EAAE
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Association européenne pour l'enseignement de l'architecture
AEEA

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SPECIAL ISSUE

WORKSHOP 13 : LEARNING & TEACHING : TRONDHEIM : 29-31 MAY 86

BIRGIT COLD, ORGANISER OF WORKSHOP 13 INTRODUCES THE TOPICS TO BE DISCUSSED AND THE PRINCIPAL CONTRIBUTORS:

The architectural profession, and therefore also architectural education, requires that many aspects of the architect's character is developed and matured. This maturing process has to be combined with the acquisition of abilities and the knowledge necessary to practice the profession.

The school system from which the students come does not emphasize the development of aesthetic abilities: the cultivation of the senses or the development of creative abilities and the perception of the social or physical environments. Co-operation and communication has by now gained some ground in the school system, but mainly in the primary school.

Apart from conveying knowledge, architectural teachers also have a special responsibility to develop and mature these aspects and to establish a learning process that will be beneficial to both students and teachers.

Learning is dependent on several factors:
- the students' abilities and previously acquired knowledge
- the teachers' abilities and knowledge
- the pedagogic situation – i.e. the teaching methods used, the teachers' motivation and their ability to convey and inspire
- the content of the education, its progression
- the social and professional interaction between students and teachers
- the physical situation – i.e. space, facilities and equipment

But perhaps the most important factor for both students and teachers is MOTIVATION or love for the profession.

Other factors also influence the educational environment. These are more dependent on society:
- the environment in which the school is placed
- the proximity to a larger professional community
- the school's autonomy
- contact with professional practice
- the availability of human and material resources etc.

At this workshop we will primarily discuss the various aspects of teaching and learning, and particularly those aspects which teachers can influence or are responsible for.

A pre-condition for a high quality architectural education is a learning situation that is based on the students' needs and abilities and on pedagogic methods and models.

Although we all teach, almost none of us are actually trained for teaching. Our experience as teachers, and the methods obtained in our professions as architects, therefore is the only background we have when choosing our teaching methods.

An experience gained by teaching may be rather accidental if we do not get feedback from students and colleagues. There are few architectural schools that have established routines for evaluation of the pedagogical aspects of teaching.

Several universities have realized that the pedagogical background of most of their teachers is rather meagre, and courses that develop personal abilities and methods that will improve the teaching have been set up.

Experiences from such courses, their methods, contents and duration should be discussed at the workshop.

A few architects teaching at Architectural Schools are trained as educationists as well.

At this workshop we have two of them as lecturers and as leaders of the seminars:
- AASE ERIKSEN practicing in USA and Denmark, will introduce two themes: THE RELATIONSHIP BETWEEN FORM AND CONTENT and BUILT ENVIRONMENT EDUCATION AND LEARNING BY DOING.
- INGE METTE KIRKEBY who has experience of practice and teaching in Denmark, Great Britain and Holland will introduce: PROJECT WORK – AIMS, ORGANIZATION AND EVALUATION.
- A third theme which we consider very important, THE MALE AND FEMALE APPROACHES TO THE DESIGN PROCESS, will be introduced by a Danish teacher and architect from the Aarhus School of Architecture, KIRSTEN BIRCH.
- The three other lectures and leaders of discussions teach at the Department of Architecture at the Norwegian Institute of Technology:
- JAN BROCHMANN, philologist and art historian will introduce the theme: THE ARTISTIC APPROACH TO LEARNING WITH REFERENCE TO THE BAUHAUS SCHOOL.
- HARALD HØYEM, a Norwegian architect, will introduce the theme: INNOVATION, CREATIVITY IN TEACHING AND LIFELONG LEARNING (OR THE SURVIVAL OF TEACHERS!)
- ROBERT ESDAILE, a Canadian, English and French speaking architect will offer some: REFLECTIONS ON THE TEACHING OF ARCHITECTURE, focussing on a holistic approach to the teaching of architecture and on creativity, the students' expectations and our ability to fulfil these.

Theme 1: The Relationship between Form and Content

Learning architecture involves many things since architecture is a uniquely eclectic discipline. And since the work which an architect should be trained to do, also involves people directly, it adds special dimensions to the subject matter.

The teaching of architecture should focus on what the student should acquire from his/her education. For focus must therefore be on learning and that includes both content and method. We must ask – how students best can acquire the content and skills the architecture schools and society deems important. That question relates to the whole length of the study as well as to each individual course and studio and to each session.

Piaget, in describing the principal goal of education, has, to my mind, described what learning is:
"The principal goal of education is to create men who are capable of doing new things, not simply of repeating what other generations have done – men who are creative, inventive, and discoverers. The second goal of education is to form minds which can be critical, can verify, and not accept everything they are offered. The great danger today is of slogans, collective opinions, ready-made trends of thoughts. We have to be able to resist individually, to criticize, to distinguish between what is proven and what is not."

There are educational theories and methods which should be used to develop the best learning situations for students. The common tendency by many teachers to do just as they do in the office is not the answer. One reason being that the architect's office is not a formal teaching/learning situation. The informal learning and training that a member of an office staff gets is accidental directly relating to the kinds of projects that the office has and the work the staff member gets to do. What working in an office can offer is one part of the many planned learning experiences a student should go through. Learning by doing is an important learning theory which certainly applies to architectural education. The kind of doing, however, should relate directly to the kind of content or skills the students should learn.

One might dare to generalize and state that an architectural education must include learning about process as well as content and skills. It must include learning how to learn, how to acquire information, how to communicate the discipline to the users, how to work with others and what can be useful knowledge from other disciplines.

We, as teachers, must establish learning objectives and then decide which one of the many methods that are available would be most appropriate to our goal. Teachers of higher education should be as concerned about learning/teaching methods as teachers of young children are. Since it should be the goal of every architecture school to turn out the very best products, we cannot leave the whole responsibility for learning on the students' shoulders.

Learning theories and specific methods which can be used in architecture education includes, for example, spiral curriculum and learning by doing concepts, and methods such as case study, representation, simulation and user involvement. It also includes methods of communicating clearly the steps in the planning and design process. Post occupancy evaluation is a method the practicing architect should use and one which would lend itself directly to a teamwork between teachers and students from the architecture schools and the practicing architect outside the school. These theories and methods will be discussed and illustrated during Workshop 13 in Trondheim.

Aase Eriksen, USA and Denmark

Theme 2: Built Environment Education, and Learning by Doing

Another theme to be discussed is built environment education, which ties directly into some of the methods discussed above. It also has particular relevance to the first semester curriculum and teaching/learning methods in schools of architecture.

Teachers often express special concern about how one can start architectural studies with students who don't know anything about architecture. The interesting point is that these new students are like the architects' future clients, the users of the built environment. The students, like the general public, lack education about the built environment.

The built environment is architecture in its broadest sense: buildings, streets, houses, parks, playgrounds, open spaces, transportation, service systems, and much more. It also involves the relationship between the natural and the built environment.

The general goals of a built environment education program should, therefore, be to develop the following attitudes: 1. a sensory awareness of environment; 2. a recognition of opportunities existing in the environment; and 3. the realization of our own potential for influencing the environment.

The first goal is related to the fact that most people move through their environment without seeing and without knowing what to look for. We all need to be trained to be aware of what is around us, to see the many aspects of our physical surroundings: colours, textures, noises, objects, and spaces and their qualities and inter-relationships. By paying attention to our senses, to the relationships of built things to each other and to ourselves, we become aware of the environment's influence on our actions and emotions, and we become aware of whether the environment is serving or hindering our needs.

The second goal is a recognition of the opportunities afforded by the built environment. People who are educated to make use of the wealth of the opportunities around them will support them and encourage their upkeep and expansion. People familiar with institutions and systems such as mass transit, recreational activities, and museums, will be more likely to express their concern by active involvement that will, in turn, influence the organization of these facilities.

The achievement of the first two goals of a built environment educational program will necessarily lead to the achievement of the third; that is, people who have learned to be aware of their environment and to make use of it, will ultimately recognize their own potential for influencing it.

This is to the architect's advantage because an environmentally aware public demand better physical surroundings and will be an informed client.

I have developed such a program for children called "Architects-in-Schools". Many of the same activities in the program have also been used with adults in the planning process.

We have experimented with the aspects of the program with first semester architecture students and we find that it offers much at this stage of their education.

Participants at Workshop 13 will also be able to explore the possibilities of using built environment education in beginning architectural studies.

Aase Eriksen, USA and Denmark

Theme 3: Male and Female Approaches to the Design Process

Traditionally the architectural profession has been a male profession, but at the architectural schools today, at least in Scandinavia, the situation is a fifty-fifty division of the sexes. This situation is new and must, in the long run, have consequences for the architectural and town planning profession as a whole. This has had no impact on the constituency of the staff of teachers at the schools of architecture in Denmark. At the School of Architecture in Aarhus, where I teach, the number of male and female teachers is not balanced in relation to the many female students that currently are enrolled at the school. Out of 93 professionally employed, 10 women are occcupied with teaching, 2 out of 10 women are substitute-teachers and can therefore be dismissed when thought necessary.

At the same time there are no female professors or assistant professors at the School of Architecture in Aarhus. In Denmark, women are simply not "used" for professorships at any of the country's architectural schools. In such a situation it is rather difficult to say anything about the learning process for the two sexes during the time of study, since they are largely taught as though the entire student body consisted of men. It might well be that the few female teachers attempt other means of influencing the situation, and emphasize qualities other than those already existent in the working process. Perhaps they also evaluate the results in a different way from their male colleagues. However, since most female architects in teaching have been themselves educated by men, their relation to the new young female students might be problematic.

At any rate, and despite these disabilities mentioned, the female students have, in recent years, manifested themselves through the quality of their projects. A situation the more reflective male teachers now openly admit to. However, to prove oneself as a student at a school of architecture and creating marvellous work for the diploma is one thing; expressing oneself later on in a professional situation is a quite different matter. The female architects in Denmark do not have a developed tradition of having firms or independent businesses of their own. This, of course, means that there are no existing "models" for a female student to identify with when she completes her studies, unless, of course, she chooses a man as an object for identification. Then there are plenty of worthy choices!

The form of architecture discussed and studied at the school where I have been working for more than 10 years now, is primarily designed and carried out by men. The conception, the ideas about urban spaces, squares, streets and parks, and the conception of the surrounding landscapes are all created by men. This is also the case with the definition of the "proper" style in which to build. But at the same time the works of the architects have, in different ways throughout different times, reflected masculine as well as the feminine sides of their psyche. There is, for example, a great difference between Venice and Florence. Both are pre-industrial cities situated in Northern Italy, not far from each other, but with a very different architectonic expression. I have often heard female architects describe Venice as their "inner city" (just as Anaïs Nin described the labyrinth city of Fez, in Morocco, as her "inner city"), while female architects do not appear to express any mentionable interest in Florence, which is considered the supreme landmark for European Renaissance architecture.

Perhaps the fascination of a city like Venice expresses the thought that the feminine qualities are incorporated in architecture in a special way. The ways of expression of women have been forgotten and made invisible in architecture. We have no special architectonic expression in European culture – we are "desymbolized". Meanwhile we have learned all about the male view on architecture and style through the history of architecture. Because we lack designed and constructed expressions of feminine reflections about the feminine as well as the masculine, the feminine expression is categorized within architecture as the subconscious, the unknown – that which society has suppressed or has never known. It might contain creative potential that could be developed to create a counter-balance to the type of architecture and environment that we live with and in – and which is dominated by male values. Aesthetics have traditionally been defined as the doctrine and the beautiful; whereas within Feminine Aesthetics there is an attempt to understand not only the essence of art (a sense of "the beautiful" and the unwritten laws for this) but aesthetics should be understood as means of recognition assisted by experiences of the senses.

Aesthetics seen in this new light become an intermediary between the individual and the environment. In the recognition of this, many female architects try to establish this counterbalance which is lacking in architectonic expression. Several male architects work along the same line, which is absolutely necessary, if there is ever to be a situation where both sexes arrive at a re-establishment of the feminine qualities so as to reach a necessary re-definition of the masculine ones.

Kirsten Birch, Aarhus

Theme 4: Project Work – Aims, Organization. An Evaluation.

An architect is more than a mere draughtsman. "More" means: more creative and more critical.

How can the student be made aware of the fact that there can be a contradiction between his responsibility to the client and his responsibility to the user?

All aspects of the professional making of architecture should come into studiowork, but the ideal, visionary aspects should be overemphasized. – Otherwise our profession will drown in pragmatic arguments and never develop.

Quick changes in society and technical development make finished solutions of short-lasting duration; and the study period is too short to learn everything, anyway. Therefore, it is of decisive importance for the student to develop a good method of working. This implies that the student must be involved in all stages of a project, not at least in the briefing-period. For this, time is needed. Much more time than when the tutor presents a fully worked-out question . . .

You develop a better method of working by going into depth with fewer things.

If students are allowed to follow their interests,

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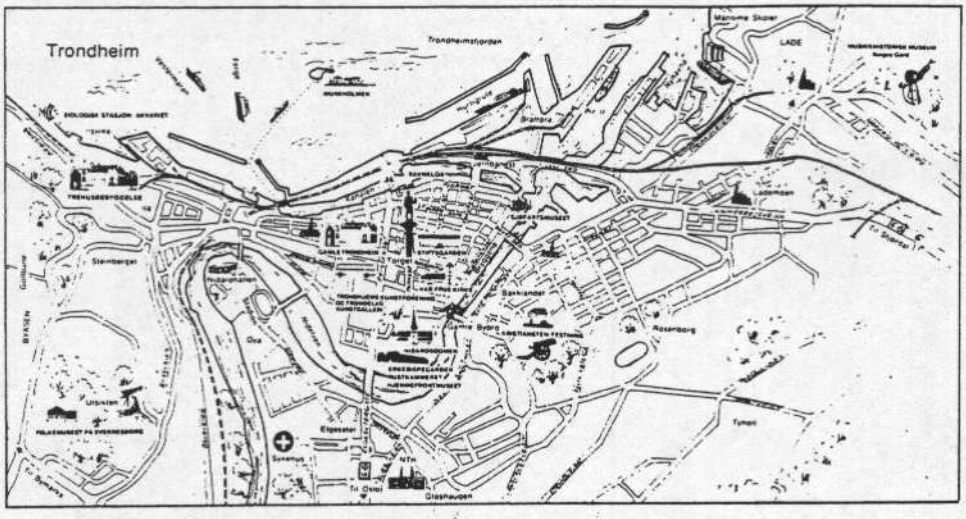

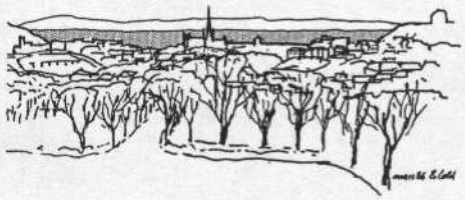

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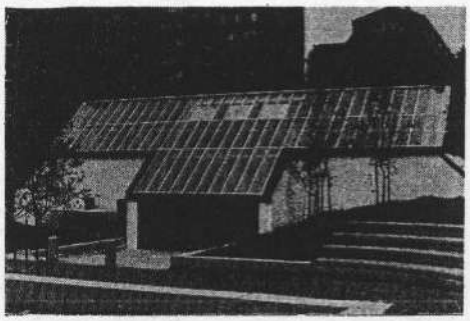

Key:
1. Plan of Trondheim, Norway
2. The Norwegian Institute of Technology in Trondheim (NTH)
3. View of Trondheim from NTH
4. The Architects' Pavilion (Skiboli) at NTH. Exterior
5. The same. Interior
6. Dragvoll University by Henning Larsen

2.

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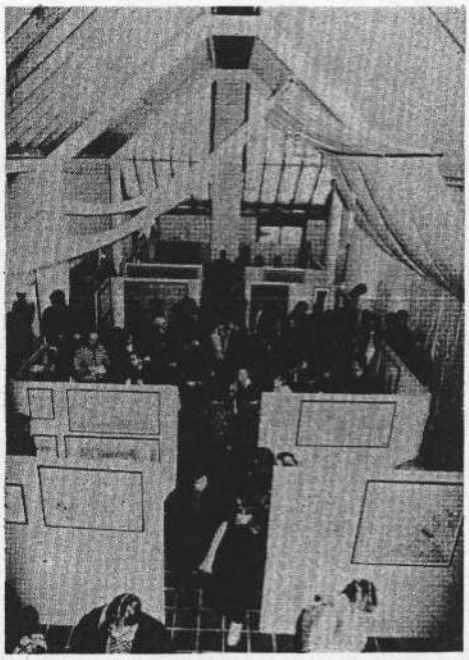

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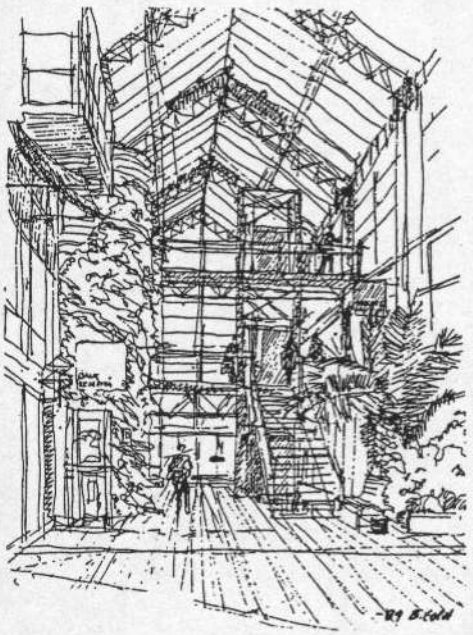

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TRONDHEIM WORKSHOP N. 13 - 29/31 MAY 1986 - LEARNING AND TEACHING

BULLETIN D'INSCRIPTION
APPLICATION FORM

a retourner avant le 1 May 1986 à:
return before May 1st 1986 to:

THE UNIVERSITY OF TRONDHEIM
THE NORWEGIAN INSTITUTE OF TECHNOLOGY
PROF. BIRGIT COLD
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Nom de Famille .....
Family Name

Prenom .....
Name

Ecole .....
Scool

Adresse privée .....
Address

Téléphone .....
Phone

Etes-vous membre individuel AEEA ☐ oui ☐ non
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Votre école est-elle membre AEEA ☐ oui ☐ non
Is your School a member of EAAE

Précisez les languages parlée ☐ anglais ☐ francaise
Please state wich of the following languages you are proficient in ☐ *english* ☐ *french*

Si vous désirez une chambre d'hôtel, veuillez indiquer: Single oui ☐ non ☐
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The price will probably be Nkr. 465,- for a single room per night (incl. breakfast)
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they'll develop themselves more, and the final "production" of architects will cover a much wider area of our profession.

The tutor has the responsibility for the content of the study-program. The student cannot know the extent of an area which he is just going to study.

Projects of different lengths develop different abilities. Longer projects can be used for in-depth training; shorter projects are useful for singling out and developing single aspects. It is efficient to let shorter projects feed into longer ones.

Studiowork is a more important teaching vehicle than lecture courses. Lectures must be adapted to follow studiowork.

One learns more from doing things right than from many failures.

Students should never be encouraged to work out an unsatisfying solution. Also when it is said: "it is just for the exercise", – as part of their training, it puts them on the wrong lines.

Students must be encouraged to try out things. To experiment and not be afraid of making mistakes.

An architect must be able to think and work independently. He must also be able to join in as a member of a group. How should the curriculum be divided between these two different ways of working?

Is marking of projectwork a brake on creativity?

Also students rather prefer to remember their successes than their failures. It therefore "pays better" to point out their good solutions and not their weak ones.

Good teaching is often a matter of just listening. When the student has finished his – often long – explanation of where and why he is stuck, he often has found out himself how to proceed.

Students don't like to be told what to like, but they do appreciate to hear a personal opinion from their tutors. Against this they can test their own opinion, – something which they are very eager to form.

A teacher has two tasks:
- guiding the student in his personal architectural development; and
- preparing the student for practising as an architect, maintaining standards and criteria from outside the school.

These two tasks have in fact nothing to do with each other and can be incompatible.

One can learn to teach, but if a teacher constantly finds that he has uninterested and/or lazy students, he might as well look out for another job!

Inge Mette Kirkeby, Holland

Theme 5: The Artistic Approach to Learning. (with special reference to the Bauhaus-School)

The intention is to discuss the actuality of the ideas, methods and practice offered by the Bauhaus-School.

The Post Modern criticism of modernist architecture has also been directed against the Bauhaus-School and its influence.

This criticism seems unjustified because the pedagogic work at Bauhaus had different programs and there is no direct connection between, for example, the Basic Course at the Bauhaus and the hostility towards fantasy which marked the Post-war style of building in Europe. Nevertheless, it is high time to ask whether architectural education should not build on new and actual models of aesthetic learning. The Bauhaus was, in its time, in the forefront of the European avantgarde. Today the connection between architectural education and the visual arts has been weakened in many places. In Norway, for example, much of the visual-tactile training in the basic architectural courses is often fragments of the Bauhaus methods, whereas newer artistic trends are taken up as fashions without any real consequence for the basic education. If the criticism of architectural modernism is to be taken seriously, it has to have an impact on how we teach architecture in the foundation courses. To single out one central subject: architectural historicism. The Basic Course at the Bauhaus has often been interpreted as an attempt to create a historical doctrine with universal validity, a kind of grammar for an international language of architecture. The new consciousness of the historical content of architectural forms, the awareness of genius loci and the dissimilarities, the pursuit for real democracy in physical planning and building – all these arguments should result in a new debate on the aesthetic base of architectural education.

Jan Brockmann, Trondheim

Theme 6: Innovation, Creative Teaching and Lifelong Learning (or The Survival of the Teacher)

The position of being a teacher of architecture should be enviable: our job is to teach and to do research. Research work also includes innovative architectural design. This rich life often is perceived to be a conflict and may lead to a crisis of identity: whether to be a pedagogue (a role for which we are not educated), a research worker (a role for which we MAY be educated), or a practicing architect (which, of course, we always have been told is "the real meaning of life"). Or are we universal geniuses combining all these activities in a fertile and rich whole?

The ideal way of combining the activies may be a circular pattern not just for teachers, but also for architects: some years practicing architectural design, some years teaching students, some years doing research work, and then back to the architect's studio again. The tendency to think in this way is more evident in periods of high building activity than in periods of high unemployment; more evident when you are 30, than when you are 55.

So, what the majority of people do is to combine these diverse activities during their everyday-lives. This presents problems: a lack of capacity and a lack of concentration. (And what about all that electronic business going on?)

Let us discuss and exchange experiences on different ways of combining activities.

DISPOSAL OF TIME – during the day, week, or year in different roles of activity.

TEACHING = RESEARCH WORK. Is it possible to consider the teaching process as serious research work? For instance, by posing problems and handling them scientifically, or, by using student projects as the raw material for a research project? Are these only possible in advanced studies?

TEACHING = RUNNING AN ARCHITECTURAL PRACTICE. Working on competition projects together? Live projects? The students working as assistants at a teacher's office?

TEACHING = LEARNING. Studying new literature TOGETHER? Studying new fields of architecture by travelling abroad together? Doing the same exercises and handling the same problems at the students – or together with them?

My personal interests and experiences come mainly from the development of courses for advanced studies, based on unanswered questions and by regarding the students' work as a valuable source of experience, as well as from developing methods of architectural studies during excursions abroad.

Harald Høyem, Trondheim

Theme 7: Reflections on The Teaching of Architecture

With 20 years of teaching architectural design behind me, 5 at the Oslo school and 15 at the University of Trondheim, it is natural to reflect upon the teaching of architecture which is so closely linked to our daily life, so formative of the culture of which we are a part and so much a product of that culture.

I try to recollect the expectations I had as a student and those that seem latent in our students today. It is these expectations that are the fount of their engagement and to which we should respond in order to light the spark of enthusiasm and retain their devotion to study through 5 years.

Architecture contributes to the quality of life we aspire to: homes that make us aware of the seasons and of the sun, that are a graceful response to the needs of the body and soul, spaces that flow generously with our movements, that receive light in a way that make materials significant and attractive. The study of architecture should prepare us to make beautiful homes and spaces. The question is, How?

The environment at the University of Trondheim could hardly be less inspiring to the study of architecture. But this is a challenge to us to make the best of it, to use every opportunity both to improve the spaces we work within and the activities and projects that can be a source of inspiration to the individual student.

We have an institute responsible for freehand drawing, colour and form. It lies in the midst of the studio section of our department: a very priveleged location as it should be, because what is more fundamental for the study of architecture than freehand drawing? What better foundation for creativity and personal expression than form and colour studies?

I think that the EXPECTATIONS I wrote of above include a challenge to the students' creativity. They expect to find this challenge awaiting them at the school of architecture. Creativity demands the holistic *understanding* of life, of structures, materials, light, economy, even politics. To develop creativity is to prepare the individual for responsibility. It's not my intention here to evaluate or criticise how this sector of our education is neglected, but to stress its fundamental importance, and what better argument than Le Corbusier's passionate appeal for drawing.

The localities which our Institute for freehand drawing form and colour occupy, provide a perfect opportunity for making WORKSHOPS FOR CREATIVE ACTIVITY: Drawing (croquis), painting, modelling (in clay and metal), linoprinting, monotype, lithography etc. all attract the attention of students and provide an outlet for personal expression throughout the 5 years of study. Creativity is not something which can be provided by a short intensive course of a fortnight or three weeks ending up in a project completed. Creativity demands the opportunity to create, which means both the equipment, the tools, paper, colours, canvas, etc. and the ambiance of devoted teachers who inspire to work and have a sure eye and hand that can correct and make adjustments.

Compared to other engineering institutes with their expensive research equipment, our Institute of creative research is a poor relation and a neglected one. I think that we must give greater priority to creativity and provide the spaces and equipment for developing it.

Our Department of Architecture has focussed upon a *project-oriented* form of study. This means that the projects are the keys to the study and express a totality. At each stage the projects should contain the fundamental elements of architecture, not fragmentary pieces of information – not specialist studies. Instead of fostering specialists in our teaching staff, we should seek the unifying co-existence bet-

ween all things: light, form, function, structure, city planning, economy, graphics etc., not making a speciality of one or other sector. Sectionalism in architecture is self destructive.

For theory and historical studies, we developed a project type called "The home of man through the ages". This involved groups of students in a basic library research of some chosen human settlements. This type of project provides a limitless source of subject matter, objective yet passionately interesting upon closer examination of peoples, their culture, social ritual and material life patterns, their homes, their places of work, their resources and crafts. The project requires that students learn to search for the necessary information, to present it concisely and vividly in a manner presentable as a unified and continuous exposition, preferably legible for the layman and schools. This means training in scholarship, concise writing, drawing, model making, and graphic presentation of photos etc. But most important, it means an involvement in other peoples and cultures. (And this involvement was both satisfying and surprising.)

This *type* of project can have different levels of complexity, from small primitive cultures to more complex urban cultures. At different levels it could focus upon building techniques, urbanism, ecology etc. and at certain phases be devoted to the study of an important architect or movement: Palladio, C. Wren, McIntosh, F. L. Wright, Le Corbusier, Mies, Bauhaus, the Constructivists etc.

One of the great advantages of this kind of project is that it gives training in research, in presentation, model building, and drawing. The student is at WORK, studying, presenting, using the totality of his or her mind, not just listening to lectures and noting down information of questionable interest. It is by doing that one develops the *need* for information. DOING and the constant use of intuition are collaborative forces. They are the individual's greatest resource. I think we neglect this fabulous potential.

Robert Esdaile, Trondheim

PROFILE:

THE DEPARTMENT OF ARCHITECTURE AT THE NORWEGIAN INSTITUTE OF TECHNOLOGY IN TRONDHEIM

Architects are educated at two schools in Norway: THE OSLO SCHOOL OF ARCHITECTURE – AHO – with an intake of 35 students each year and 5½ years of study; and at THE DEPARTMENT OF ARCHITECTURE AT THE INSTITUTE OF TECHNOLOGY IN TRONDHEIM – NTH – with an intake of 60 students each year and 5 years of study including the diploma.

The Norwegian Institute of Technology – the only one in Norway – was founded in 1910 with 7 departments. Today there are 9 departments with about 6000 students, of which 300 are architecture students. We have one teacher per six students, while the average at all departments is one per seven.

The percentage of female architecture students has increased the last ten years from 10% in 1975 to more than 50% in 1985. During the same time the percentage of female teachers has increased from 5% to 20%.

The department is divided into 5 sections:
- Architectural Design
- Building Technology
- Aesthetic Communication (art and colour)
- Architectural History
- City and Regional Planning

At both Schools, (in Oslo and in Trondheim), Architectural Design is the main topic.

The education in Trondheim is based on a common basic education with 3 years of compulsory basic courses and 2 years with optional courses followed by a diploma.

85% of the students complete their studies.

The compulsory basic courses are carried out by interdisciplinary teacher groups with responsibility for co-ordination of all disciplines and subjects from term to term. This is very time-consuming but necessary in order to integrate projectwork and lectures.

The following subjects are offered:
- climate and built form
- housing in rural districts and in towns
- institutions, industry, agriculture etc.
- building administration and technology
- architectural history, preservation of buildings
- aesthetic communication, two- and three-dimensional form

Practical training is compulsory for a total of 20 weeks with at least 12 weeks spent on a construction site. The department is not responsible for arranging this training. Most students practise during their summer vacations. When the students have finished their diploma, they can immediately start their own office and become a member of the Architect's Association.

In order to sketch a more lively picture of the department, I want to express some of the frustrations we as architects feel, especially due to the fact that we belong to an Institute where technology, science and industrial management are the main foci, and where social aspects and artistic development are peripheral topics.

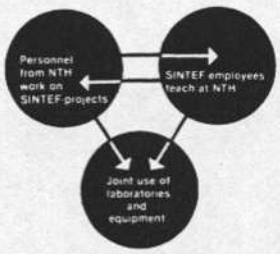
This frustration is intensified by the fact that, compared with other departments, our department gets less than half the amount of money annually per teacher for the administration and scientific equipment.

Another frustration is our facilities, which are of low architectural quality both exterior and interior. We find it difficult to teach architecture and do our work when there is hardly any examples of high quality to refer to except for the old buildings from 1910 – 15.

There is a lack of understanding in the central administration that our studios should be compared with the well-equipped laboratories and workshops belonging to the other departments.

Having looked at the bad side of things, I should look at some of the good ones too. These are:
- we have engaging and motivated students
- there is a good relationship between teachers and students
- we have a democratic structure
- we are prepared to improve the education and increase research and development
- we have a good co-operation with the research institute SINTEF.

The Institute of Technology – NTH – co-operate with SINTEF (the Foundation for Scientific and Industrial Research – a non-profit organization which performs research under contract to corporations, industrial associations, public service agencies, government departments and other clients). The mode of co-operation between NTH and SINTEF is as follows:



Key figures:

Annual turnover	355 mill. NOK
Result	5.5 mill. NOK
Employees	1109*

* Whereof 622 scientists, 25% hold a doctor's degree.

The Division of Architectural Design co-operate with the research division "Architecture and Building Technology", with 12 employees. Their main fields of research are experimental buildings, energy, glazed spaces, user evaluation, user participation and multi-functional space, technical improvement of existing buildings, visual communication and computer-aided construction.

This year all the Departments at the Institute of Technology are working on development plans as part of a general strategic plan.

I will end my description of our department by explaining the educational aim and the main strategy presented in our development plan for future education.

THE AIM is to develop the ability to design the physical environment through an education which is at the same time:
- practical and academic
- theoretical and artistic
- innovative and critical

The scope and the content of the education must be the result of the needs in society for architectural competence in traditional and new fields, both in the short and in the long run.

The education must develop a professional profile based on the department's distinct qualities and take advantage of the environment by mutual exchange of knowledge and experiences.

The department must further develop the optional courses to improve the possibilities for specialization in different professional directions.

We will define our professional profile and concentrate research and development work on the following subject areas:
- character of place and use of resources e.g. planning in developing countries
- improvement and preservation of the existing environment
- experimental buildings
- evaluation
- the use of computers

The department will emphasize international co-operation.

The main strategy is as follows:
Assuming that a third architectural school will not be started, we will increase the student intake each year from 60 to 80. The increase of students would result in a need for more technical and scientific employees, space and other resources.

The educational programme is to be a common basic course lasting 3 years, followed by possibly 1 year of practical work and 2 years with optional courses and diploma.

The possibility for sharing special courses amongst the Nordic Schools of Architecture would be encouraged.

To improve the professional quality of education, we will establish interdisciplinary groups across the divisions for the subjects mentioned above.

We will work out recommendations for an alternative and formalised post-graduate study for architects.

We will strengthen architectural theory and we need to strengthen the administration staff to relieve the teachers.

Birgit Cold, Trondheim

Coming Events

International Symposium/Exhibition Unesco/ Paris 20 – 22 October 1986. *"Architecture Education: Spaces and Practices"*. The Annual General Assembly of the EAAE in Naples decided that instead of holding its usual Autumn Workshop, the Association will support the above event which is organised by one of its member schools, École d'Architecture Paris – Villemin. Further information will be circulated soon.