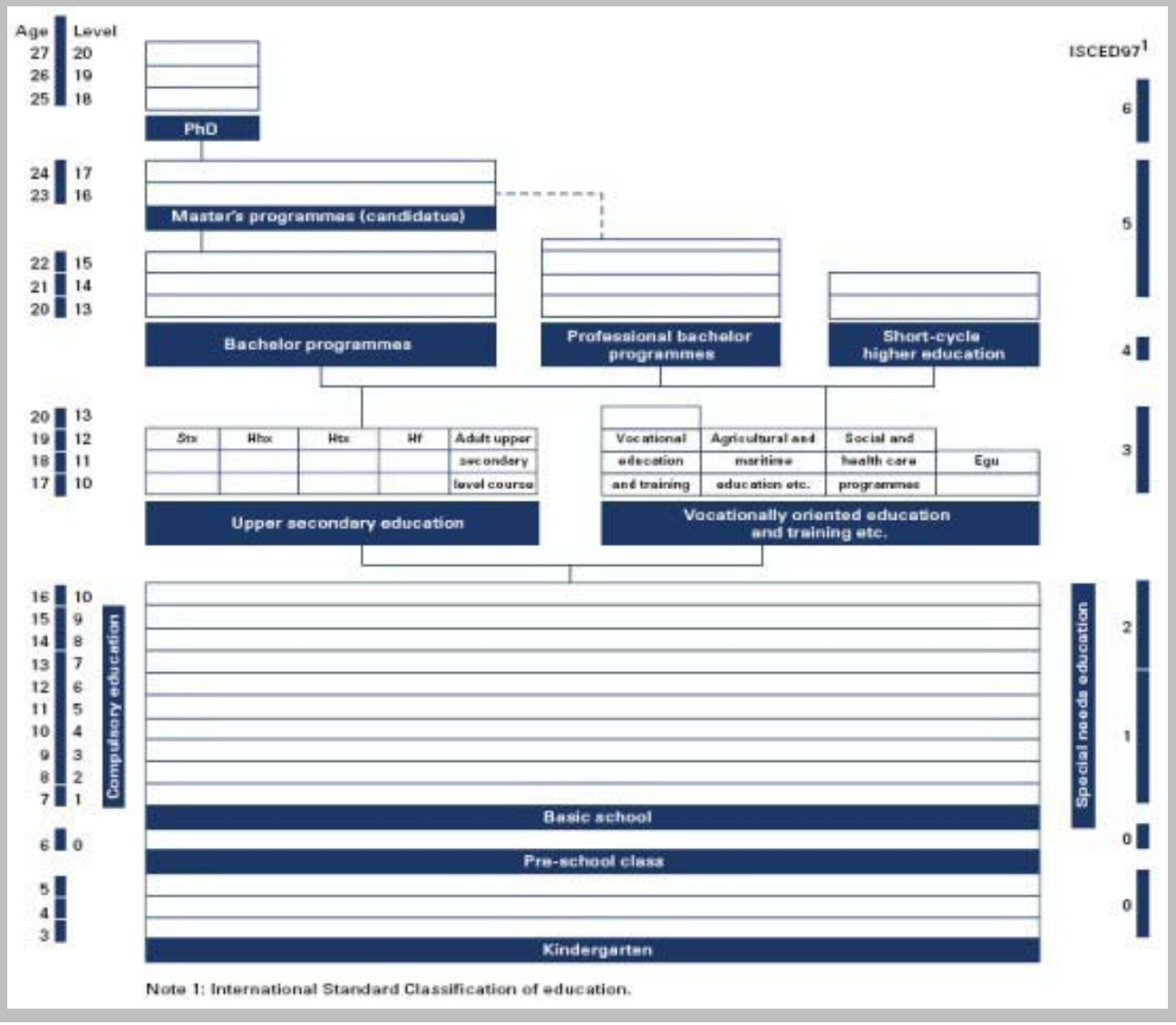
The Danish Constructing Architect

- The Constructing Architect education (Bygningskonstruktør) in Denmark was originally initiated 60 years ago to give a pathway, for building professionals, craftsmen etc, to obtain a higher education in the building and construction sectors.

Field of education



The Danish education system



Entrance requirements

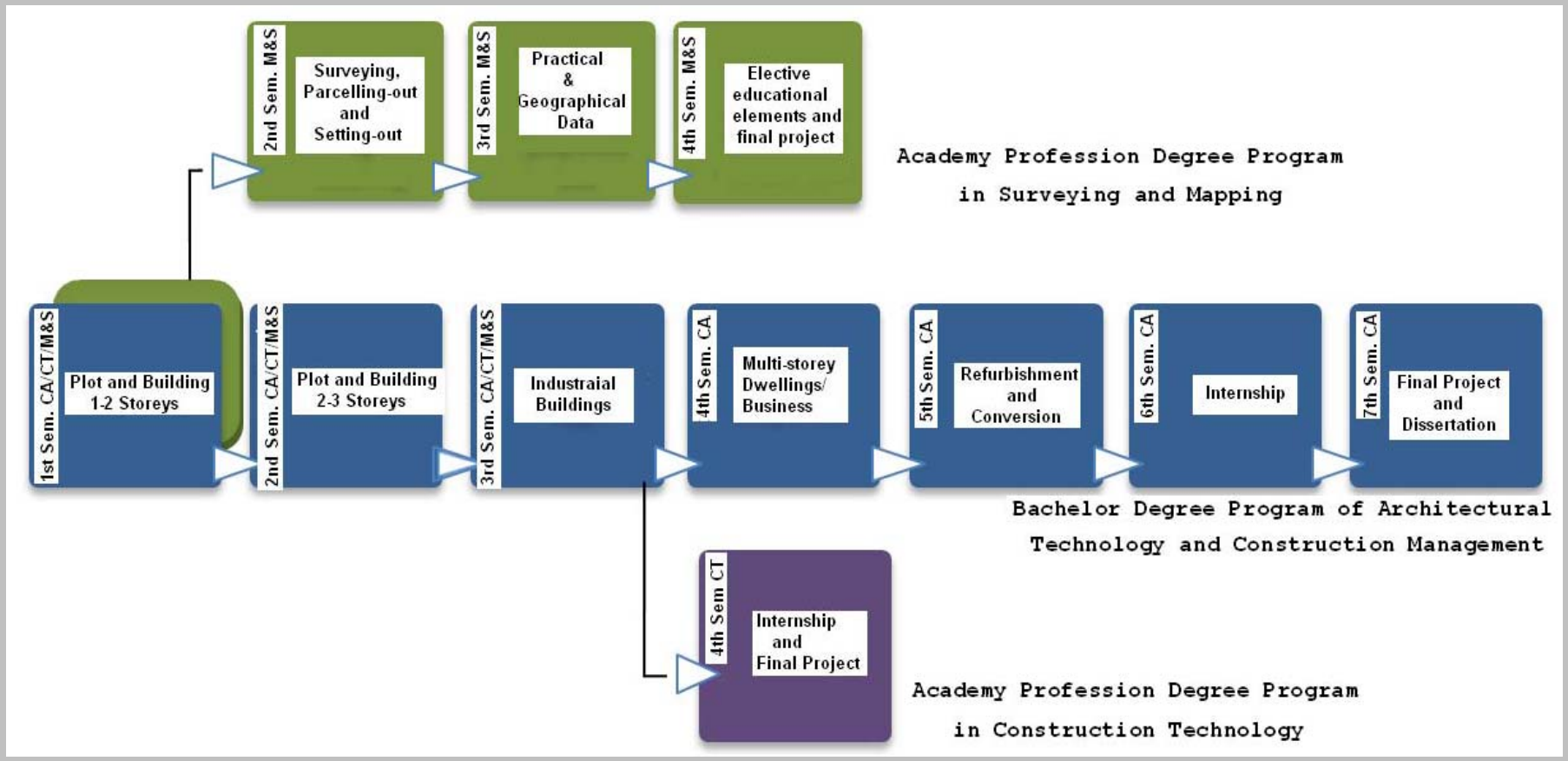
Successful completion of the following apprenticeships/education provides admission:

- 3 year academically orientated high school (HTX, STX. HHX,HF)
- Electrician, joiner, bricklayer,plumber, heating & ventilation, road builder etc.
- Technical designer
- Engineering educations
- Adult experience with in the building & civil engineering sectors
- Quotas: 65% vocational & 35% high school

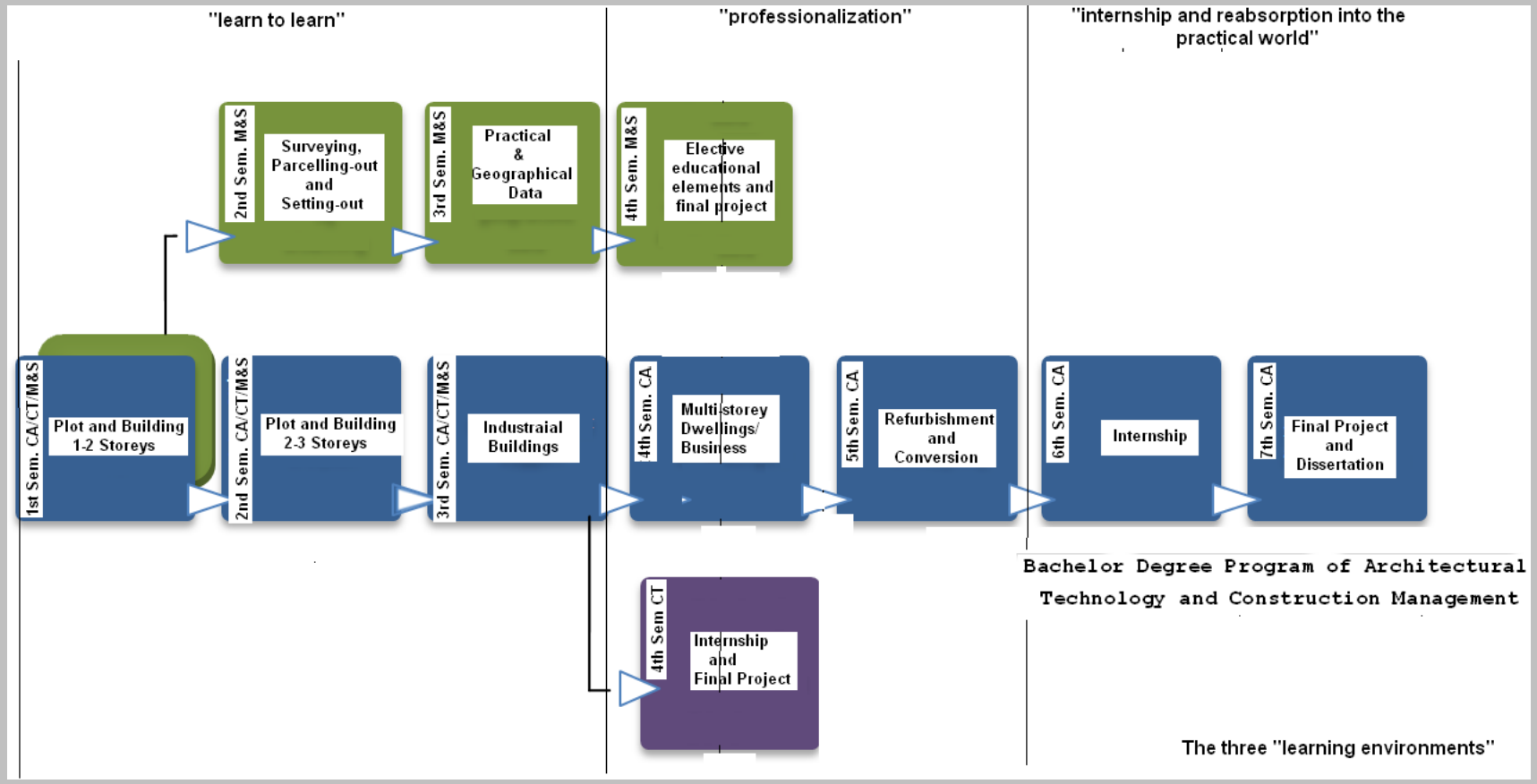
Education Level

- The Constructing Architect education can be compared with a British Bachelor Honours degree in Architectural Technology & Construction Management.
- The constructing architect degree is a 3½ year professional bachelor degree (210 ECTS credits) with 7 semesters

The Constructing Architect education is consists of 2 phases:
A 2 year (4 semester) Academic profession diploma plus
1½ year (3 semester) bachelor degree



Learning environments



Constructing Architect and ECTS

ENTRANCE CRITERIA AND COURSE PLAN

LANGUAGE OF TUITION

ENGLISH or **DANISH**

Bachelor of Architectural Technology and Construction Management — 3½ year, 210 ECTS

High School graduates

Craftsmen or Building professionals

1st semester	2nd semester	3rd semester	4th semester	5th semester	6th semester	7th semester
House and landplot Common basic topics profession and building process 30 ECTS	**House and landplot** Common basic topic Detail Design 1 30 ECTS	**Pre-fabrication** Detail Design 2 production and erection 30 ECTS	**Multi-storey buildings** Design & Design stages 30 ECTS	**Conversion/ renovation** Scheme Design and Detail 1 30 ECTS	**Practical placement** 30 ECTS	**Bachelor project** 20 ECTS **Dissertation** 10 ECTS

Employment or continue studies on a Masters Degree in DK or abroad

4th semester:
- **Practical placement** 15 ECTS
- **Final project** 15 ECTS

AP Degree programme in Construction Technology
Education 2 years, 120 ECTS.

ECTS (European Credit Transfer System)
1 study week is equal to 1,5 ECTS.

European Credit Transfer System (ECTS)

- 1 ECTS credit is equivalent to 27-28 hours student workload
- 30 ECTS credits is equivilent to one semester
- 7 semesters is the equivalent of 210 ECTS credits

Constructing Architect and ECTS

- One week of study is equivalent to approx. 41 hours of student workload.

- 1 semester is equivalent to 20 weeks and 825 hours of student workload (theory project work & examinations)

Mandatory course components

- **General: 30 ECTS**
- communication, work methodology, organization, IT technology, innovation, applied maths & physics
- **Business: 19 ECTS**

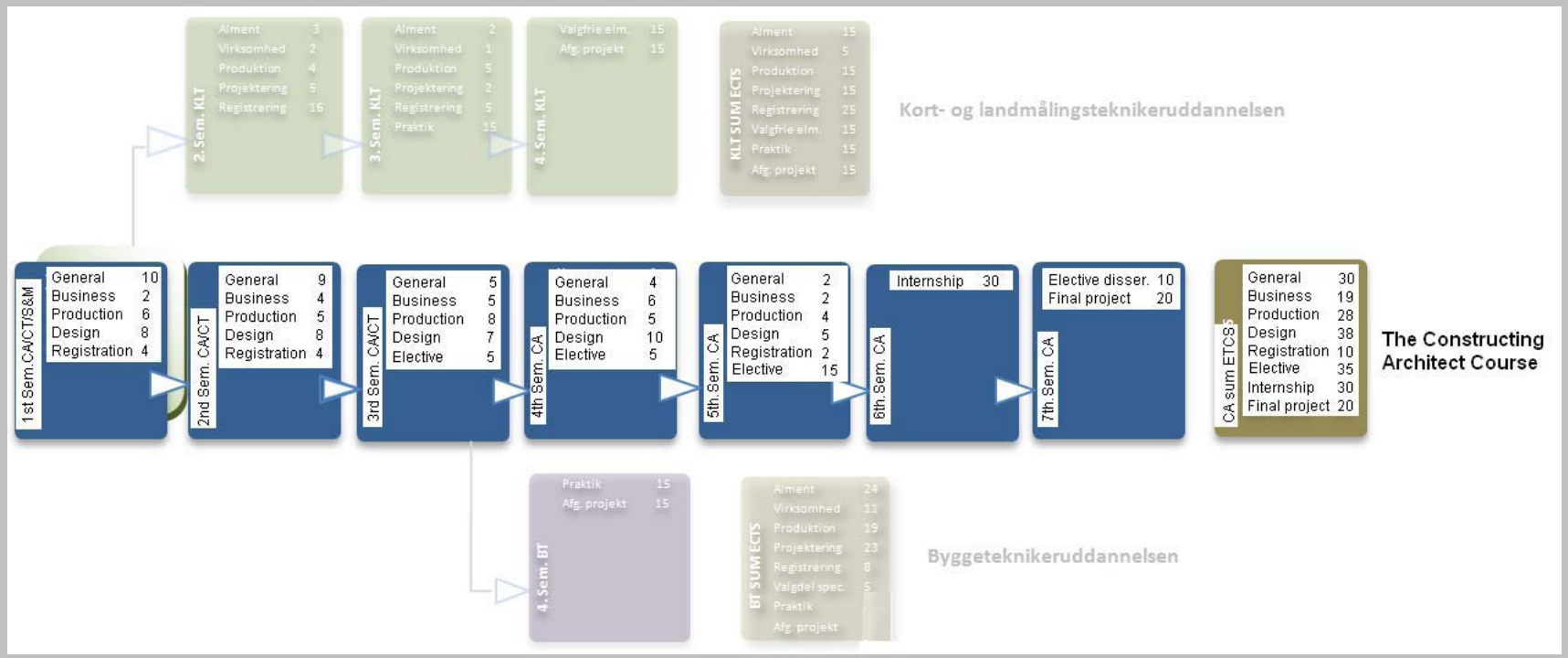
  administration, legislation and jurisprudence
- **Production**: **28 ECTS**

  construction, civil engineering, production & project management
- **Design**: **38 ECTS**

  construction: design & project management
- **Registration: 10 ECTS**

  surveying and setting out of buildings and structures

ECTS break down per semester

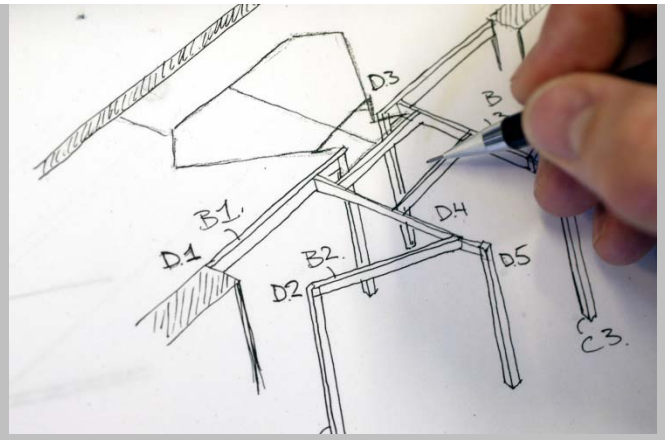


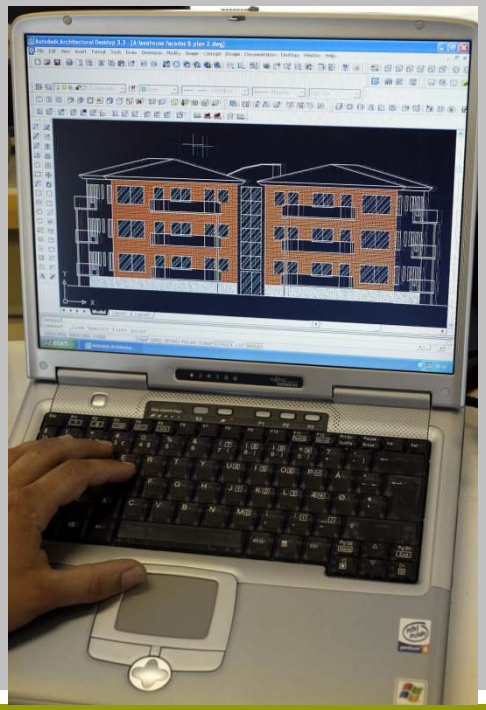
Elective subjects

- From the 5th semester onwards students can focus on one of two main themes:

- Building design or construction management elective subjects amount to 35 ECTS credits:
- 3rd semester 5 ECTS credits
- 4th semester 5 ECTS credits
- 5th semester 15 ECTS credits
- 7th semester 10 ECTS credits

Semesters core subjects





- Architectural design
- Project management
- Construction design
- Contract management
- Civil Engineering
- Sustainability
- Planning & Management
- Building Services
- Environmental building technology
- Facility management

Each semester a specialised topic

ENTRANCE CRITERIA AND COURSE PLAN

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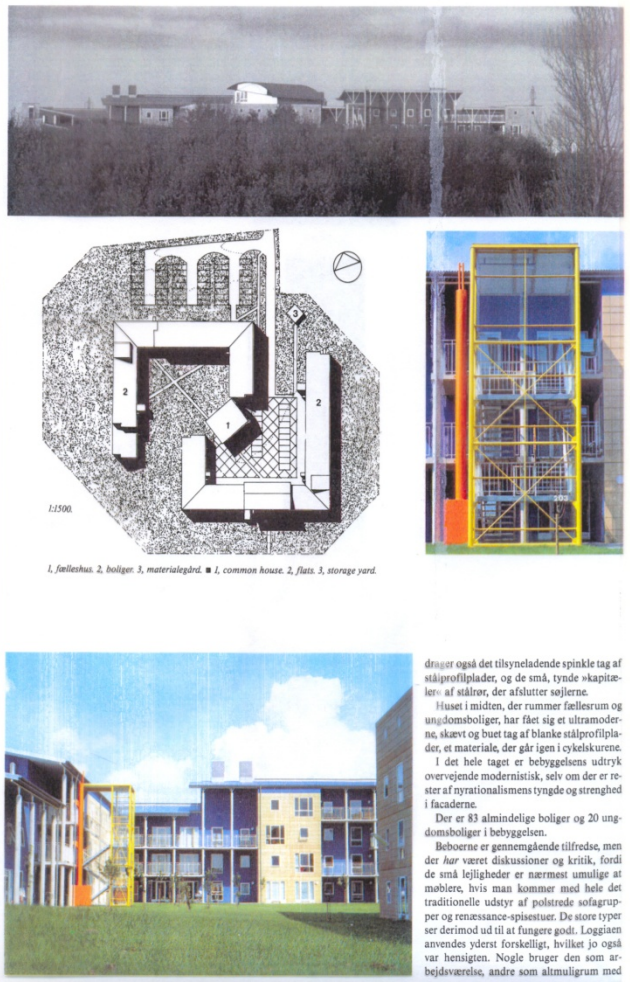
4th semester – Multi-storey house



1:1500.

1, fælleshus. 2, boliger. 3, materialegård. ■ 1, common house. 2, flats. 3, storage yard.

drager også det tilsyneladende spinkle tag af stålprofilplader, og de små, tynde »kapitæler« af stålrør, der afslutter søjlerne.

Huset i midten, der rummer fællesrum og ungdomsboliger, har fået sig et ultramoderne, skævt og buet tag af blanke stålprofilplader, et materiale, der går igen i cykelskurene.

I det hele taget er bebyggelsens udtryk overvejende modernistisk, selv om der er rester af nyrationalismens tyngde og strenghed i facaderne.

Der er 83 almindelige boliger og 20 ungdomsboliger i bebyggelsen.

Beboerne er gennemgående tilfredse, men der *har* været diskussioner og kritik, fordi de små lejligheder er nærmest umulige at møblere, hvis man kommer med hele det traditionelle udstyr af polstrede sofagrupper og renæssance-spisestuer. De store typer ser derimod ud til at fungere godt. Loggiaen anvendes yderst forskelligt, hvilket jo også var hensigten. Nogle bruger den som arbejdsværelse, andre som altmuligrum med

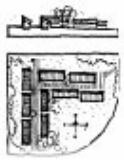
1:300.

Krier inspired scheme with a highly formal plan. The final plan has a distinct separation between the large white buildings and the »urban villas« on the periphery of the scheme. The white buildings and the Business school constitute a unity, and relate to the blocks on the other side of the railway.

The urban villas generate the transition to the large Frederiksberg villas on the other edges of the scheme. The entire plan is controlled by two perpendicular axes that intersect in a small plaza in front of the main entrance to the Business School. Parking is located on the edges of the scheme with the exception of several special handicap places on the courtyards. In principle, the entire complex is free of automobile traffic, including the main central path and the plaza. However it has been difficult to persuade the tenants to abide by these ordinances.

Seen on a broader social level, the scheme represents a step backwards in terms of housing context: The flats are traditional with free standing cabinets that do not necessarily create harmonious spaces. The outdoor spaces are nicely planned but do not encourage social intercourse. The buildings are extremely traditional in type: walk-ups or balcony corridor blocks. One can compare them with other housing schemes in this issue, where great efforts were made to give extra quality to these areas: Stairways, common spaces and housing types. In this sense, Dalgas Have is a striking break with the long tradition in Danish housing, a tradition that places a deciding weight on the functional and social qualities of the housing unit and the surrounding areas, with an architectural expression that is informal and every day in character. Dalgas Have strives at something else: It is a festively dressed and elegant scheme, in which it would be a serious and sudden breach in style to appear in earth shoes and baggy jeans. In this way it is extremely characteristic of the period and in keeping with the spirit of the late eighties.

Course delivery



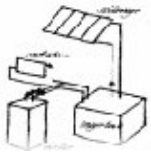
Site Plans

Building Design

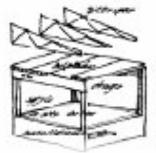
Form & Function

Plans & Elevations

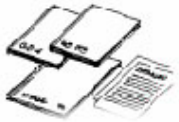
Building services



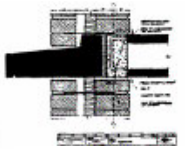
Structural engineering



Specifications



Assembly details



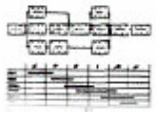
Statics

Architect

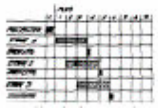
Engineer

ARCHITECTURE AND CONSTRUCTION ENGINEERING

Project Manager



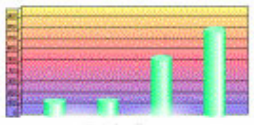
Building site planning & management



Time Schedule

Quantity surveying

Cash flow



Project based learning & teams

PROJECT BASED TEACHING

One semester - 5 months duration (30 ECTS)

Theory lessons
Basic theory in all subjects

Theory lessons
CAD-design

Theory lessons
Building design

Theory lessons
Building planning - management

Theory lessons
Tendering

EVALUATION

PROJECT WORK

EVALUATION

Examination

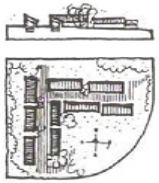
Theory lessons
Structural design
Material analysis

Theory lessons
Planning & management
Cost planning

Theory lessons
Building services

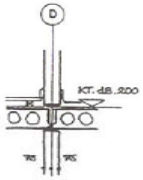
Theory lessons
Building construction

The working process

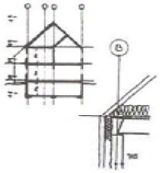


Form & function
Clients demands
Building regulations
and laws
Personal planning

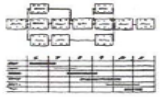
Material analysis
Details
Building components
Cost planning
Quantity surveying



Life cycle
Costing
Heating
and
ventilation
Building design



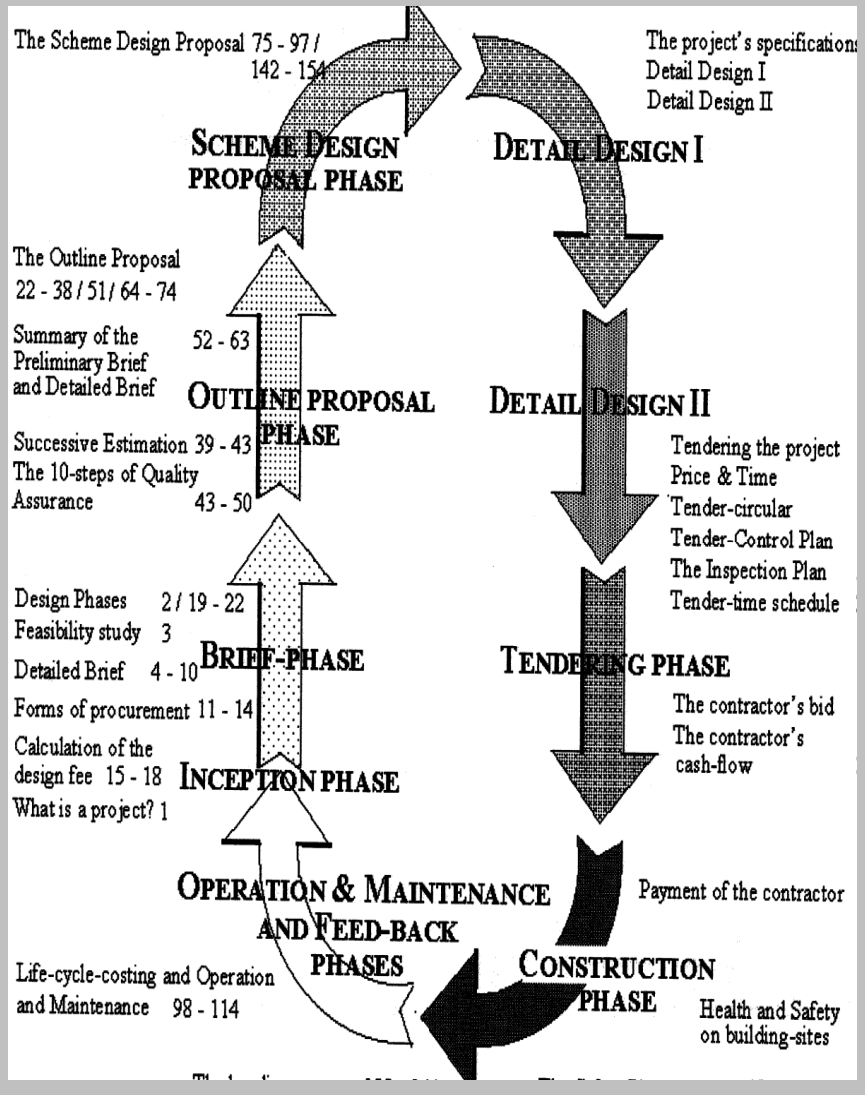
Local authorities
and detail drawings
Sewage and drainage
Room drawings
Building components



Time schedule
Management
Tendering
Working drawings
Specifications

Running and
maintenance

BPM & Project Work



- The building, planning and management phases are used as template for each semesters project work

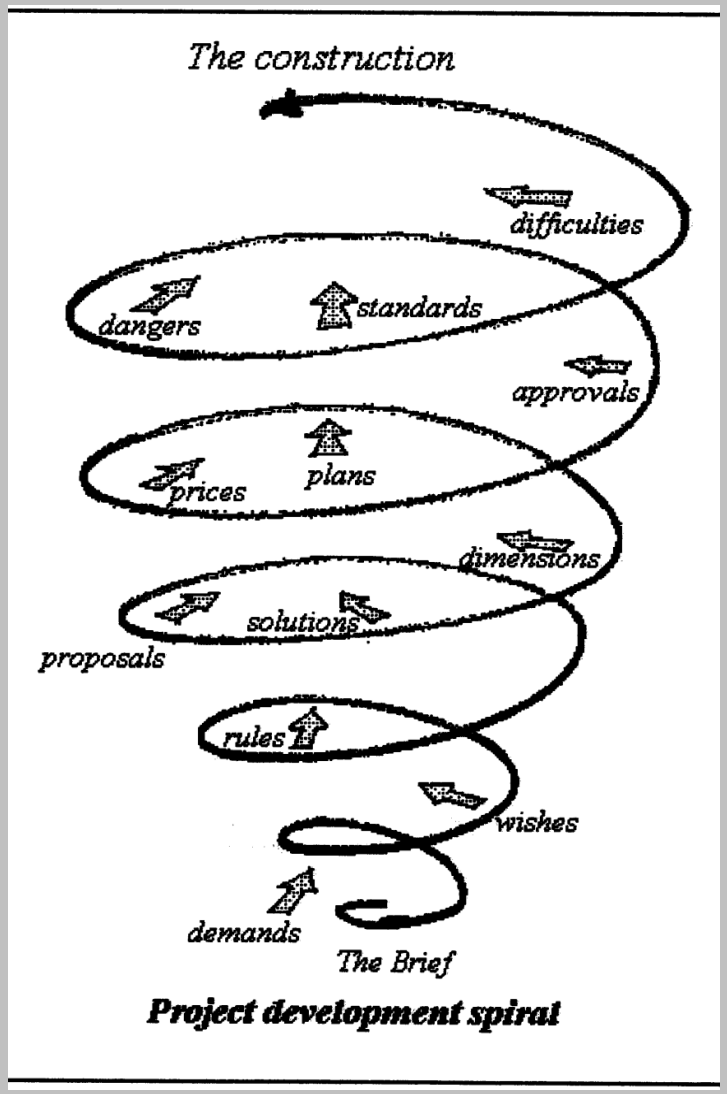
Project based learning

VIA UNIVERSITY COLLEGE DENMARK

The active learning process:

- Critical thinking
- Problem solving
- Teamwork
- Negotiation skills
- Reaching consensus
- Taking responsibility for own learning
- Social participation

Learning and problem solving



Project development spiral

- Student teams learn to cope with the spiraling problems that must be solved in semester long multi-disciplinary project.

Constructing Architect graduates competences

- Manage,design, plan and execute complex construction & Civil engineering tasks independently and in collaboration with other professionals.
- Manage administrative tasks and project management.
- Manage social and technological aspects in the design and implementation of construction projects
- Evaluate, combine and integrate research knowledge in solving complex technical construction issues.

Examination & assessment

- In all semesters, team and individually project work is assessed orally by lectures & professionals
- Digital presentation is now compulsory

Danish Grading System

7-point grading scale

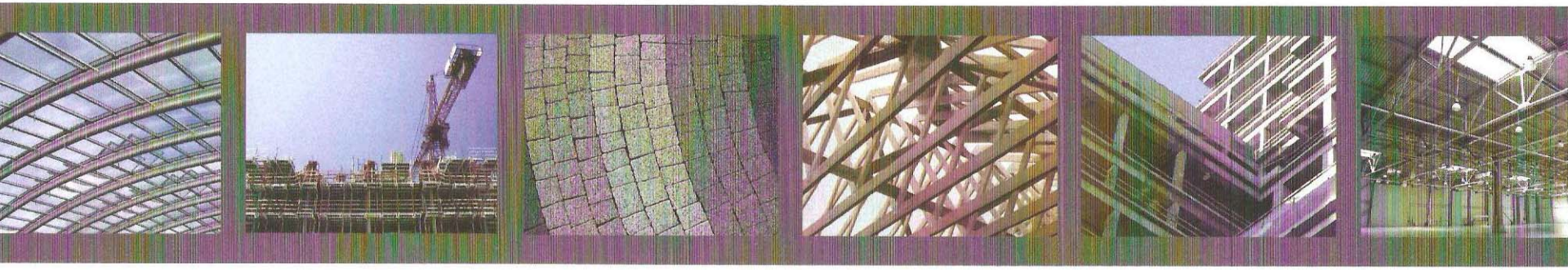
Grade	Description	ECTS	Old scale (00-13)
12	For an excellent performance displaying a high level of command of all aspects of the relevant material, with no or only a few minor weaknesses.	A	13 11
10	For a very good performance displaying a high level of command of most aspects of the relevant material, with only minor weaknesses.	B	10
7	For a good performance displaying good command of the relevant material but also some weaknesses.	C	9 8
4	For a fair performance displaying some command of the relevant material but also some major weaknesses.	D	7
02	For a performance meeting only the minimum requirements for acceptance.	E	6
00	For a performance which does not meet the minimum requirements for acceptance.	Fx	5 03
-3	For a performance which is unacceptable in all respects.	F	00

IELD OF EMPLOYMENT

ou are able to undertake many different functions
nd fulfil widely varying roles in the building and construction sector.

VIA

UNIVERSITY COLLEGE DE



Self employed
Consultant
Building companies
Estate agents

Banks and insurance companies
Banking
Housing societies
Insurance

Public authorities
Local authorities
County council
Government departments
Civil defence

BACHELOR OF ARCHITECTURAL TECHNOLOGY AND CONSTRUCTION MANAGEMENT

Contracting firms
Timber construction
Steel construction
Bricklaying and masonry
Concrete and earthworks
Drainage and sewage

Building suppliers
Joinery and timber
Steel building components and fittings
Prefabricated concrete components
Sales representative

International organizations
Danida
Norad
Sida
Emergency relief work
British council
UNESCO

Miscellaneous
Housing co-operatives
Professional organizations
Education

Consultant/adviser companies
Architect
Landscape architect
Structural engineer
Service engineer
Management and planning

AN INTERNATIONAL EDUCATION
Within the building and civil engineering sectors

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Architecture and Construction Management

- Project management
- Construction design
- Contract management
- Civil engineering
- Planning and management
- Conversion and renovation
- Architect design and technology
- Facility management
- Environmental technology

Denmark

- Denmark may be a small country (5 mill. people) but it has a big international reputation - not least in the quality of its educational policies and practice.
- The Danish government actively supports international links by welcoming students from all over the World. www.denmark.dk

Student exchange

- You have the possibility to study abroad for 3-9 months as exchange student i.e. in Europe, Australia, New Zealand, China.
- VIA has a very active study environment. You will meet exchange students from many countries.
- Study exchange to European institutions can be financially supported.

Entry requirements

- Certified craftsman with national craft certificate, City and Guilds or equivalent.
- Or documented work experience from the building or civil engineering sectors.
- A-level standard
- Students from Europe have the same status as Danish nationals, and are entitled to free education while studying in Denmark.
- The education is recognized by the Danish Ministry of Education. In most cases financial support/ study grants can be transferred while studying in Denmark.

International environment

- VIA hosts students from Scandinavia, France, Spain, England, Poland, USA, Australia and many more countries.
- You will meet many cultures and co-operate with students from many walks of life and different backgrounds.

International Relations

Students Origin

INTERNATIONAL EXCHANGES AT VIA SCHOOL OF TECHNOLOGY

VIA UNIVERSITY COLLEGE DENMARK

LANGUAGE OF TUITION

ENGLISH or DANISH

Bachelor of Architectural Technology and Construction Management — **3½ year, 210 ECTS**

WHILE STUDYING AT VIA YOU HAVE THE POSSIBILITY TO ATTEND EXCHANGE PROGRAMMES ABROAD IN 3., 4., 5., 6. AND 7. SEMESTERS

EXCHANGE POSSIBILITIES

High School graduates

Craftsmen or Building professionals

1st semester	2nd semester	3rd semester	4th semester	5th semester	6th semester	7th semester
House and landplot Common basic topics profession and building process 30 ECTS	**House and landplot** Common basic topic Detail Design 1 30 ECTS	**Pre-fabrication** Detail Design 2 production and erection 30 ECTS	**Multi-storey buildings** Design & Design stages 30 ECTS	**Conversion/ renovation** Scheme Design and Detail 1 30 ECTS	**Practical placement** 30 ECTS	**Bachelor project** 20 ECTS **Dissertation** 10 ECTS

Out / In

Employment or continue studies on a Masters Degree in DK or abroad

4th semester: **Practical placement** 15 ECTS; **Final project** 15 ECTS

From the 5th semester onwards you can focus your studies on one of the two main themes: Building design or construction management.

While studying at VIA or abroad you will have the pleasure of studying, working together and socializing with students from many different countries for example:

USA, NEW ZEALAND, SPAIN, AUSTRALIA, UK, HUNGARY, IRELAND, NORWAY, FRANCE, FINLAND, POLAND, SWEDEN, ICELAND, UGANDA, KENYA, LITHUANIA, RUSSIA, GHANA, CHINA, LATVIA, ITALY, GERMANY, AUSTRIA, AND MANY MORE

VIA UNIVERSITY COLLEGE DENMARK

More than 100 international co-operative partners

Australia	6 Universities
Austria	2 Universities
Bulgaria	2 Universities
China	3 Universities
Czech Republic	2 Universities
England	4 Universities
Estonia	2 Universities
Finland	5 Polytechnics
France	12 Universities
Germany	6 Colleges
Greece	2 Colleges
Holland	4 Universities
Hungary	3 Universities
Iceland	1 University
Italy	5 Universities
Latvia	1 University
Lithuania	3 Universities
New Zealand	4 Universities
Norway	9 Colleges
Poland	8 Universities
Portugal	1 University
Romania	3 Universities
Russia	3 Universities
Singapore	1 Polytechnic
Spain	13 Universities
Sweden	3 Universities

VIA UNIVERSITY COLLEGE DENMARK

Make international

Networks for life