

What and Why

A supplementary mode of working for basic courses in building construction. Practical skills have been practised in specific "wood studios" in all three departments of architecture in Finland.

Each wood studio has a specific theme to work with:

- Oulu: Modern wooden townships and housing
- Tampere: Public buildings and large scale structures
- Helsinki: Wood in architecture and architecture in wood

The original objective in establishing the studios was to raise the share and level of education in wood building and construction design. Despite the long tradition in timber building in Finland at the beginning of the 90s, the level of education in the field was low. Another important objective has been to encourage the students to design in wood through interesting, new and innovative exercises.

Compulsory courses

Architectural Construction, Basic Course

Overview of the construction project. Taking climate and environmental factors into account when designing buildings. General information on sources of information, legislation and building techniques. Wood as a material and wood construction.

Architectural Construction, Professional Course

Focus on construction methods, construction systems and use of material in studying. Construction materials other than wood. Basics of structure design. Documentation.

Building Technology

Basics of building structures and structural models. Frames of buildings and functions of parts. Basics of structural design of bearing structures. Tasks of the structure designer.

How

As general information on all building materials and constructions is given in every basic and professional course, wood studios provide a good opportunity to gain extra knowledge of wooden architecture. Various activities take place in the studios.

1. Architectural competitions for students on town planning of housing areas, design of model houses, public buildings etc. New housing areas in Haapaniemi and Karisto are typical examples of the results of such competitions, sponsored by local authorities and carried out in practice. All three schools participated in the competitions, and students were tutored by teachers in order to get feasible results.

2. Master thesis in different applications of wood in construction. Topics include bridges, different kind of wooden halls, multi-storey blocks, housing areas etc.
3. Theme courses on timber building. Intensive 2-week courses covering the whole field of study (timber building), from structures to completion, from building tradition to modern architecture.
4. Hand-made practical projects. The students have not only designed but also made, in part or whole, several small-scale buildings. Topics of the projects so far have been summer sauna, café, info building and observation tower. One of the projects is to build a new, modern church of Kärsämäki using the methods of the 18th century craftsmen. A number of student courses have been held in situ, although it is professionals who, ultimately carry out the construction work.

Some research activities have also been linked with the wood studios.

Architectural Construction, Basic Course

The course comprises lectures, examinations and practice assignments. The subject of the practical assignment, a small wooden summer cabin was selected because

- 1) wood is a familiar material to all
- 2) the space problem is small (two interior spaces one outdoor space)
- 3) there are many types of structure in a small programme: an all-purpose room, a sauna and outdoor terrace
- 4) tectonics can be practised on a small scale: awning, jetty and tower structures

The practical assignment progresses through information sessions and weekly tasks supervised by academic assistants in which the structures are taken one at a time (fire regulations, foundations, walls etc.). The end result submitted by the students is

- official documents (site plan, plan, sections, facades)
- drawings of structures (flues, structural axonometry, detail of wall joint)

1/20 scale model

The model has been found to be a particularly useful tool for learning three-dimensionality.

Architectural Construction, Professional Course

The course comprises lectures, examinations and practice assignments, of which one entails work drawings for a residential block and the other a seminar presentation. The practice assignment progresses by weekly information sessions. As an end result students submit 1/50 scale drawings (ground plans, sections) and details of joints and facades on a scale 1/10 and 1/20. Planning of joint design is supervised through advance seminars at which details made by the students are gone through with the teacher. For the seminar presentation students prepare and present a 30 minute presentation on a given subject such as ecology, materials, long spans. Presentations are commented jointly, revised and included in publications.

Building Technology

The course comprises lectures, examinations and practice assignments, mostly lectures with some few calculating tasks. As a small assignment students build a structural model and use this to demonstrate some basic phenomenon of statics to peers. Models from earlier years are used for illustrative purposes.

Who

The wood studios are supported by Finnish wood working industries. However, within a given theme, the schools may freely plan their own activities and decide how to carry out the work.

The competence of both the professor and the academic assistant in the subject are the result of experience and practical work. Traditionally academic assistance combines teaching and work as an architect. All teachers in Building Construction are qualified architects, except for the teaching of Building Services, who is a HVAC engineer and the teacher of Building Technology, who is a civil engineer. The academic assistant in Building Construction is also involved in the teaching of the Building Technology course to ensure the input of an architect in addition to the technical perspective.

Special courses like the annual Materials Course have been lectured by top experts in the field.

When and to What Extent

Wood studios are optional postgraduate studies which may be included in a degree.

The credits for compulsory courses are as follows:

Basic Course 8 Finnish credits (cu)

Professional Course 8 cu

Building Technology 3 cu

Total of 19 compulsory credits

The degree programme in architecture comprises 160 ov from courses and 20 ov from the Master's thesis, thus the share of compulsory courses in Building Construction of all courses is just below 1/8. Studies are scheduled to last 5 years, in practice easily exceeding 7 years.

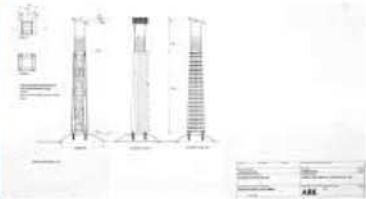
Very little attention is paid to mathematical models in teaching structures. The aim of teaching is rather to provide basic knowledge of the functions of structures enabling the architect to lead a design group.

For those students especially interested there is an opportunity for postgraduate study in special courses and, for example Wood Structures.

The aim of teaching is to provide basic skills in

- management of implementation of building
- operative management of structures
- materials management
- co-operation with other designers

Virtual Reforms



*Peikka Saarfo: Cabin (Basic Course)
Riikka Pyydinen: Bird Tower (Basic Course)*

WHAT AND WHY?

Compulsory courses

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Building Technology

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Optional courses

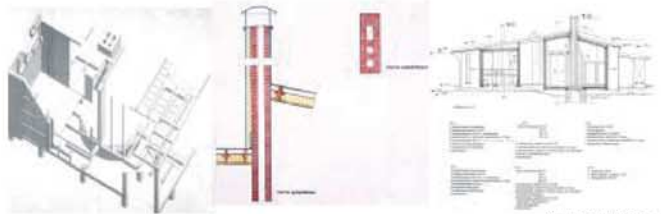
Special Courses

Special courses on various materials on various subjects. Wood Studios. Special course in Renovation and Complementary Building Design. Construction Management Course

Building Services

Knowledge of technical construction systems needed for architectural design (HVAC)

The degree programme also includes compulsory practical training on a building site and in a design office.



*Merttu Jylki: Cabin (Basic Course)
Kaisu Mänti: Cabin (Basic Course)
Riikka Pyydinen: Cabin (Basic Course)*



Jenni Puttonen: Cabin (Basic Course)

HOW?

Architectural Construction, Basic Course

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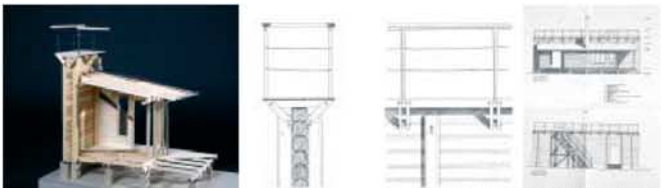
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Architectural Construction, Professional Course

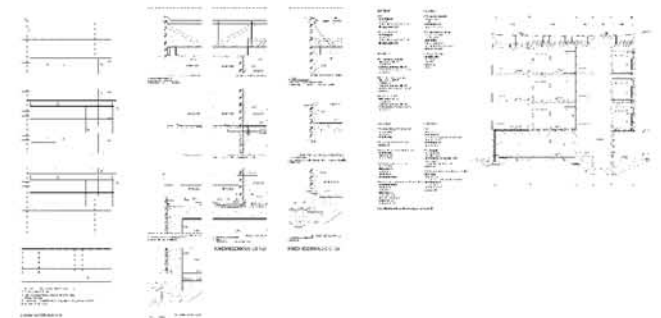
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Jenni Laakkonen: Cabin for Bird Observator (Basic Course)



Aino Hiltunen: Multikero Building (Professional Course)

WHO?

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Sahri Falato, Jenni Laakkonen (Building Technology)



*Kalle Rindfors, Zina Silakonen (Building Technology)
Kaisa Aho, Meru Humpu (Building Technology)*

VIRTUAL REFORMS

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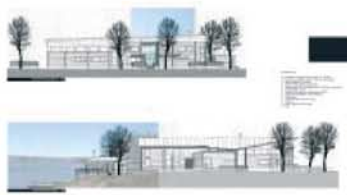
FINLAND

“WOOD STUDIOS”

Dept. of Architecture, Helsinki University of Technology

Dept. of Architecture, Oulu University

Dept. of Architecture, Tampere University of Technology



Oulu University, Department of Architecture
Sara Rydholm Alstair Thesis
Pöytä, Observato of Geophysics, Oulu University

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HOW ?

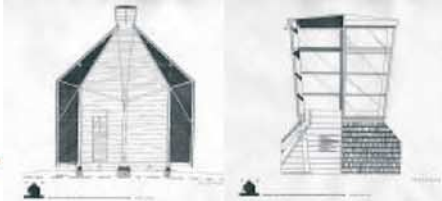
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Oulu University, Department of Architecture
Anssi Lassila Master Thesis
Kilvinkö Church



Oulu University, Department of Architecture
Riku Puhoski Competition Entry
Housing Project, Log Houses, Pyhäskallio Common



Helsinki University of Technology Department of Architecture
Juukka Kappas Wood Studio 2004
Wooden Sauna Project



Helsinki University of Technology Department of Architecture
Nello Sirok Wood Studio 2004
Cafe in Helsinki



Tampere University of Technology Department of Architecture
Jari Lantinen 3rd Prize ACSA Wood Products Council
Int. Student Competition, A Meteorological Center and Field Station



Tampere University of Technology Department of Architecture
Katriina Huusari Master Thesis
Village by Old Harbour, Kokkola Common



Tampere University of Technology Department of Architecture
Jari Lantinen 3rd Prize ACSA Wood Products Council
Int. Student Competition, A Meteorological Center and Field Station



Tampere University of Technology Department of Architecture
Anniina Agge Master Thesis
Wooden Bridge, Laita

WHEN AND WHAT EXTEND ?

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