BERLIN FORUM 1979

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Technische Universität Berlin

REPORT

DECLAN KENNEDY (ED.)

EAAE

European Association for Architectural Education
Association européenne pour l'enseignement de l'architecture

Berlin Forum
Nov. 8–10
1979

'The Role of the Project in Design Education'

Berlin 1980

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Tel.: (030) 314-2976
Telex: 01-83872 ubtu d

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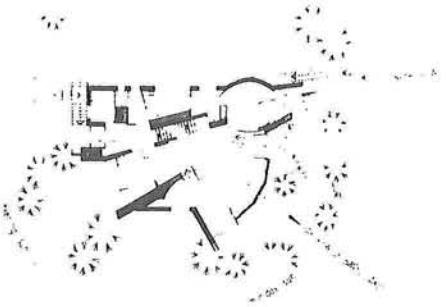

'The Role of the Project in Design Education'

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INTRODUCTION

Declan Kennedy,
editor of Report and co-ordinator of the BERLIN-FORUM,
Technische Universität Berlin

The BERLIN-FORUM of the European Association for Architectural Education, held at the Department of Architecture of the Technical University of Berlin in Nov. 1979, successfully attained its desired end with the full support of many schools of architecture in Europe and from other parts of the world. As one of the main objectives of the EAAE is to help individual teachers and students throughout Europe to make contact with each other, the Architecture Department at the TU Berlin were very pleased to be able to act as hosts to the 7th. FORUM of this association. This was all the more true as the theme of the BERLIN-FORUM was a topic that has been discussed in Berlin over the last ten years and is still of high importance to both staff and students at the outset of introducing new study and examination regulations in the Architecture Department here.

The preparations for the FORUM had been somewhat delayed and official invitations were only mailed in August '79. Nevertheless, many schools made it possible to attend. Right at the beginning of this report, I would like to thank the participants for their quick responses and for their flexibility in arranging their attendance and contributions, even at such short notice.

The FORUM was accompanied by an exhibition of projects which because of their complexity and heterogenity can not be documented in this report. The exhibited projects were, however, very important for the level of discussion which arose during the meeting; they served as illustrations to the didactical and pedagogical points being made; a few have been included in the annex.

The order of the presentations in this report is not arranged according to the time schedule of the FORUM. the first section contains the papers which had been previously distributed; the second section is reserved for the keynote addresses. In the third, a selection of papers which were brought by their authors to the FORUM but only partly presented within the discussion sessions and which as yet were not distributed have been included to show the interest that was generated already before the meeting. The summary of the discussions which follows is more or less my interpretation of the salient points and an attempt to pull together a very open and lively few days of constructive argument in Berlin.

In editing a report of this kind, many problems arise, for instance, we did not tape the discussion. Therefore, some omissions are inevitable and I hope that participants will forgive me if their favorite point is missing.

One thing that came up, quite seperately from the "project" topic, especially recommended by the Discussion Group B, was the wish that students should be able to take part in the planning and organizing of EAAE-AEEA activities. This has been one of the many aims of the executive committee and will be considered in the general assembly. The statement of the Student Group, brought in towards the end of the plenary session, including Komossa's plea for political choice, was backed by Hans Haenlein's reiteration of EAAE-AEEA aims: "not to make resolutions by vote which not everybody could carry, but to give everybody (as individuals), students and staff alike, the chance to state the thrust of their thinking on architectural education and to confront that with those of others". In this manner, the students' statement was discussed.

Another group (Group C) vented a strong desire for continuous information through EAAE-AEEA on curricular development on project-oriented studies, suggesting that funds should be given by faculties to EAAE-AEEA for this purpose.

There are two contrasting levels of operation at which the members of the EAAE-AEEA can contribute to the general discussion about the role of the project in design education, which I hope will continue , at least on an inter-European level:

The first is the more formal and has to do with the complicated system of recognition of academic degrees. This is being discussed both bilaterally between certain countries or institutions and on a co-ordinated European level, for some time. Some of the EAAE-AEEA schools and many of the professional organizations are represented at the European level, where those who are making the recommendations and often the decisions need to know the importance of project-work in architectural studies. There is a danger that architectural curriculum could be put into a straight jacket position by such European decision-making bodies; we have already experienced what can happen, e.g. with the Rahmenprüfungsordnung (the framework for examination regulations) in the Fed. Republic of Germany or with the continuation of the R.I.B.A. (Royal Institute of British Architects) system of school recognition in the U.K., Britians's former colonies and other schools and countries of the world.

The second level is the more interesting and desirable from the educationalist's viewpoint. In academic circles all over Europe, there has been a resurgence, a new discussion about learning by doing, learning through research (especially research on the process of implementation) and learning through feed-back to implementors by users. As communications between educationalists spread over the borders of European countries, peole are beginning to question old values in approaches for bettering

the built environment. The theoretical postulates in architectural schools (assuming they had been present) are changing as the evidence in the built environment, to be seen all around us, has been seen as no great compliment to our endeavours, to-date. If, on the one hand, we are to remain open and flexible enough to allow and to stewart creativity and the development of new ideas and, on the other hand, preserve a minimum amount of continuity, then a unifying concept can only be found in the spectrum from project-orientation to project studies. It was in the differenciation of this unifying concept and the experience in carrying through the idea of project studies that the FORUM made its contribution.

Acknowledgements

Full financial and organizational collaboration was rendered by the Department of Architecture and by the President of the Technical University Berlin, for which I express my thanks. However, it was the intensive support and initiative of Ingeborg Kapuhs and Gisela Lossen, together with the student assistants two to three from each institute in the department, that made the FORUM run as it did. Our thanks goes to the Berlin Senator, Harry Ristock, and his director, Hans Müller, for their hospitality at the official reception and the Saturday afternoon excursion of the inner city areas of Berlin (West). I would also like to express my gratitude to Hans Haelein, London, the then President of the EAAE and to Herbert Kramel, Zürich, the new President, for their enormous moral and substantive support, their constructive criticism and their endless patience too in the preparations and the running of the FORUM, both towards me personally and towards my Department. The keynote speakers: Jill Jones, Kees le Nobel and Peter Jokusch, and the discussion group leaders: Geoffrey Broadbent, Peter Haupt, Dietmar Grötzebach, Mogens Breyen, Hermann Becker, Tony Morgan, Doug Clelland, Stuart Knight and Philip Geoghegan are to be especially thanked as they held the reigns on the first two days and were the main backbone of the plenary session on the final day. They reported the work of their discussion groups - so precisely. Without them, the FORUM would have been a normal, possibly boring, conference. Because of them and the reactions of all the participants, we were able to work on an understanding of our differences, on understanding each other more deeply and in finding points of agreement on which we can now act together.

EAAE

European Association for Architectural Education
Association européenne pour l'enseignement de l'architecture

Berlin Forum
Nov. 8 – 10

TECHNISCHE UNIVERSITÄT BERLIN
FACHBEREICH ARCHITEKTUR (FB 8)

PROGRAMME

WEDNESDAY 7. NOVEMBER		LOCATION
13.00	FORUM OFFICE OPEN EXHIBITION CONTRIBUTORS CAN HANG UP THEIR PROJECTS IN EXHIBITION AREA	ROOM A 105 FOYER
20.00	FORUM OFFICE CLOSES	ROOM A 105
20.00	LIMITED AMOUNT OF TICKETS ABAILABLE FOR BERLINER PHILAMONIC (GERSWIN, GRÖFE, BARBER)	PHILHARMONIE
20.30	DINNER TABLES RESERVED IN RESTAURANTS	SAVIGNYPLATZ

THURSDAY 8. NOVEMBER		
09.00	FORUM OFFICE OPEN EXHIBITION CONTRIBUTORS CAN HANG UP THEIR PROJECTS IN EXHIBITION AREA	ROOM A 105 FOYER
10.00	EAAE COUNCIL MEETING	ROOM A 801
13.00	MEETING OF DISCUSSION GROUP LEADERS	ROOM A 105
14.00	OPENING OF THE FORUM	ROOM A 053

WELCOME ADDRESS:
VICE PRESIDENT OF THE TECHNISCHE UNIVERSITÄT BERLIN

"THE FRAMEWORK OF THE FORUM"
FORUM CO-ORDINATOR: DECLAN KENNEDY
TECHNISCHE UNIVERSITÄT BERLIN

"THE AIM OF THE FORUM"
EAAE-PRESIDENT: HANS HAENLEIN
POLYTECHNIC OF THE SOUTH BANK, LONDON

15.00 KEY STATEMENTS

"THE ROLE OF THE PROJECT IN DESIGN EDUCATION"
JILL JONES
POLYTECHNIC OF CENTRAL LONDON
DEPARTMENT OF ARCHITECTURE

"STUDENT PROJECTS AND PRACTICE"
KEES LE NOBEL
TECHNISCHE HOGESCHOOL EINDHOVEN
FAKGROEP STADSVERNIEUWING

"PROJECT STUDIES"
PETER JOKUSCH
GESAMTHOCHSCHULE KASSEL
ORGANISATIONSEINHEIT ARCHITEKTUR

18.00 OPENING OF THE EXHIBITION
KARL BREITSCHUH
FACHBEREICHSSPRECHER
FACHBEREICH ARCHITEKTUR
TECHNISCHE UNIVERSITÄT BERLIN

19.00 OFFICIAL RECEPTION — HOTEL GEHRHUS, BRAHMSSTRASSE 4
BY HARRY RISTOCK,
SENATOR OF BUILDING AND HOUSING
HOUSE OF REPRESENTATIVES OF THE CITY OF BERLIN — 1000 BERLIN 33, GRUNEWALD

FRIDAY, 9TH NOVEMBER		ROOM
09.00	DISCUSSION GROUP MEETINGS FOR TOPICS AND DISCUSSANTS SEE POSTERS OUTSIDE ROOM	A 105
12.00	LUNCH	
14.00	DISCUSSION GROUP MEETINGS IT IS UP TO THE PARTICIPANTS OF THE INDIVIDUAL GROUPS TO DECIDE IF AND WHEN THEY WANT TO USE THE EXHITED PROJECTS TO ILLUSTRATE THEIR POINTS	
16.30	COFFEE BREAK	
17.00	AD-HOC ACTIVITIES	
TO	FILM PRESENTATIONS	A 060
21.00	SLIDE PRESENTATIONS	A 052
	VIDEO PRESENTATIONS	A 053
	PARTICIPANTS WHO HAVE BROUGHT FILM, SLIDE OR VIDEO MATERIAL SHOULD REPORT BEFOREHAND TO THE FORUM OFFICE TO PLAN THE TIMES OF THEIR SHOWS	A 105
18.00	GENERAL ASSEMBLY EAAE FULLY-PAID MEMBERS ONLY	A 401 A
21.00	OWN DINNER ARRANGEMENTS	

SATURDAY 10. NOVEMBER		
09.00	FINAL PLENARY PANEL DISCUSSION PANEL: DISCUSSION GROUP LEADERS	A 053
12.00	BUFFET	
13.00	DEPARTURE OF THE EXCURSION BUSSES COVERING THE SO-CALLED CITY BAND AREA OF BERLIN, WITH COMMENTARY BY ARCHITECTS WORKING FOR THE SENATOR OF BUILDING AND HOUSING	
18.00	EXCURSION ENDS AT HOTEL AROSA AND HOTEL EXCELCIOR	

SUNDAY 11. NOVEMBER		
10.00	FURTHER AD-HOC ACTIVITIES WITHIN THE EXHIBITION	FOYER
13.00	DISMANTELLING OF THE EXHIBITION	

E N D O F F O R U M

THE ROLE OF THE PROJECT IN DESIGN EDUCATION

Herbert E. Kramel
Professor of Architecture at E.T.H. Zürich and new President of the EAAE

The EAAE is arranging its 7th international forum in collaboration with the School of Architecture at the Technical University in Berlin. The dates will be November 8-10, 1979.

With the forum in Berlin the EAAE will enter a new phase of its development. The first six forums were planned to create contacts between schools, teachers and students and therefore were designed to cover very general ground. The forum in Berlin will concentrate on a theme specific enough to evoke interest and formulate conveyable knowledge. The theme will be THE ROLE OF THE PROJECT IN DESIGN EDUCATION.

During the last ten years much discussion and reform in higher education in general and in architectural design education in particular has centred on the role of the 'project'.

A whole new ideology has been based on project oriented teaching. But only the translation of this new findings from the present ideology into a methodology that is part of a common body of knowledge will enrich the field of education.

Let us come back to the question of the project and it's role in design education. Since everyone in teaching has a notion of the role of the project, it can be assumed that the question posted will be met with many ready answers.

Nevertheless, let us discuss some points which might enrich the debate before the Berlin-Forum.

Among the many questions which come to ones mind the type of projects used in architectural education today seems to be of importance. What do we consider a project? What motivated the choice of a specific project? What happened to the "building-type" approach? What are the roles of the faculty and the students in the selection and development of the project? How does the evaluation of a project take place? What effect does the quantity of students in a school have on the project dealt with? What, if any, are the differences between a semester-project and the thesis project?

What is the relationship between the various fields taught at a school of architecture and the projects in the design courses? What is the difference between a project dealt with in the master-class of an academy as opposed to one in project oriented course? How do we see the case-study

method with respect to our project debate?

Finally, how does a project in education differ from a project in the profession?

The EAAE council feels that the time is right for highlighting the different views and opinions across Europe on these topics and to use actual project work as vehicles for discussion.

In Berlin we hope to have an opportunity to deal in depth with all, or a number of these questions.

The forum arrangements will include a) a plenary session during which selected projects will be presented, b) discussion groups where themes introduced during the plenary session will be illustrated by the projects and c) an exhibition of all the projects submitted.

We feel that the forum and it's debate on the role of the project in design education will provide the impetus to move the EAAE into it's next stage of development and to stimulate the participants with new insights into an important aspect of design education.

THE FRAMEWORK OF THE CONFERENCE

Declan Kennedy,
Co-ordinator of the BERLIN-FORUM
Opening Address

There has been a very good reaction to the idea of the FORUM and quite a lot of suggestions have come in either directly to me or to members of the executive council. I will now attempt to set the framework for this gathering, hopefully to assist good discussion on

THE ROLE OF THE PROJECT IN DESIGN EDUCATION

First and foremost we have to distinguish between

1) the contributions to the theme of the FORUM
2) the contributions to the exhibition of projects.

The exhibition contributions are of great importance to illustrate the theme and should be seen in this light: to illustrate the ways and means, the methods and results, the relevance and the effectiveness of projects within architectural study systems. However interesting the subject of the exhibited projects might be, we must take care that we do not miss the point of the FORUM. It is clear that many instructors in design education consider their project as being quite unique. They identify themselves with it and, therefore, presume that other participants must have a strong interest in what they have achieved and exhibited. The last point is not necessarily the case. A common denominator - despite the heterogeneous cultural backgrounds of the participants (i.e. roughly 133 teachers and students from 15 countries) - seems to be emerging as an interest in the didactical and educational qualities of the types of projects run at different levels in different schools or countries. Furthermore, an interest has become evident in finding out how interdisciplinary and how complex a project can be at different levels of architectural studies.

Under the term PROJECT in design education, there are so many different interpretations ranging in a spectrum from one-off day-designs to final thesis projects lasting years. A few of the more prevailing interpretations, without being tempted to say they may be complete, could be formulated as follows:

P 1 Two to three week concentration on a design issue is termed as a project in many architectural schools in European countries. These might include such subjects as Building Construction, Design Methods, Fire Precautions, Building Regulations, etc. - that is those subjects of a more technical nature.

P 2 Term or semester projects are seen in other schools as being a more effective way, according to the level of the student, of studying an issue in depth, of doing site surveys and reviewing the examples of the same

building issue that have already been implemented.

P 3 Academic year projects are those which try to start from a social or economic issue or from a need of somedefinable section of the population. They usually go through an analysis of social, economic, environmental and political conditions. They then attempt to connect this issue with a design solution, which would then include the more technical subjects, mentioned in (P1) above.

P 4 Project-oriented studies is a development of P3, trying to integrate the teaching of theory, of tools and instruments of design and building implementation with the social, historic, economic and political issues at hand. This type has many variations, as the other have too, but in general it aims at an integrated, interdisciplinary,multi-faceted approach to the education of an architect as a change agent and not merely a design engineer.

P 5 The project-studies approach tends to build on the former, but sends the student to work on the site with real-life social and building issues. It aims at self-learning systems, at practical competencies and ateducating the architect as a responsible member of society, depending on the issue and the emphasis laid on the work by the educator.

Most schools have more or less the good intention of covering some or all of these types or approaches. Further types and options are possible and combinations are frequent in many architectural schools, branching out into experiments, transferring models of project organization from elsewhere, etc. etc.

AIMS OF THE FORUM

It is to delve into these experiences and experiments, to discuss their relevance, pit-falls and methods, and to connect them to pedagogical and didactical approaches that this BERLIN-FORUM of the EAAE-AEEA has been instigated. This is also why we have chosen the discussion group system rather than the usual presentation of many papers. Here, I make a plea to you to report on project forms of architectural teacing and learning, based on an integrated, interdisciplinary approach and not only on design exercises. Our exchange is aimed at assisting the development of the content in our architectural schools, so as to start the young student off on a life-lomg learning process and to allow the students to develop themselves as responsible designers within society.

To achieve these aims within this FORUM, I think we need to illuminate some problems which could arise, if we do not consider their possibility beforehand:

a) The discussion could be too general, too inclusive.

It is, therefore, paramount that we aim at formulating resolutions or strategies within the discussion groups.

b) Because of the particularity of the exhibition contributions, the outcome of the FORUM could be too specific, could have little relevance to the home situation of the individual participant, could even be a big muddle of too many specific considerations.

It is, therefore, paramount that we discuss why a particular approach was taken in a project and try to identify principles which are transferable to other projects and other situations.

c) In not having the traditional system of presenting papers, one after the other, people will be inclined to say that they have had no chance to explain their point of view in detail or to ecplain their successful project on which they have worked so hard.

Two evenings have been set aside for general accounts of projects by their contributors on an 'ad hoc' basis. At these times, films, video and slide shows can be presented. It is necessary, however, to understand that already 120 participants have registered and roughly 50 projects are expected. If I were to allocate even 20 minutes to each project, we would use up all the time at our disposal without any breaks.

d) Some criticism of former EAAE-AEEA conferences has been that little came out of them and that at a very high cost (organization, travel. etc.).

The content relevance and the level of success of this FORUM is the responsibility of every participant and of the member schools. We, at the Department of Architecture of the Technical University Berlin can only provide the site, some keynote statements, some examples and a framework. It must be considered that we are only at the beginning of developing a line of common thought in Europe, at this early stage - and that with so many language difficulties. We cannot expect much more than an awakening to common problems and to an awareness of the value of school and 'personal' exchange, even if this is difficult to assess and report.

I would like to remind those whose mother tongue is the same as the conference language that most participants are speaking in their second language. I, therefore, declare, the offical language of this FORUM to be: broken english.

Discussion topics have been suggested for the group meeting to-morrow. They have been circulated in both German and English. Please, feel free to add and subtract as the discussion dictates:

DISCUSSION TOPICS

- *The project as catalyst for curriculum development*
- *Relationship between simulazed projects and real-life projects*
- *Student delf-determined projects*
- *Learning through research approach to projects*
- *Professional support of action groups by students as a basis for student projects in real-life situations*
- *Integration of all relevant subjects on the curriculum in basic training projects extending over one year*
- *Project-orientation in architectural studies as a motivation for an interdisciplinary and holistic approach*
- *Project-studies as a framework for self-learning processes in order to educate the architect as a responsible member of society*
- *Project studies in the light of standards, set by law, by professional bodies or by other institutions of higher learning*

THE ROLE OF THE PROJECT IN DESIGN EDUCATION is a highly controversial subject in more architectural schools and, therefore, I appeal to all participants, once more, to lay emphasis in their discussion groups on:

- *educational objectives,*
- *didactical issues and*
- *pedagogical pay-offs.*

In other words, the relevance and the effectiveness of the porject as a vehicle towards attaining goals at levels, set out in the objectives, within a learning process. Some of the more detailed aspects can be dealt with, if one tries to answer some of the following questions:

QUESTIONS TO BE ANSWERED

1. *Why did you bring this particular project to Berlin?*
2. *At which level of the course has this project taken place - which year group?*
3. *By whom was the project formulated (staff, students, others) ?*
5. *Were there any educational reasons why this project was placed at this particular moment in the course?*
6. *How is the assessment of the project work of the students carried out and by whom?*
7. *Is the project pre-defined by the curriculum and how ?*
8. *Could you describe where the project was successful and where not ? and why ? for students, for staff ?*
9. *Did the onbectives against which you measured the success or failure change during the project ?*

10. *Can you scale some of the objectives ?*

11. *What role did you personally play in the project ?*

12. *What was the student-staff ratio in the project ?*

13. *What "experiments" are going on in your school ?*

14. *How could you categorize your project (P1 - P5) ?*

15. *Does your school run core courses, lectures and/or other projects parallel to the project described ?*

16. *What do you expect to get out of this BERLIN-FORUM ?*

Partly, these questions will have been answered in the explanatory text accompannying the exhibition contributions. For this purpose, I included a draft proposal in the last mailing to possible participants. Although it was somewhat long itself, I did appeal to the exhibitors to be brief - one sentence could have been formulated for each of the headings below:

DESCRIPTION OF THE PROJECT

Background:
- *General social & economic conditions*
- *General building conditions*
- *Cultural setting, etc.*
- *Frame of reference*

Aims and Goals:
- *Subject matter to be covered*
- *Definition of the addressee or client*
- *Aimed-at level of proposals,*
  - *theoretical postulates,*
  - *change strategies,*
  - *planning proposals,*
  - *design drawings and/or*
  - *working drawings, etc.*

Method of Approach:
- *surveys, questionaires,*
- *work on the job,*
- *participant observation,*
- *action research,*
- *gaming and/or*
- *simulated situations, etc.*

Process:
- *decision framework,*
- *no. of participants (students, staff, others)*
- *co-operation within the group*
- *co-operation outside in the real planned environment*
- *co-ordination of activities, etc.*

Results:
- *design results evaluated against aims,*
- *learning results for students and staff,*
- *proposals for change or revamping of the method and /or process, etc.*
- *relevance within the complete study curriculum, etc.*

EVALUATION OF THE PROJECT

Feedback on the fullfillment of the set of aims as defined at the beginning of the project:

Instructor's views,
Other staff's views,
Examiners' views
Views from the practicing profession,
Students' views.

Academic marking system:

Jury,
Outside examiners,
Co-operative assessment,
Authorative grading, etc.

EVALUATION OF THE FORUM

I hope to be able to document the distributed papers, the keynote addresses and a summary of the discussions that have taken place at this confernce as soon as I am able after you have returned to your home countries. I would also ask for your immediate reactions and for short account later on the on-going process of discussion on this topic. This FORUM is to be seen as a starting point for general communication on the topic which I hope will continue between the European Schools of Architecture in the future.

The health of our Association, our very existence, depends on providing new visions, as well as models. It is my hope that EAAE-AEEA's involvement and growing concern in matters of architectural education will create co-operative modes of thinking and action which will produce visible realities in environmental change in the future. I would hope that through our activities future generations of designers and planners would approach the issues with an attitude which recognizes the interconnectedness of all phases of living and being - that product and process, content and form are ever inseperable realities. In this vain and with this aim, I wish you a very sucessful conference.

PROJECT BASED DESIGN EDUCATION

Jill Jones
Senior Lecturer for Design and Building Construction
Polytechnic of Central London

I did not go to the concert at the Philharmonie last night so I don't know whether there was a note to set the tone. When at the beginning of a musical performance a note is sounded it is to make sure that everyone agrees as to the key the whole thing is in, or knows the basis from which to start.

To do this one either chooses the most flexible instrument - like the piano for a piano concert, or the most constant or reliable, for instance the oboe with its small range of adjustment - which you consider one depends perhaps on the kind of performance you are expecting. I think I shouldn't push the analogy further... but suggest that an appetite for discovering and sharing the insights of our colleagues as to the most fruitful role of the project in design education could be thought of as the key note of this occasion.

Many of us have greeted the title of the Role of the Project in Design Education with a sigh- a resignation to query the obvious.

How else in this day and age should we teach design? A knowledge of design and about how it is performed can be learnt without what we are calling project work, but whether the ability to design with the present interpretation of that skill, can be gained without such a mode, I doubt.

The role of the project in design education can be a very extensive one in that most aspects of that education - the development of social and technical (and creative) skills, and the extension of knowledge and understanding can be encompassed therein.

The role will obviously differ according to the stage of the course and the students relation to it. For a first year degree student different relationships - not just goals - will be intended and achieved from those of a diploma, postgraduate student.

Our sutdents are learning skills, as well as gaining knowledge and understanding, and therefore need to practice or exercise those skills as they develop. They are learning enactively, ikonographically and symbolically, both in that sequence and cyclically, but with emphasis on the first. This need to learn by doing is one of those met by the project mode as most people understand that. And despite all the various subject matters, settings, attitudes and approaches, there is at least general agreement that it involves an activity upon which one embarks and sustains until there is some

kind of explicable result. A proposal - a design - a report.... .

For reasons, perhaps, beyond the scope of this particular conference, in architectural education the design process is often even further removed from production and realisation than it is in practice. So that enactive learining for the architect (unlike the potter or sculptor) can seldom take place by experimental production of full scale prototype, at least within our present resources.

This means that we need a 'model' or simulation of some kind - again this can be seen as the project
and it is the nature of this
and the context for it
and the organisation and evaluation of it
that we are here to explore.

To return first to simple definitions: -
According to my dictionary, in 1601 a project was something put foreward for execution, a plan, a scheme, a proposal. By 1727 it included a draft scheme, a design or pattern, a mental conception of idea; a speculation, a contrivance.

Gulliver in Swift's "Voyage to Laputa" comes upon a Projector who "had been eight years on a Project for extracting Sun-Beams out of Cucumbers, which were put into Vials hermetically sealed, and let out to warm the air in raw inclement Summers". One is sometime thinkful that there is no real equivalent to Swift around these days, busy satirising our academic activities as he did the Royal Society's.

To the Construction-project-manager one suspects it means anything that can be managed - though not necessarily constructed.

At another extreme:-
I have brought some little booklets produced for The Project Club (1). After giving stimulating nuggets of information the authors set a "project" like this:-
"The architects of the Churcill Gardens scheme were extremely young when they were appointed. Find out how they won the commission to carry out such a large-scale housing scheme".

In a Research paper on Higher Education, John Rae and other authors have been to scrupulous pains to distinguish the project's salient features(2). These include being a simulation at some level of reality; having after collaborative activity a recognisable but not predictable result; and being mainly student inititiated. They come fairly briskly to the conclusion that little of what is done in architecture school is justly described as project work - with its primary emphasis on process, but is rather described as design exercise - because of its concern with product.

Later on they seem to get hoist on their own precision and concede that the hybrid "studio design project" contains convenient elements of both and is a useful term. They all do this with such erudition and good humour that I have no hesitation in recommending you to read their work.

'Projekt' is a term in such common parlance in the schools that it would be tedious to be too finicky in our distinction. However, you might like to come to some agreement about those listed salient features.

The nature of the particular project will depend on the vast number of variables to do with its authorship, and participants and time and space available, and their organisation.

Its learning context will also be various, Sometimes the project may be seen as way of diminishing the self-imposed disadvantages of institutionalising architecture and education. There are patterns - apart , of course, from appreticeships, part-time and sandwich education - which attempt to overcome the particular problems of remoteness from practice, like the Live Project offices within schools. Much has been written about the joys and sorrows of this arrangement, and of the atelier or teaching office, and the practice attached to, but not actually part of, a school, as at Cambridge.

There is also the occasional professional project work in which students and staff combine, such as that with Cedric Green in Sheffield, where they designed and built a Solar-house (3).

Traditionally teaching practitioners have used programmes based on their own jobs and have used supposed 'real world' criteria in judging them. The nourishing effect of the teachers own work is obvious to some of us. The problems of persuading other departments and University Academic authorities that this is so, are lucidly set out in "A Blueprint for Research and Consultancy activities" written by Douglas Shadbolt when dean of Carleton University (4).

The availability of research and development results for application in projects seems pertinent, with the ability of projects to help generate research and useful documentation. Apparently a great deal of Colin Rowe's written work began in project teaching frameworks.

Hans Haenlein at the Copenhagen Conference spoke of research being applied, developed and extended in the studio project (5). The work of Fisker on Housing, or Klint on chairs for their students at the Academie in Copenhagen are enviable examples of this. (The design and construction of a chair or other small artefact is an esteemed project in several architecture schools.)

The category of the community based and serving project activity I will leave to Kees Le Nobel to enlarge upon. I will only say that that can feel any satisfaction in this regard, as is the Archtectural Association, and contributions to the publication "A continuing Experiment"(6) show why they may be able, in Fred Scott's words, to "increase the vocabulary of intervention beyond suggesting adventure playgrounds instead of commercial developments".

I said earlier that to be too perdantic about the meaning of the term project itself is time-consuming but my experience leads me to suspect that many of us could afford to be a little more punctilious as far as the 'ends' of this work and the effectiveness of the means towards them are concerned.

Alexander Poe wrote over his grotto:-

> "And life itself can nothing more supply
> Than just to plan our projects and to die."

Now that implies a singlemindedness that few of us would claim! But if we are to plan projects we need to be clear about their constituents. I see them as proposals which will lead to a process, a product and a product description and having intentions, aims and objectives. Of course all these count for so much pretentiousness if the vehicle itself is poor or the ambience inconducive.

There is a Process which is to do with the development of the design, and the development of design ability. The extent to which we as teachers are able or obliged to intervene during design evolution is worth addressing. Ivor Smith made the point persuasively at the last conference that this is a partly private process and should only be invaded with great delicacy.

Nevertheless, if a major justification for utilising the project is that it most enjoyably nurtures this vital activity we can hardly abandon the student entirely during it.

Interest in results, we are persuaded, never conquers boredom with process. No artist can work simply for results. He must also like the work of getting them. On the other hand, "The worst error", according to Potter (7) is to take refuge in 'method' of 'process' at the expense of any practical commitment. Thus is a wilderness created by default, and argued for in retrospect by specious appeal to scientific method in the way the "problem was approached".

And the practical commitment is of course the product - often in the form of a building or place, and its communication - a descriptive analogue of that design such as drawings and models - the second meaning of product in this context.
I think it fair to say that we have tended to regard the 'product' as so symptomatic of the process that the judgement of the former fairly assessed the latter. This means judgement of the physical design if such be the outcome

of the project 'brief' and its description.

The disquieting but natural tendancy to regard these descriptions - drawings, models, reports as ends in themselves, inevitably sometimes results in a 'package superior to the goods'. They can and should be very attractive in their own right, but obviously an elegant drawing does not guarantee a desirable built form. In the "Memoirs of a Reluctant Juryman" Rayner Banham says "it seemed totally improper to me that anyone should pass judgement on a student ... simply on the basis of the finished product, rather than by looking at the educational process through which he was passing". To infer that this only happens in architecture is of course not entirely just.

(You will see that I have brought development sketches of some students at the Polytechnic to attempt to reveal their approach to design. You may wish to comment on what is significantly absent from those pages. Those of you who were at Paris in 1978 will know that Allen Cunningham took all the work of one student throughout her degree and diploma course emphasizing concern with the process and development of students.)

So we have these areas of the Project with no clear cut boundaries between - Process, Product and Product description, and then we have Intentions, Aims and Objectives which are usually of course considered first.

Intentions are usually to do with the design. The task to be performed; its subject matter or relation to society and to theoretical issues. Aims and Objectives are to do with the student's development through the project. Aims have to be declared, objectives should be capable of being met. In practice there is not unnaturally a tendancy to choose a project because of topicality or such reason, and then tailor aims and objectives to fit. Information should be available as to the objectives of each project but without being too explicit, for, however earnestly or wittily selected, such objectives can look over-obvious and arbitrary or deterministic when listed 'in black and white'.

It is for all this that the Project mode is felt to provide such a conducive context - with the growth of the ability to work with others with a relaxed co-operative relationship between staff and students.

> "By providing a vivid and often enjoyable exercise for the participants, and by the fact that it seems so relevant and presents so much complexity, it motivates them to greater interest in the subject. and leads to studies and explorations which are more valuable than the exercise itself."

Now one might have hoped that this was a description of the project mode but it is in Cedric Green's entirely convincing argument for gaming simulation in architectural education (8). He goes on to say that studio project work

is bound to involve over simplified relationships. However, one need not be daunted by that if one agrees with Stringer's claim that "the design studio is probably the most rich and advanced system of teaching complex problem solving that exists in a university" (9).

So here we have a pattern within which many variants of design approach can take place.

(Of course, some will say, if you decline to define it precisely, it is bound to be an all embracing portmanteau!)

Within the project, education may progress from the particular to the general (as demanded by Misha Black) or from the strategic to the tactical (encouraged by Llewellyn Davies) and back again.

It is a simulation of reality, a means of learning by doing. It can stimulate and be the reason for formal subject matter input or it can be the demonstration of the comprehension of that input. Procedures will involve analysis, synthesis and production, the how as well as the why of problem solving, or as Banham would prefer - solution spotting. The studio project is oriented towards relationships not merely goals.

Indeterminate, open ended problems, as are to be met within many spheres of life, enmeshed in value judgements and unforseen results can be addressed therein. A setting can grow to fulfil Cardinal Newman's ideal recipe for learning by "contagion, method and the natural creative drift of the mind".

The social ambience of studio project work prevents it from being seen merely us a preparation for life, but as life itself.

Are these the reasons why we may lie easy in our beds about educating so many in our schools despite it being a vocational course? Although wanting to outdo Illich in our conviviality we feel protective of our students' job opportunities in the present economic climate. But in these difficult times it is nevertheless true that students from architecture schools are more able to find jobs - in whatever sphere - than those from other disciplines. My conversations with Carl Henk at Copenhagen recently, confirm that this is not merely a local phenomenon.

All this can only take place comfortably, if the project is at one with the intentions of the overall course. For instance, the projects may differ according to whether the bias of the course is most strongly towards a broad intellectual education, or oriented towards the profession (not that these are mutually exclusive) or towards the most general diffusion of design ability (10).

The style and ethos of the course will effect the projects but does the structure whether it is year-based, unit or work base pattern, mandatory or course elective system, affect them much?

There are parallel patterns where formal teaching lectures and so on run along concurrently with design projects in the studio, or block teaching where they alternate one with the other, or courses which are project based to the extent that topics and subjects and needs for information are met as they arise. That is the theory. In practice very often they are a diluted hybrid of the other two, and not necessarily any the worse for that. It is in this type that a resolution of the difficulty of totally students initiated projects is found - involving staff making clear their interests and students joining them to form a working group, unit or work base.

One thing seems clear, the more free wheeling the whole set up, generally speaking, the more greedy it can be of resources, especially that of time.

In our little off-shore island we are becoming more aware - at last - of the need to husband resources. Human energy is of course one of the renewable resources but (unfortunately) it has to be bought, and in the present economic climate the 'imeasurables' of an apparently free-style educational pattern have to be argued for.

(I say "apparently free" since the obligation to do your own thing can become a kind of tyranny. You may know of the student's writing on the wall:-

"Do I have to do what I want to do again today?"

Whereas the challenge of arguing through and 'individualising' a brief set by another should be very rewarding. An argument again for a mixture of modes.)

So it is an opportune moment to explore closely what we are doing in a project-based course and to more ably exploit it and more cogently defend it.

In a sternly argued justification for changing to new arrangements at the Architectural Association School (AA) after twenty-eight years of project-based learning on a year system with staff-selected projects, Bob Garrett (11) also described the especial problems associated with project assessment despite John Lloyd's immaculate parameter charts. He had listed five parameters - mode of organisation, time, magnitude, complexity, and social value, and then tabulated their ratings.

Assessment of students' performance by and through projects and practical work is vulnerable to many sources of subjectivity, but if the quality of the process is important then it is no good ignoring it when we come to evaluation. But how should we assess the process, the procedure, the values, the changes taking place in the students other than their improving skills - their altered attitudes, their greater insight, their increased awarness?

To withdraw from making a commitment and judgement where the product is concerned is irresponsible, but diffidence where recorded judgement of the individual is

concerned is more understandable.

Should we shy away from evaluation of the elusive, the inexact, the ambiguous? The equivalent to "what cannot be measured does not exist" might be the equally cold "if it cannot easily be assessed don't let's do it"; should we not rather embrace "if its happening let's see if we can appraise it but rejoice anyway"?

This is not the occasion to plunge into the detail of assessment, but the adoption of project-based work does present a challenge, particularly in ensuring that the critical appraisal (crit) is still a creative and worthwhile learning occasion.

Whatever their work students will feel a deep sense of anticlimax with inadequate critiques or follow up.

The students will be asked in the programme (timetable) to submit work on a particular date (like some sort of miracle) for display and criticism.

The other shade of meaning to the word submission is not inappropriate - for it can be a very self-revealing, humbling, even harrowing experience.

To be a worthwhile occasion doesn't mean that the submission is necessarily a great success.

The student doesn't die with the death of his ideas, for as Kronfield said in his paper at Aspen in 1961:-

> "Our libraries are full of accounts of unsuccessful and fruitless attempts at problem solving. As guides for future investigation the negative results are almost as valuable as the accounts of our successes".

and the Society for Research into Higher Education:-

> "Even failure to achieve the overt aim of a project does not necessarily indicate that it has been unsuccessful. The Popperian principle holds here, that, provided we can use the information it yields, the falsification of our expectancies may teach us more than their confirmation."

(The fact that we must have expectations and intentions is not questioned. Indeed at Hull the students are required after confirming their project brief to enter into a 'contract of expectation'.)

At the Copenhagen Conference on research, Group A, through their raporteur, claimed that "Architects cannot discuss their mistakes - otherwise they will often land in court. This is why the development and research of what has been done seldom occurs".

Well what about teachers? Would we not learn a good deal from hearing what projects 'flopped' and why?

Professor Declan Kennedy speaks of the Integration of relevant subjects in projects. It is difficult to discuss

projects adequately without looking at the nature of their 'support' course.

"Project methods provide perhaps one of the few ways in which knowledge from different disciplinary traditions can be combinded... . Whatever it is that accounts for the partitioning of knowledge ... there can be little doubt that it has more to do with our convenience than with the facts of the real world. By setting problems in a more realistic context and by posing more complex problems than are likely to arise within a single discipline, the student can be required to integrate knowledge from fields which might otherwise remain unrelated ... . Integration must take place in the mind of the student, and project methods are valuable for providing the context for this integration."

Again I quote from the Society for Research into Higher Education (2) - about tertiary level education in Higher Education generally - not specifically architectural. Project can bring 'specialists' into a creative relationship with the students - but this opportunity is not always used. For a comprehensive survey of the problems in British schools in this area I highly recommend Margaret McKinder's lucid report on Materials teaching.(12)

In projects, where the student acts out being a designer for a 'real' building with an actual site, relationships are often simulated with the client and the users, but seldom with the builder, seldom with the financier or local politicans. This in itself is justification enough for the use of Games, which in a freely run course may help to overcome the inevitable mis-match between the formal input (including history and theory) and the 'studio work', so complained of in published form by UCL (Bartlett) students and unpublished form by most others! That is that information tends to arrive after the need for it. There is always a difficulty in practice of waiting to supply some information until it is generated by the urgent need to apply it. In some course-structures students may need to be convinced (by well organised 'input') that all information is relevant though not all is of immediate applicability.

The neat, and easiest to plan, arrangement of teaching so called 'principles' in formal 'taught' course, and expecting the tactics to be developed in the project does not always work well.

"In human experience the principles (if there are any) are subsequent to the discovery and solution of problems" (13) and again the project mode seems to be right for this, including as it can,the learining of new skills and evolvement of principles related to them.

One's attitude to teching about physical realisation will depend on what one's position is between 'technological determinism' (form as materialised performance specification) and passive instrumentalism (any form can be

realised somehow). For the former a vast amount of reliable 'information' is necessary, for the latter merely a means of retrieval, and specialist consultation. Paradoxily it is the midway-needing ready recall so that it seems intuitive - which is the most difficult to generate, but also fortunately the most rewarding.

In a paper to the Schools of Architecture Council, Allen Cunningham (Head of Architecture Unit, PCL) said "There is increasing evidence that not only does project based education fulfil its promise but as yet the potential has been barely realised."

Here at Berlin we may improve the documentation of that elusive 'evidence'.

There is one student and three staff here from the Polytechnic and you have received a paper from a fourth. No one of us, I am thankful to say, is typical. The Architecture Unit at the Polytechnic of Central London has what it terms a project-based course but prides itself on a variety of approaches, a plurality of people and philosophies. We believe this diversity is a symptom of fertility and "like rain in April, keeps the ground springy beneath our feet"!

We are a little wary of Professor Kramel's call for a unifying model. Nevertheless, I personally look forward to learning much during discussion of Professor Kramel's paper and the other meaty issues raised by Professor Declan Kennedy.

I am not very good at knowing how and where to stop once I've started - in many things, drawing, painting, walking and especially talking.

So I turn to Robert Graves 'In Broken Images' which fits how I feel:-

He is quick, thinking in clear images;
I am slow, thinking in broken images.

He becomes dull, trusting to his clear images;
I become sharp, mistrusting my broken images.

Trusting his images, he assumes their relevance;
Mistrusting my images, I question their relevance.

Assuming their relevance, he assumes the fact;
Questioning their relevance, I question the fact.

When the fact fails him, he questions his senses;
When the fact fails me, I approve my senses.

He continues quick and dull in his clear images;
I continue slow and sharp in my broken images.

He in a new confusion of his understanding;
I in a new understanding of my confusion.

My wish for us all at this conference is that at least we gain a new understanding of our confusion.

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STUDENT PROJECTS AND PRACTICE

Kees le Nobel
Vakgroep Stadsvernieuwing
Technische Hogeschool Eindhoven

In my discourse I am going to present to you an exposition of the way in which we, that is staff and students at the section "Urban Renewal" of the Faculty of Architecture at the Eindhoven Technical University, are trying to make a connection between student projects and practice and in particular how this has been given form in the B.A.B., which stands for Architectural Consulting Bureau for Neighbourhood Groups.
I have to note here that this way of working in not representative for the Faculty of Architecture as a whole.

First, I shall tell you something about the history of the section Urban Renewal. Then I will present our conception of education, connected with our understanding of the field of urban renewal, followed by a more precise description of student projects practised in our section, with a number of examples, with an emphasis on B.A.B. .
After that I am going to say something about changes in the organisation of education at the faculty of Architecture and what that means for our concept. I will conclude with remarks on the limiting conditions for student-projects as practised in our section.

To understand how our way of dealing with education has developed to its present form, it is necessary to tell you briefly something about the history of our section. In the late sixties and early seventies, urban renewal b ecame a major issue in government policy and politics. It would go too far to describe why this happened, but one reason is important: That residents of urban renewal areas organised themselves in action-groups, in order to fight against the deterioration of living conditions in their neighbourhoods as a result of government action or just the lack of action. At the same time, in 1970, in the wake of the student movement all over Europe, the Faculty of Architecture was democratized, with the important result that project studies were adapted as a key part in education. In '72, due to a particular government measure concerning the rent of housing, an explosive growth in the number of neighbourhood action groups arose. Many students, mostly on request, joined action-groups to give them support. This led to what was called "outdoor projects"; students used their project by studying issues which were at stake in the action.

As a result of these developments, inside as well as outside the school, a group of staff members, interested in urban renewal, and some of them active in community action, formed a working group on the problems of urban renewal in 1972. This later became the Urban Renewal Section, which I mentioned before. The aim of this group was to study urban renewal and to support and deepen student projects scientifically. About the same time B.A.B. was founded, I'll speak about that later.

In '74 Helga Fassbinder was attached as Professor of Urban Renewal and shortly later Hand Harms as Professor of Public Hourisng. In the meantime the staff has grown to a number of ten, including architects, a townplanner, a sociologist, an economist, a lawyer, a social-geographer and some urban renewal engineers of our own crop.

EDUCATIONAL CONCEPT

Now I come to speak about our educational concept which is built around student projects.
We regard student projects as the focal point of teaching, because among many other advantages, they have the potential to teach students to see and understand the problems they are working on, within the complex relationships to other problems.
By working on it they also gain an insight into the limiting conditions within which solutions have to be sought or are eventually possible.
For understanding such problems, it is essential to have knowledge of various disciplines. This knowledge has to be offered, or at least made accessible, through courses. The project is the designated manner in order to bring those disciplines into coherence within the context of the problem, being tackled. It will be obvious that in this concept there has to be a close coherence between the projects and the provided courses; in fact it implies that the courses should be aimed at supporting and feeding the projects.

To specify this concept towards our subject of teaching (urban renewal) I will attempt to make clear how we define the field of urban renewal.
We define Urban Renewal as:

- The process of functional and technological adaption the build environment to the demands of developing society - this includes demands on economic and public level (such as spatial needs and location of industry, commerce, offices and public institutions) together with the herewith connected service structures, as well as the demands of the reproduction structures of the population (like housing, collective provisions, recreation etc.).

Because we are not only concerned with functional and technical aspects, but also economical, political and social points of view, and, at the same time, with the wear and tear of structures, we see technical progress and changes in the coherence of functions of the different fields as running their own course and as being dependent on conjunctural movements to a certain extent. Urban renewal, therefore, appears in different forms: ranging from modest modernization, (that is technical renewal of the build environment and the adaptation of the existing level of equipment) to big scale restructuring and intensifying of land use (by demolition and planning of new structures).
At the same time, these processes take place within the field of tension of economical and political discussion and are, therefore, never purely technically or functionally determined. Furthermore, they always have political im-

plications and orientations towards specific interests where no matter-of-fact argument is free of subjective thinking, however objective it may seem.

Urban renewal is a task which is very different from the task of building extension areas. It follows its own laws and difficulties and has its own demands on technology and proceedings.
The social and political dimension of urban renewal is not only the outcome of the planning, but it is also a factor which defines the whole process with its own dynamics. Inhabitants and users are not merely the object of planning, but their cooperation with planning and the proceedings is a necessary part of urban renewal. In urban renewal, seen from this point of view, social housing policy, as well as other fields of government policy (like education, medical care, recreation, etc.) has to be taken into consideration. Demands on integral planning are based on the totality of 'knowledge of life' of the existing or future inhabitants.
For this complex task, the classic architectural education and the newer planning education, has prepared their students insufficiently. Therefore, we have developed an integral concept of education, orientated on the complex problem analysis and problem assimilation in projects, in which especially the cooperation of architecture and town planning and their interdependency with political, social-economical and cultural factors in the field of urban renewal is the subject. Besides, in the last years, new professions have been developed such as coordinator of urban renewal projects and consultant for neighbourhood groups as they are appointed in many places by the local government (coming to our attention as a new goal for education).

STUDENT PROJECTS

Now that I have explained the basis of our educational concept in its connection with urban renewal, I will come to the subject of my speech: student projects.
The student projects, as practised within our section, are so-called free projects, which means that students are free to chose their subject of study and to plan how to proceed, often in consultation with the staff member they chose for accompanying the project.
We are strongly in favour of projects which are in relation to daily practice, either in the form of students working for some period as learner in practice or in the form of supporting community action, and in fact most of our students do so.
The advantage of this is that out of this experience students in practice get insight into how problems appear in practice, in what context they appear and how people involved in these problems experience them. Bedides, by working on these problems in practice, students learn what skills and knowledge they have to develop to cope with them.
Then, in their project, they have the opportunity to study it, to sort out what the background of the problem is, what the limitations are within which a solution can be sought, and to chose the courses they need

to tackle the problems.
When the practice consists of supporting community action, the results of the project are mostly used to be able to support those actions better. I'll come to that when I tell you more about the B,A.B. .

Student project-groups consist mainly on an average, of about four students, with one staff member to accompany them. The role of the staff member is to advice about how to deal with the problem, how to analyse it, how to plan the proceedings of the project, what sources in literature are to be used, what methods are to be followed, how to divide the work among the members of the group, etc., and of course to evaluate the project together with the students. There are differences in projects, depending on the phase of study students are in. After a basic year, which is the same for all students in the faculty, they start with projects at one of the various Sections.

The first projects are mostly aimed at gathering knowledge and insight. Later on, projects become more research-like. At the present time, research in our section is becoming more structured. We are trying to connect student projects with our research programme. In weekly platforms, we have organized study methods. Results are discussed in a plenary meeting of all our students who are in the finishing phase of their study.

We prefer projects to be group work, because in discussion with each other students can reach further; by dividing tasks they can span broader fields and they get trained in working as a team on a problem, as it is more and more usual in practice, certainly in the field of urban renewal.

For starters in urban renewal projects, we offer the possibility to join an orientational project. Starting from one or more cases in practice, we try to give to students who are interested in urban renewal (but have too little knowledge of it to know where to start) insights into the problems as they appear in practice and to give them a hold (connected with their particular affinity) so that they can start a project themselves in the next semester.

DIDACTICAL METHODS

Complementary to student projects we offer courses of different forms.
First, we have normal lectures, some giving a synopsis of the field of urban renewal for a broader public than our students, some introducing a certain field of knowledge systematically.

Secondly, we have seminars in which one or more specific subjects are studied to deepen knowledge. These are mostly in the form of reading papers on the subject and discussing them. The meetings are prepared each time by a small number (two or three) of the participants.

Thirdly, we have exercises, in which students can

systematically practice skills they need for their projects and practice.

And forthly, we don't yet have project courses, but we intend to start with it in a short time. By project courses we mean short courses, to inject knowledge which is ready available into projects to prevent from students having to collect this knowledge by themselves (which often slows down the proceedings of their project). We regard these courses as part of the project.
It will be obvious that this way of using several types of courses, just as the variety of problems tackled in the projects, requires a multi-disciplinary staff.

As mentioned above, evaluation is done by the students together with the accompanying staff member. Subjects of evaluation are:

1) The result of the project: Is the goal reached? Is the quality sufficient? Was the methodical set-up the right one? etc.

2) About the way of working within the group: Did all members participate equally? How was the cooperation within ghe group? What conclusions can be drawn from the experience for future projects?

Most times the evaluation concerns the group as a whole. Only in exceptional cases, when a member of the group does not do his share in the work, does not appear for appointments (and things like that), he or she may be excluded from getting marks, but normally such problems are redressed in the course of the project.

EXAMPLES

Now I will present some examples of projects.
First the orientational project last semester.
With a group consisting of seven students, we decided to investigate an urban renewal area in Rotterdam.
From literature - articles in professional papers, reports etc. - and through paying a visit to the neighbourhood committee, problems which were occurring were sorted out. Then, on those problems, we investigated what measures were planned, how and by whom, and on what grounds they had been decided and what were the limitations they had to confirm with. This led to discussions about the reason for those limitations and the policy behind it. Thus the students got a view of the complexity of the problem and the difficulties involv ed by finding solutions.

Another Example:
Students, having found out that housing corporations seem to play an important role in urban renewal projects, started a project on housing corporations. They investigated in what forms of housing corporations exist, what legal positions tenants have in those various forms, what the possibilities are for a housing corporation to follow its own policy. They discovered that any form of housing corporation was firmly tied to government regulations, which lead to the conclusion that there was no perspective in it for a tenant organisation to try to gain control over the housing corporation, in order to get a hold on rents and the quality of the houses.

Next ecample is a project which is more specific in its form. This one is called "Project Eindhoven" and it has existed over a couple of years. In it, participate students of various phases. This project is fully integrated with practice in the sense of supporting community action, in this case co-ordinating committees in Eindhoven on several subjects (such as rehabilitation, restructuring of traffic, housing shortage, etc.). In these co-ordinating committees, various neighbourhood committees are represented and their aim is to fight together for the solution of the problems they share. Support for those co-operating committees is done by the project through studies on various subjects, which results in reports, fundamental criticism, alternative plans etc. The committees then use these results in their actions, mostly on the level of local government. Through the years, the composition of this project changes, as some students leave and others join the group.

DESCRIPTION OF B.A.B.

As the last example I will now describe in more detail, the B.A.B. (which stands for, as I said before, the Architectural Consulting Bureau for Neighbourhood Groups or in Dutch: Bouwkundig Adviesburo voor Buurtbewoners).

The B.A.B. was founded in 1979 as a reaction to experience with the outdoor projects. These outdoor projects supported one neighbourhood committee. Basically, the experience was that most committees, at that time, had a very limited goal, such as refusing rent raisals in order to achieve maintenance for their houses. A group of students found that supporting such committees was a waste of time in two ways: First it gave too few possibilities as an object of study, after some time all the "ins" and "outs" of the action were known and the only thing that remained was stencelling pamphlets. Second since there were many committees asking for support, it was well possible to support a number of committees at the same time.
For these reasons, the founders of the B.A.B. decided to support committees only for a short time, and only to work on the questions put forward by the committee. When the job was done the B.A.B. had to withdraw its support.
The advantage of this way of support had two sides: First: A variety of problems had to be dealt with, thus broadening the field of study.
And second: Out of the experience with many committees, the B.A.B. was able to pass on experiences from one committee to another, which meant a support in strategy.
Consisting of twelve students, all in the same phase of their study, (second and third years), the B.A.B. needed no formal structure in the beginning and the work consisted mainly of gathering the knowledge necessary for supporting activities in the projects.
But after a short time, the B.A.B. grew to a number of over forty students, spread over more phases of study and with different amounts of experience in supporting community action. Also the number of requests grew. Now a formal structure was needed. After many discussions, a basic model concerning the relationship between learning and support was formulated on which a formal structure was based. The basic model was this: supporting

practice would point out what knowledge is needed and what studies had to be done. These studies would enable the B.A.B. to give better support and could strengthen community action. Working on the practical level of support would lead to a better insight into problems, which had to be worked out in projects, to reach a more theoretical level, which was needed to bring community action up to a higher political level.
Collectivization of experience and knowledge had to have priority in order to bring all members of the B.A.B. to the same level as far as possible thereby making discussions more effective. The structure based on this model is as follows: The work was divided into support and projects. For every request for support, a small group was formed, consisting of "older" and "younger" B.A.B. members.
Project groups were formed, on the basis of the interests of the participants, to work on subjects that, drawn out of practice, were found to need further study. Weekly plenary meetings were organized, on which new requests for support were discussed on the basis of criteria for acceptance, which in their turn were formulated in the course of such discussions. Also experience in supporting practice were discussed and, from time to time, the progress and the results of the projects. A core group was formed, which had to prepare the plenary meetings.

Decisions were taken by the plenary meeting and every member of the B.A. B. was equally responsible for all proceedings. At the end of each semester, an evaluation day or weekend was held, to staighten out what had proven to be wrong and to decide what subjects had to be studied in the next semester. Once a year, an "open day" was organised at which all committees for which the B.A.B. had worked were invited, to discuss a theme that was important at that time (new laws, for instance) and to exchange experiences in action.
I think that it is important now to underline that the B.A.B. is a student organisation which, as such, is independent from the faculty or the university. The school is only responsible for the educational part. The B.A.B. has the full responsiblility for the support part. Or, as formulated once when the authorities from outside tried to stop B.A.B. activities in a community: The school never can take responsibility for what students do with the results of their studies outside the school.
Before I enter into a brief evaluation of B.A.B. practice, I shall first give you an idea of the variety of problems and questions that the B,A,B, encounters in supporting community action. These are:

- renovation (=house improvement);
- replacement of old houses by new ones;
- legal questions in the field of housing and planning;
- technical research and advice, for instance, on quality of heating equipment;
- the making of alternative plans;
- questions about rents and rent raisals;
- squatting (because of housing shortage);
- questions about noise annoyance by industries, located in housing areas, etc.

EVALUATION OF B.A.B.

I think this summing up will make clear, that the knowledge needed for working and studying as practised within the B.A.B. is very diverse. It ranges from government policy, planning and law to design and technical knowledge. This provides for one of the problems that members of the B.A.B. have to cope with: a lot of time is needed to learn all these things, while supporting action groups. And running an organisation like the B.A.B. takes a lot of time,too. One of the major problems of the B.A.B. is lack of time. (That is the reason why there are no B.A.B. members present here).
I estimate that B.A.B, members spend about sixty hours a week on B.A.B. activities and, in some periods, even more. There have been cases of slight stress!!

Another problem, which all student organisation have, is the constant change of generations. It takes quite a long time before younger members overcome their feeling of being inferior to the "establishment" or older members. To smoothen this out, the B.A.B. provides for an introductory project for new members, in which basic knowledge for working on requests is offered and in which the subjects of discussion in the plenary meetings are introduced. Along with it, the new members are introduced to working with action groups by letting them participate in supporting groups from the first day on. Also a problem is the question of how to pass on the knowledge and experience that has been gathered over the course of time, while for older members the need to repeat discussions in order to level up younger members is hampering their own development.
Another problem, one that endangers the continuity of the B.A.B. is the decrease of the number of its members (At present there are only about a dozen). Over the last two or three years, the average inflow of members is insufficient to cover up the outflow of members who have finished their studies. One of the reasons may be that political motivation, which is an important reason to study within the B.A.B., is less present in the younger generation of students (but we are not sure of this).
The most important reason is undoubtedly that the system of education changed drastically one and a half year ago. Until then we had a very free system. After their first year students had to spend a minimum of one third of the week on lectures and exercises for which, apart from a few obligatory lectures, they could chose freely from a vast offer. At the same time, teachers were free to offer lectures etc. as they wished. Students were free to spend all the rest of their time on projects, with a minimum of half of the week.
In the new system the time for projects is limited to half of the week, while there is a vast number of obligatory lectures and exercises together with a strongly decreased / range of free choice. When using the maximum time available for projects, there is no time at all left for a free choice of courses. On top of all this, the second and third year phase (the fourth and fifth are the phase of finishing studies) is divided in three so-called mainstreams called planning, design and materialisation, which each have a different programme.

Urban renewal does not fit into this model, and neither does our concept of education. It is obvious that studying within the B.A.B. is even more difficult. Only at the price of lengthening their studies can students choose for studying within the B.A.B.. And there are few willing to pay this price. I love them.

Ladies and gentlemen,
I do not want this speach to end in minor key.
I think that it is clear that I am strongly in favour of the model of education of our section of Urban Renewal, and of the way in which it has taken form, especially in the B.A.B. And so are my colleagues in this Section. It will be clear too, that we are strongly opposed to the new model of education that is imposed upon the faculty by the majority of the staff. But there is also a strong opposition from colleagues of other sections and a majority of the students.
I am not confident, but I hope that we shall succeed in altering this model into a more moderate version in which the advantages of both systems are united. If this does not happen, it will surely put an end to student project-in-practice.

Because for a free studies programme of projects connected with practice (of any kind) there is a need for time, a free choice out of a large and varied offer of courses, and acknowledgement that problem-oriented studies have equal rights with traditional studies and, last but not least, the acknowledgement that students are grown-up people.

PROJECT-ORIENTED STUDIES

Peter Jokusch,
Professor, Organisationseinheit Architektur,
Gesamthochschule Kassel

Some people say that there is nothing special with project oriented studies in architectural education as the project is and has always been the focus of all the creative work of architectural students. But I think that most of us agree that we only speak of project oriented studies if the whole curriculum is essentially offered in forn of projects. This must mean the integration of formal learning of the basic facts and skills into the project work.

The teaching of archtiecture has always been based on the master-scholar principle with a very high orientation of the whole architectural education around design and synthesis, a transmission of knowledge nearly explicitly via design projects, a more intensive relation to teachers with a quasi-paternalistic dependence of students on their teachers and a closer relation to practice as professional behaviour. Value systems were transmitted via the living example of our professor and much of our skills and abilities were designed to suit immediately the current practice.

The teaching of Architecture has not been a subject for the educationalists. Architectural teaching methods have been developed by practioners in a pragmatic way. Only when the idea of project-oriented studies came up, did architectural education profit from didactical concepts developed by educationalists in other departments.

The reform of curricula started in the time of student unrest in the late sixties in almost all the faculties and schools, but one cannot say that project orientation was the central strategy of this reform. In various faculties, the objectives intended with project orientation of courses were fairly similar as they all emerged from the criticism of existing patterns and contents of education and of the meaning of cognition.

Criticism of higher education focussed on:

- the seperation of scientific theory from practice in social life,
- the disintegration of different disciplines,
- the uncritical orientation towards problems of practice and
- the self-limitation of certain domains of investigation by rigid frontiers between the subjects.

The objectives of POL (project-oriented learning), 10 years ago, were: (quoted from the Federal Assistant's Conference publication: Research oriented learning - a scientific examination):

1. Projects must be oriented towards a problem and designed for its solution. Rational and methodic work on a complex problem demands scientific methods. Project work should be open-ended and innovative, i.e. research orientation. Project-oriented work must be interdisciplinary to make sure that there is pluralism of the methods and approaches and that we overcome inherited barriers between seperated subjects.

2. Projects must be practice oriented (practice could be the starting point, a level of integration, a field of experiment and trial, and a feedback for revision of hypotheses). Relationship to practice should enable conscious reflexion on the social relevance of education and on future professional activities including behavioural training. Project work must have relevance to society: central questions of projects must start from a socially relevant problem (as a sort of necessary corrective for the professional domain) and must make particular conflicts in society the subject of investigation.

3. Project work should enable self-determination of students - they should be able to execute academic freedom in organizing learning strategies, topics and methods of study themselves.

4. Project work must be group work, a collegial occupation with science while social learning, motivational problems and group dynamic tension must be made a proper subject to the work of group members.

5. The basic form of learning should be research-oriented project based. From the beginning, studies should be (wholly or partly) executed within research processes or in close cooperation or affiliation with them. That means that the students can take part in the process of cognition, can help to innovate and advance knowledge, but this includes all risks, frustations, time losses and failures through which research can go.

6. Another form of project-oriented learning is called genetic in that the student does not consume results and facts but goes back to the basic question and reproduces the genesis of scientific findings himself, but without risks mentioned above.

7. Finally, there may be critical learning that goes back to the central questions of a science, its theoreis and methods and takes it as a research topic itself, but looking into history, sociology and didactics.

If we now draw a matrix to see how far other forms of learning can compare to project oriented learning we see that traditional forms fail in some aspects:

objectives \ learning forms	project-oriented learning	doctoral thesis	practical course	tutorial class	lecture seminar
1 research orientation	+	+	−	−	+
2 practice, links to reality	+	−	+	−	+
3 self-determination	+	+	−	o	−
4 group orientation social learning	+	−	o	+	−

In reality, project oriented work will show a continuing transition rather than polarity in the fulfillment of objectives.

PERMAMENT REDUCTION OF AIMS

If we look into the history of project-oriented studies at least in my country, so to quote Becker, we can notice a permanent reduction of practical aims:

- During the time of student unrest real working relations aimed at the immediate links between scientific work and political action and the application of science against dominating interests.
- In the early seventies the claim was just to link education and professional practice.
- As the next stop of reduction of claims we gave up the relation to social theories so that projects were understood only as didactical principles and the project-oriented studies became a didactical model for the organization of learning processes.

And to quote Becker again (1972):

"Project orientation of studies should mean a specific strategy for the solution of problems which occur within the processes of socilaization and qualification in the university system."

ROLL-BACK

Our profession has gone through an occupational crisis in the last few years, the result of which was that the profession was touchy about multi-disciplinary work and claimed that a restriction among professionals and schools of architecture was necessary to revert back to the "genuine and original tasks" of the architect and planner. Strangely enough, this has created - in many schools - a climate of competition and discrimination among staff. So design is in again - scientific method is out ; multi-disciplinarity has only been experienced as a waste of time; and technical knowledge - and professional conduct - are increasingly important.

Stragely enough, this is not only the case in architectural education, but seems to cover all other departments too where project oriented studies are still

(formally or informally) part of the curriculum.

CRITICISM

Since in the early seventies project oriented studies have started in many schools, there has been already a lot of evaluative literature, criticizing it. Some of the aspects discussed there should be mentioned here, together with my own experiences and that of many other people with whom I have had a chance to exchange ideas. Let me now analyse:

- how far we have got in achieving or reducing and abandoning these goals;
- what are the most severe obstacles and
- who are the enemies of project oriented studies.

We did not all come here to show how good we all are and how successful project oriented studies are, but we should also state where the problems of project oriented studies are, what weaknesses and mistakes can occur and what can be done to rescue, to stabilize and to improve project-oriented studies.

LINKS TO REALITY

Problem definition, problem seeking is one of the basic and most important tasks for successful project-oriented studies. Problems to be solved by project work should be analysed in and taken out of a social and political context and should take notice of as many aspects of reality as possible.

The student must experience himself and reality. This can take different forms during his study. Experiences of self and reality means to get rid of individual and class related constraints and restrictions of perception. This perception concerns the reality of our society as well as one's own needs and conflicts in their psychosocial relativity. This means that we have to be very good as teachers in environmental analysis, perception and assessment of environmental elements. But on the other side we must develop skills of educational psychology if we really want to help students.

Project orientation means an orientation towards real cases and so a link to practical and political decision-making processes. This orientation to cases implies the danger that scientific systematic questions are of secondary importance and that planning sciences is graded down to purely decision-making and action techniques. The dominance of cases and problems has primarily motivational virtues. Systematic supply of knowledge and theory can be provided even under these conditions.

With that it is impossible and not necessary to learn in an encyclopedic way, but project-oriented learning should be focussed on certain learning items in an exemplary way and, by all means, the learning matter and method should b e closely linked with the problem to be solved in the project. The increasing number of special subjects within a curriculum is put into a context recognizable by the student as project orientation.

A complete and systematic explanation of content of different subjects is no guarantee that the students absorb this knowledge fully (and that they store it) and know to apply it.

New knowledge will be easier and more lasting if it is offered to answer a question which student have developed themselves and which can be tested immediately in a practical application.

A lot of arguments among staff can be heard about how to introduce newcomers to architectural education. While traditional curricula offer theory first and apply the theory then in projects and practical experiences, project- oriented studies do it the other way round. They start the studies right away with practice and theory.

Professional competence must not be pre-assumed by those who do a project but should be obtained during the work on the project. But again, many staff colleagues question whether or not we can really waive the systematic teaching of basic knowledge before a successful first student project. I think our way of learning and professional practice needs an inductive approach, as we are only a partly-systematized science. Systematized sciences (like Mathematics) can only operate on the basis of a stock of knowledge, information and insight. Inductive work is possible but not effective. Our work is close to the action sciences. They can be introduced from cases; they must be built up every time new from the phaenomena of reality.

CONFLICT: REALITY AGAINST THE PEDAGOGICAL INTEREST IN THE PROJECT

Life projects can be fascinating when it comes to define a problem or to make participants aware of their chance to participate or when it comes to stop an unfair official planning and to impose a different approach. But there may be very time-consuming periods where real life projects are rather dull and uninteresting and do not stimulate much motivation under the students. It may also be possible that life projects in certain periods do not have much educational importance so that students may get frustrated in not-having a chance to learn and to advance in awareness and skills.

Teachers, therefore, can get into some trouble by letting students choose their own problems as topic for a project on the one side and, on the other by being obliged to guarantee that the chosen problems give every student a chance to study with the necessary depth.

PROJECT WORK MUST BE USER ORIENTED:

The reflection of objectives of the society on the building and planning activities cannot be replaced by the common formula of user orientation. So often it is not clearly defined who is the user and there may be sometimes wishful thinking about the pure needs and ideas of users and people concerned by the problem.

Again, the critics of project orientation say that it has not been relfected enough: in what ways the needs of society and of people immediately concerned can be catered for in the project. So a reduction of the objec-

tives of planning down to wishes of people concerned must inevitably lead to unrealistic ideas and results from students.

Users and other people concerned with the problem of a project in real life normally play an active role in the project work. Some groups of students are extremely closely linked with the users, but one can notice that students interests are restricted to certain part of analysis and planning or to their personal academic qualification, e.g. in a project on humanising the environment for disabled people.

The problem was solved on paper. The little hope that the disabled had got from the initiative taken by the students was immediately gone and changed to rather severe frustrations because the students went away, devoted themselves to other projects and did not continue to cooperate and to help.

The disabled just felt that they were being misused to help students to get their diploma. This is a very sad role users can play in students projects if there is no mutual social obligation and if solidarity between students and users is superficial and only goal-oriented.

In this respect I think that social workers have a much closer contact with their reference population. Here a contract can be signed between the university and the social-care office of the town in order to guarantee that both purposes (real help for the users and academic achievement for the students) are equally persued.

Commitment of students to users is necessary but the study situation must not change into a working situation. At some time, student activities must find an end. Therefore, the abilities of self-organization must be transmitted by the students to the users and all those people on whom students have influence during the project.

CONTINUITY

Continuity has many aspects in project oriented learning: Continuity of personal development can be guaranteed by students who take their personal curriculum and their exams personally in their own hand.

Continuity of topics and problems: So many projects in reality - specially when participatory processes are involved - take much more time than students can devote to solve the problem, especially when it comes to diploma thesis projects with very small groups (or even single-person projects) and restricted in time (ours is for example only twelve weeks). Here continuity can only be guaranteed if various student groups interact in a swquence over the total peirod of the life project.

REDUCTION OF COMPLEXITY, DECISION-MAKING SIMULATION

Students may, in the analytical phase of their project be pretty close to reality and really find out the whole story, but they always have problems in finding out the feasibility of their solutions, because the decision-

makers in reality refuse to take political decisions only for the students sake, especially if there is a solidarity between students and the have-nots in the power play.

There may be a permanent tendency to withdraw from reality in order to reduce complexity of a problem for the sake of academic progress:

If the real decision-makers connot or do not want to take part in the project, students must simulate decision by role play which normally gives a certain irreality to decisions. Specially when students have learned about planning theory and logical sequences of planning and decision-taking, I see conflicts between the logic of planning in student projects and the political dynamics of decision-making in real projects.

I see a lack of obligation towards real constraints for the search of solutions within students projects, but sometimes I encourage students to omit restrictions and contextual conditions of real professional work. This is especially necessary when students are very young and it is seen as a bad thing to obstruct their creativity by too many constraints.

EFFECTS ON PRACTICE

The result of project work should not only be an academic qualification for those who took part in the work but the result should also aim at helping the social group which is concerned with the problem in reality. This may also lead our discussion on to the project results and the effect these results have on current practice. We tend to draw a distinction between project reports which are process-oriented and those which are result-oriented.

The process-oriented may document what has been done by whom, when and why. So often project results (as a document and product) are rather dull to read as they are a documentation of the process and the self-justification of those who feel obliged to show that they have been busy even if they only show poor results.

As the students also have to show professional competence and to make sure that their findings are the result of a theory and applied methods, the language may be academic, stiff, full of professional or scientific jargon and, in that respect, not easy to comprehend by users and people really concerned with the problem.

The result-oriented may show what the solution to the problem is and what can be done with it in real life. The virtue of result-oriented projects may be that they can find a verbal code that can be easily comprehended by non-specialists and users, and insofar be a real help in social life, specially if project results have the form of a pamphlet that is really designed to change the world.

Many projects with good results support the have-nots among the users. They imply political power because

official planners and politicans do not want to learn the lessons that emerge from project results, especially if these results support criticism against forms of official planning.

Sometimes, one can notice that official planners get extremely angry when they first take notice of project results but, a short time after that, one can realize that these same officials have usurpated students' ideas and approaches and they may even shamelessly say: "This is in fact what we always wanted".

Again so many projects remain fragments of the whole solution:

- maybe because the students did not cope enough with the complexity of the real problem,
- or that they had to finish their studies in premature stage (because the time devoted was limited),
- or that for group dynamics reasons too much energy was spent, within the group,
- or because learning how to apply a certain method seemed to be more important and fascinating to the students than the obligation and the responsibility of students towards the users with the context of the results.

Many projects even with good results may be very static in the sense that they have no suggestions on how the good ideas could be implemented. To a certain extent this may not only be the result of time shortage and differences between students time and real project time, but it may mean a lack of awareness and skills concerning implementation in general. I think this is a matter which cannot be taught by project work but which could better be learned by personal experience in professional practice.

The obligation of students to users cannot be that of real professionalists, especially in cases where student groups take multidisciplinary approaches to their project which are not normally covered by professional standards of conduct. This means sometimes that students are inventive with their approaches and criticise the every-day limits of competence of the real professionalists but the users may not be convinced that the approach, taken by the students, really shows reliable results.

So the closer the students commit themselves to reality the more the users expect professional excellency - or: Students are educated and controlled by practice and real life contacts rather than by their teachers (e.g. B.A.B. - Eindhoven).

Project-oriented studies can more easily and more effectively absorb the needs of professional practice into the curriculum. In this respect, we felt a certain amount of competition between project-oriented studies and guided

practice in offices. But we still see big differences in that students in project groups are more self-determined and less obliged and committed to users and professionalists.

MULTI-DISCIPLINARITY

I would like to draw a distinction between project-oriented studies and design projects in conventional schools of architecture. Project orientation should always start with a complex problem in need of being solved, and a multi-dimensional way of solving it. Students should learn about as many as possible different ways of analysing problems and assessing the real nature of problems.

If we take it seriously that projects should be problem-oriented rather than subject-oriented, the proof of this can be that more than one subject must be called upon in the solution process of the problem.

This pre-assumes that staff from different subjects of the same department and from different departments agree about cooperation. This is in fact not normally the case. In the last couple of years, we have seen that more and more the formal barriers between subjects get rigid again and that not even within one department is collegial cooperation very popular.

STAFF COOPERATION PROBLEMS

Multi-disciplinary research is increasingly important, but so often the group members do not come from different departments of the same school. A definition of social problems by architects themselves is for some sociologists the worst that could happen. There may be some sort of collegial arrogance that calls other people's efforts 'amateur approaches' if they try to apply methods from the other side of the fence. Generally - multi-disciplinarity has officially been proclaimed a failure - however, individual cooperation between disciplines is extremely innovative.

STUDENT COOPERATION IN MULTI-DISCIPLINARY PROJECTS

Even if there are problems of staff cooperation in multi-disciplinary projects, there may be mixed student groups from various schools and departments. This has particularly been encouraged in joint projects by putting architects and urban geographers, town planners and social workers architects and economists together. There have been extremely successful projects but there are problems of coordination like the difference between course structures in different departments and schools if we try to achieve multi-disciplinary cooperatiom of students. Students may have extremely different past experience, the project work may have a differing emphasis within the different courses and the time patterns of these courses may be in conflict. Architectural students can devote say 25 hours per week for the project while social workers only can spend 8 hours and have a rigid time-table while architects have more freedom of (individually) devoting their time to certain learning tasks.

CONCEPTUAL DIFFERENCES BETWEEN GROUP MEMBERS

Or, more general, there may be different concepts of what is a project and what is problem solving and planning.

I remember a project which was jointly undertaken by architectural students and social workers and concerned with the housing problems of the homeless, where architectural students wanted to solve the problem by changing the cause of homelessness by political means while the social workers had a more therapeutic approach to the problem and only wanted to cure symptoms and to ameliorate physical, psychological and social conditions. The social workers had close personal contact with the homeless people, the architectural students only talked about that and hesitated to go there and to talk to these people and share their life.

Conceptual differences may be extremely fruitful for the complexity and quality of projects - and some students change their courses as a result.

SOCIAL LEARNING AND SELF-DERTERMINATION

One very important aspect seems to me the question of project initiation. Everybody who has tried to define a problem and then to solve it will know what an important skill it is to be able to define a problem and the means and processes to solve it.

Normally there is too much time wasted in finding a problem and in making an approach how to solve it and to organize physical and informational conditions for a project.

Also the whole question of structuring the work of a project group, of finding the right number and kind of people in a project group to collect and structure an adequate amount and quality of information, as well as to find the right caliber of advisors and experts and to make sure that they devote enough time and let enough information flow for the benefit of the project.

There may also be conflicts between different members of groups because they have different objectives and interests. They want to find out different things, and in their personal learning biography they want to solve different personal problems. So therefore the motivation of certain students to take part in certain groups may be entirely different although they may be all very interested in the problem and the matter itself. So it will be necessary to make these motivations explicit and to explain to students that the orientation of the projects demands a certain emphasis.

We found that student groups should not be too homogeneous in only having one age group. We specially encourage students of different stages of progress within their studies, and we also try to invite students to create mixed groups where students mix from different schools studying different curricula.

On the other side, homogeneous groups of students have no inner tension and may lack energy and challenge of problem solving or the students may want to solve a new problem which in fact is too similar to the one they have already been solving.

Project groups must not be isolated, and groups must not replace families. Therefore, it must be avoided that groups form a privatistic closed sub-culture of isolated individuals.

Students have changed in the last ten years. Until 1975/76 students came to project-oriented studies because they claimed self-determination and they had a political emphasis in objecting against authority, even that of teaching staff. Today, they may so often easily ask for a teacher as their pseudo-father and those teachers who have a charismatic personality are extremely popular.

There may be forms of power among group members by imposing dominance of some and sub-ordination of others; there may be discrimination among group-embers especially if someone is disabled in some way or other or has specific deficits in his skills and abilities.

A question of leadership and inequality of group dynamics amoung group members can always be noticed in the project groups. Leadership in groups is certainly something which should be learned too and should rotate among group members. But taken into consideration the personality structure of students, many of them are only too happy if someone takes initiative to lead a group and to organize the process of work.

Staff may streamline the progress of the group and may try to avoid wrong ways of direction for the project.

The regulations make staff even more and more responsible that project work is a success and that students do not lose time. A couple of years ago we would have officially said that a breakdown of a project is something from which students can learn quite a lot. Nowadays, we must not say that any more, and so students will never experience full personal responsiblility for the success of a project during their studies.

So this brings me to the question of cooperation between students and teachers during projects. While students may devote two thirds of their time during the normal term weeks to their project, staff members tutoring this project may be lucky if they can spend more than one afternoon per week. If we insist on cooperative work among the staff (and if we continue to critizise staff coming only shortly into the studio and "correcting" students' progress), we must b e able to devote enough staff time for cooperation. Time structures of project work should not only be focussed on staff abailability but staff should (for social dynamic reasons) try to be available when the majority of the group wants to gather.

Of course, the staff cannot deny the role differences between students and themselves. There will be role conflicts if staff tires to be good friends with his or her student group. Staff may be even personally ambitious to push the project in a certain way and may misuse the project group to follow his or her ideas.

PROBLEMS OF INSTITUTIONALIZATION

To institutionalize project studies demands an organizational pattern which seems vital for successful performance.

First of all, we have the project groups. These groups work self-contained at their own risk. They organize themselves and are responsible for themselves. They may be constituted from various departments. They work either autonomously or under scientific guidance. Communication among project groups helps to avoid that groups become a family soroughgate for students, it also helps the recognation that learning is not an autodidactic trial and does not circulate around the groups's own dynamic processes.

The coordination of projects must be organized. Therefore, many schools have project offices, changed with public relations, with documentation, with inception of projects, with the provision of information materials, with the organization of multi-project teaching activities, etc.

Plenary sessions for project groups should be organized at least every fortnight during term time for the exchange of experiences, publication of results and negotiation of daily coordination problems. Again, this may be a forum of self-criticism and defince of the basic objectives against unfriendly people outside.

Many schools, even if project-oriented, have formal teaching as well, but via the project office and the plenary session the seminars and formal courses are planned so that their content relates to as many parallel projects as possible. So then, the project work is not the only, but the basic form of work:

- theoretical and systematic aspects of scientific, technical and artistic disciplines should be learned and taught primarily in the form of seminars and courses whose outline should be oriented to the problems of projects as nearly as possible. Theoretical and systematical learning should focus on those skills and that knowledge which are necessary for the project work;
- apart from the above, paper writing (as a second form of performance), should be related to the profile of qualifications in close relation to the theoretical and systematical teaching;
- in project work real planning tasks are worked on normally, analytical and systetic abilities, the knowledge and practical application of planning methods and techniques should be developed in a specific and

concrete project together with problem consciousness in political and social questions; projects should be related to the professional role and domain of planners and designers.

Some schools of architecture and town planning have architectural offices within their schools but there are several problems with these offices:

a) they have unequal chances in the competition with other private offices;

b) conflicts of obligation occur between academic priorities and project priorities;

c) there may be problems of fair pay of staff and students work, etc.

In other schools, like mine, there is a guided practice phase, organized by the university obligatory for every student after the first year and after the first term of the third year; for half a year, each time. These practical phases have generally a very positive effect on what the educationalists call "professional socialisation". We all noticed that the student's sense for reality changes within these practical phases. I will not say that this sense of reality is always a good thing as there may be noticed effects of adaptation and sub-ordination, offered or covered under the unwritten rules of professional conduct. This, of course, is also a challenge for academic staff to have closer links to practice as we all feel that teaching architecture and planning is a full-time job and, for research and for professional practice, there is not much time left over.

Maybe that we should generally discuss is the question of institutionalisation of project-oriented studies. The enemies of this idea say that with institutionalisation the concept of project-oriented studies is made absurd, flat and powerless and those, who promote the idea, are subordinated to discipline and control. (Wildt 1975/77 has written his doctoral thesis on 'Transformation of project orientated studies under the conditions of a reform from "above".' He makes evident that reform from above, from ministeries, by regulations, is bad.)

But, on the other side, those who are in favour of the idea say that project-oriented studies is becomming more accepted. Specific resources can be claimed much easier and project-orientation can be introduced into schools and departments which at present would remain without this as long as it is a question of the free will of department to adopt the principle of project-orientation.

All those who have already experienced project-orientation agree to the fact that students and staff alone cannot achieve a change of the course structure in favour of project-orientation. They ask for legal support especially

for the adequate provision of staff, space and equipment. This is different from the normal classroom and studio pattern. We need many smaller rooms with office-type equipment. But legalisation is a bad thing. This we have noticed in the roll-back tendencies after the period of tolerance towards innovations which had been legally guaranteed as a reaction to the students unrest in the late sixties. Take for instance the changes in exam regulations and organisational structures:
One big enemy of project-oriented studies is the obligation of staff to examine knowledge formally in certain subjects while project-oriented work should be based on the principle of exemplary and problem-based learning.

Today, we can notice - at least in my country - that regulations and academic law show a tendency towards institutional power, for individual subjects, stessing the examination of individuals rather than groups. They emphasize the formality of courses and the cognitive content of seminars and lectures. Motivation, understanding, problem consciousness and social awareness is not enough to prove that you are a good student.

It is easily said that project-oriented studies imply problem-oriented examinations, but there is an implicit tendency among staff members to keep ones own special subject tidy and distinct from other subject.

If the organizational pattern of an university supports subject-oriented structures, most of the staff members will be satisfied. But, for the students, this means that staff members will change the climate of exams in such a way that they are putting questions to candidates which proof in the presence of other staff members that the candidates are competent in the field which one certain examiner teaches.

A couple of years ago, we still were able to respect the group as an entity, to overcome individual egoism by deliberately not emphasising individual contributions to project work and to assess, crit and mark the project group as an entity. I think this is a keypoint for project-oriented studies which we need to regain or retain.

SELECTED PAPERS

This section needs some explanation as the following papers were not formally presented in the plenum at the BERLIN-FORUM, but were summarized by their authors in the discussion group in which they took part. The previous papers are to be seen as the keynote statements, which had been commissioned beforehand and were meant as starters for the following days of discussion. These following papers were done by their authors often to explain their position or the background for their exhibition contribution. Other participants brought with them their ideas, their interpretations on what a project is and others tried to explain both the conceptual as the institutional background of their attempts at project-oriented studies. As editor of this report, I have put some of these papers together, not necessarily because of their excellence but rather to document the pluralistic but "progress" orientation which dominated the discussion at the conference, at least as I saw it.

Each paper, I feel, and the descriptions of some of the projects (in the last section) are representative of this part of the FORUM. They convey to those who were not able to attend an idea of the heterogeneity of backgrounds and cultures, clashing against each other in a most manner, and still managing to find common denominators for discussion. Apart from their general informational content, these papers each give a treatment of a specific idea, not all of which I can endorse personally, but which are worthwhile contributions to the debate. They can be studied by other schools who might have interest or the intention of transferring the one concept or the other to their own setting.

Unfortunately, as the discussions were not taped and were purposely not minuted - this being one of the reasons, maybe, why the discussions were so good and so open - it will be impossible to elude to all the points nad to the many controversies which arose during the FORUM. If I have omitted important constructive ideas or concepts, please, excuse but let me know. My apologies are stated here, in advance,; it was one of the weaknesses of having to serve both positions of conceptual and organizational co-ordinator of the FORUM.

Ken Appleby's written contribution describes how projects grow within what he calls a student-orientated course, how real clients are a necessary counterpart to the staff and students within a project, how big programmes are important to get a degree of complexity so that the student will 'study' (and not just draw) Architecture and Landscape. This leads him to a discussion on core courses, on assessments and juries, on process projects versus solution projects. He comes to the conclusion that

basic problem projects are needed early in architectural studies to allow more flexibilityin the later years. Both need support systems which we are unable or unwilling to provide, at present.

The connection between the hard core subjects of building construction and building systems with poetry is to be found in the next paper by Florian Beigel. The idea is, at first, rather a shocker. However, after the first few paragraphes the contradiction is resolved, somewhat like a dominant chord by Mozart, and the ideas presented, give great food for thought. It would be fun and indeed necessary) to follow these lines a few steps further comparing other relationships between design and poetry, (e.g.town planning, population problems, economic and social developments, etc.) This version of Beigel's paper has not only been edited by Wilson Briscoe, before he brought it to the BERLIN-FORUM, I have taken the liberty as editor to shorten it slightly. For the original text and more illustrative material, one can contact the author at the Structural Geometry Research Unit of PNL, London N7 8DB, England.

The programmes and the problems of a small but highly integrated school at the New University in Malta is to be found in the next paper, brought to the FORUM by Kaldarar and Mintoff. It documents some ways of co-operation which can be practiced between a university and its surrounding community, through a system of student competition, but also in a student-worker scheme. The "real-life" projects are seen in a somewhat different way than those discussed by Hull participants or by the participants from the Wassertor Platz project of the Technical Universsity Berlin. The Maltese were highly interested in new trends, in new approaches to project studies and have explicitly requested for more detailed accounts of the "project-office" idea.

As there was much discussion and constant reference to "project-offices" within the FORUM discussion groups, the inclusion of a short description of the Newcastle Model seems to be appropriate. It is very important for the understanding of those who are not yet familiar with the term that this "project-office" is by no means typical - it is indeed (as most other project offices are) quite unique. A further discussion of how such project-offices can be instegated, what sort of resources are needed, etc. would be a fine topic for the EAAE-AEEA Newsletter. Those wishing to contribute on this subject or to make any comment on any of the sub-topics, raised in this report are cordially invited to do so in writing for inclusion in the Newsletter to the contact address: David Coupe, Canterbury College of Art, Kent, England.

A paper giving the background knowledge of the Architectural Department of the Delft University of Technology in the Netherlands was originally distributed in the exhibition in conjunction with the presentation of one of their projects. It has been included here with the intention of giving those staff and students of more hierarchically organized schools some basic information on how a more horizontal self-determining decision-making structure can be mamanged within a department, without losing any face. Sapiential authority replaces structural authority, ideally. Our situation in Berlin is somewhat similar, but a little more restricted in most ways in comparison to Delft. There is one main difference to most British, Irish or French schools and that is that the student has a high freedom of choice in the content and period of projects, especially after the intermediate examination (Vordiplom). Furthermore, there is a higher level of opportunity for independent studies which the student can take advantage of, at will. Various combinations of these independently determined ways of studying can often be found in the form of the self- or group-initiated project.

A quick and off-hand comparison between the TU Berlin and the TH Eindhoven can not be achieved here, but such comparisons were going on continually during the FORUM. They brought up hypotheses such as:

The more student input into the decision-making processes of a school of architecture and the higher the level of self-administration in the institute for higher learning, the more relevant the project will be for his/her studies.

Further hypotheses could be taken out of a comparison between British and German schools:

The larger the school of architecture, the more formal and structured decision making processes have to be. The larger the institution, the more subordinate a position the student will find himself in. The less a student is seen as a grown-up person by the staff, (see le Nobel) the less relevant the project will be.

These hypotheses could continue at lenght and do not only refer to the Dutch, English or German situations. Aparent contradictions between schools or the lacking of particular subject matter in a particular country refer to the different levels of concern. The project as some schools understand it (for instance, after the Jokusch definition) is unfortunately conspicious by its absence in many architectural schools in Europe.

The component of "student input in decision-making" is paramount to a logical approach to studies for grown-up people. On the other hand, the more structured and formalized decision-making processes become, the less chance there is of incorporating student needs and of achieving flexibility within projects in a large school.

To augment this last point, I have included a paper on project-oriented education at Aarhus, Denmark, which is partly taken from the 1979 Annual Report of the Aarhus School of Architecture and partly taken from the script, accompanying their exhibited project at the FORUM. A comparison of this short account with the more detailed description of the Royal Danish Academy of Fine Arts' School of Architecture in Copenhagen (published by the EAAE-AEEA after its 5th. Forum in April 1978) will give the reader a very good idea of an open-ended, student-plus-staff-determined, project-oriented educational concept, not only practiced in the architectural and planning study systems in Denmark, but in many other disciplines as well. The self-administering system, which is to be found in many variations in many institute of higher learning all over Europe, is practiced in few countries as democratically as in Denmark. Although all is not perfect in their institutions, the combination of self-administration and project-orented education has brought forth a depth and quality of content and design, second to none.

If this or a similar message is readable from this report then my editing has been worthwhile. This written report is only a fraction of what was said and discussed at the BERLIN-FORUM. It is only a fractional documentation of how many human communications are transferred within a co-incidental combination of confederates in a educational cause.

THE DESIGN OF DESIGN

Ken Appleby
School of Architecture and Landscape
Leeds Polytechnic

This is a personal paper - some of my own views about project based design education and teaching and not an official Leeds School of Architecture position. Though this might well be argued as quite consistent with our attitude at Leeds because, while as a design community there is a general, mutual, agreement about the way we should approach design teaching, both staff and students operate with a great deal of independence. We see this as central to the activity of learning.

My main experience in the School has been in the third year degree course. The first two years allow the student to orientate himself, to learn the tools of the trade and develop his skills through exercises. In the third year the students are expected to take considerable control of their own studies and demonstrate on an individual basis their abilities, knowledge and motivation.

Most students go out into practice for a year after taking their degree so the third year is also seen partly as a bridge between school work and the student's first year in an office.

While we do not expect our graduates to be technically competent in every sphere we try hard to ensure they will have the ability to understand and the tools to influence whatever design environment they find themselves in.

What we want to see is a retention by the student of a personal curiosity together with a confidence that his basic design skills will be able to cope with the problems of a rapidly changing outside world.

These definitions are purposely loose because although most of our students intend to work in architects' offices we cannot prejudge this or what conditions they will find there.

STUDENT ORIENTATED COURSE

We have a student-orientated course. By that I mean we assume the student will attract to the problems the tools and skills needed to solve them. He is not taught a series of standard exercises.

In this situation the staff role is, therefore, twofold. To provide the basic framework from which the student can generate his problems. And to support the student in his attempt to resolve the dilemmas he creates for himself.

In project work we generally try to produce a piece of

hardware - a building or a part of a building or a component: a thing. We tend to give a high value to the resolution of design problems. Moreso than to their examination and study. We see these activities as a means not an end. We try very hard to ground our programmes in as real a reality as in practical within the constraints of a school. At the same time we want the student to learn from the outside world and not be overwhelmed by it. And we recognise that the aims and timescales of education and practice are not always compatible.

"REAL CLIENTS"

We always try to have real clients for our schemes. While they may not be putting an actual building on a particular programme site at a particular programme time, they are always deeply involved in the type of problem we are studying. If we ask a student to design a hotel, for example, he will be briefed by a hotel manager and visit designers working in similar areas - who usually disagree with the staff about the real issues of the programme. We put considerable stress on actual observation as a counter-balance to the abstraction of design guides and statistics.

The year is divided into three terms - about ten weeks of design time each - and the student will usually spend two of these working on a single design in one way or another. The third part of the year is spent on another design or a special area of interest or maybe a competition.

BIG PROGRAMME

Currently the programmes in third year are big ones and we require at least one to be resolved comprehensively. As problems they are designed to be a little beyond the students' intuitive grasp. So he must construct an intellectual framework before he can order the various parts of the task. An additional advantage of big programmes is that they can usually offer a wide range of opportunities for individual interests to develop - they can breed small programmes.

At least a third of the design time is spent on working out the design technically. That is, the process of construction and servicing is always seen as an integral part of the problem. Not only what and why but how and when.

At the moment we are trying to fragment this pattern much more, so that each student can develop naturally at his own pace. Even in a structured programme while everyone in a year might end up more or less in the same place at the end of the session we try to help him get there in his own way and at his own speed.

CORE COURSES

The specialist lecture course - environmental physics, structures, precedents, theories, urban landscapes and construction - runs throughout the year and is based on the idea of a core and flexible envelope.

The core of each subject is fixed and continues parallel

but separate to the studio schemes. The flexible envelope can expand and change and be closely related to the specific studio schemes as they develop. And the formats tend to be different. The core being lectures and the envelope seminars and projects.

All our specialist staff work very closely with students, studio staff and outside consultants on studio schemes. They recognise and support the primacy of the project as our main learning method. Especially in the third year they stress the role of the student in asking questions and in setting the design plan within which he wants the specialists to work.

Specialist staff give separate assessments of studio schemes as well as contributing to team juries. Our juries will usually have a core of studio staff and co-opt specialists where their skills are appropriate. Juries are generally arranged so that any member of the School from any year - either student or staff - can become involved in the discussion and members from other schools are welcome.

We are very fortunate at Leeds in having just moved into a new building with Builders, Engineers and Planners - though maybe we should have some Artists as well - and see this close relationship having a significant effect on the way we develop,

PROJECT VERSUS PROCESS

Of course a weakness of our approach to problem solving is that the student only builds the past and is often weak in the theoretical basis for design. The dangers of the solution orientated approach is that we can get so excited about the product that we tend to forget the process. We may not give enough time to understanding why we do things. We recognise this is a problem and try and correct it in two ways. By the parallel theories/precedents course and by seminars and projects aimed at making the student see his work in context. We try to make the theoretical inputs as useful to the students as the technical inputs. We try to convince him that a theory is as much a tool as a screwdriver.

Of course most students resist doing any of this work because they are so interested in getting on with the immediate project. They resist spending time on something they think is not of direct value. It is the project, the end result, that matters not theoreising about their actions - the process.

I think we have to sympathise with this point of view to some extent however much we know the importance of an intellectual basis for action.

The effort and interest of the student is in the project - the result, because that is what relates him to the outside world where his future lies. The interest of the teacher is in the thinking - the process - because that is what is done in his world, the School.

In our approach to design we recognise the central importance of self-motivation. Without the desire to design both knowledge and ability cannot be fully used. So we are very concerned to create the conditions where students feel they are deeply involved with their own studies.

BASIC PROBLEM PROJECT

The two main areas effecting project teaching where we have experimented have been in types of programme and methods of group organisation. One varient on the structured programme has been what I called a basic problem project. This type of programme is a fairly straightforward building type from which the average student can produce a satisfactory solution based on sensible basic concepts and he is assessed at that level.

Its context. however, both social and physical, is such that the more adventurous students can grow the programme in a great variety of ways - urban texture, landscape, social futures, construction experiments - and to his own level within the option. The student must always answer the basic problem but his final solution can be a much more advanced exercise than his neighbour and he is given credit for this degree of involvement in the assessment.

MORE FLEXIBLE COURSE

We are trying to develop various ways of making the course more flexible while trying to keep the basic project core. One of these solutions is to break down the year into small groups, each with a different leader but all doing the same programme. Hopefully we can get compatibility and people can learn directly from each other.

Alternatively we can have different leaders doing different programmes within the year which students elect to join - like a small office. This has linkage problems and is very expensive. But there is a big gain in motivation.

We can develop this further by encouraging each student to write his own programme within a common year design strategy. This has terrible linkage and support problems but obviously total involvement by the student.

The underlying factor in all these methods is an attempt to involve the individual strudent more deeply in his own education by breaking down the organisation into smaller groupings of one form or another. Small, self-organised groups appear to give the opportunity for a much greater flexibility within the School and for a far greater degree of involvement with people outside.

But this form of organisation will also create its own problems. We foresee a lot of confusion about value judgements. Often in the wider world problems are not solved by buildings or things - are often not soluable at all. What then is design?

SOME NOTES ON STUDENTS BECOMING ARCHITECTURAL POETS

Florian Beigel edited by Wilson Briscoe
School of Architecture, Department of Environmental Design
The Polytechnic of North London

Material effective structures are usually quite explicit in showing how they carry loads. They are generally built using distinct components to cope with a certain type of force - say, wires for tension, struts for compression, beams for bending. If one sees wires, struts and beams together in a structure, it becomes pretty clear that things must be pulling in the wires, pushing in the struts and bending in the beams; the latter two mechanisms being perhaps somewhat more difficult to comprehend. You could say the basic working of such a structure is comparatively easy to read, if only intuitively. That is to us a good motive to extend the use of such structures into a wider architectural spectrum.

Another motive: the morphology of material effective structures permits and suggests many possiblilities for shapes of envelopes and spaces. The morphology can be very supportive when articulating architectural experiences by means of strong geometry. To illustrate this point: few would dispute that Antonio Gaudi used the gravity modelling technique for experiential reasons as well as for technical ones. The French enlightenment Architect, Ledoux, designed the image of a house for a woodcutter to allude to a heap of logs and that of a barrel joiner to allude to a barrel. With quite a few architects today jumping on the bandwagon of so-called Post-Modernism, which takes some inspiration from Ledoux, it might be worth noting that load responsive techniques to find shapes for structures seem a logical extension to these building image concepts. The morphology can also be useful when only partial architectural experiences are to be articulated by means of a very distinct geometry such as the crossing of a threshold with a canopy, the awareness of some relative importance of a series of rooms with a pattern of closely-packed domed volumes or the sense of an urban room between buildings with some arcadian/collonadian structure at the perimeter of the void. T. Wolfe would call this the new ornamentation.

Let us summarise: material effective structures can be seen as an enrichment of an architectural vocabulary. But at this point of the argument we feel we should inject a note of caution. The approach of a speaking architecture could lead to some pretty depressing pathos if not exercised with both critical awareness and a light heart. We could end up with these pieces of architecture with singular meanings and therefore having an air of patronisation, sometimes of heavy moralism bordering even on intolerance. We are not very fond of architectural muesli feasts, neither are we attracted by devouring the guts of a building, and publicness when laid on the tonque by a high priest becomes somewhat difficult to swallow.

A quick return to Gaudi might help us to expend the notion of a speaking or legible architecture. The desdription of his Guell Gollony as a set of vocables of place would seem hardly adequate for what it is, namely, an architectural poem. Many of us will know Gaudi's hanging models. From the point of view of material effectiveness, his structural morphology is obviously particularly appropriate in the case of building in stone. It also facilitates an intuitive understanding of the flow of forces in the built structure. A structure generated in this way might further evoke a richer set of associations, and in fact Gaudi might have perhaps suggested that the morphology equips architects with sufficient confidence to set out on journeys of poetic discoveries. That would seem to us to be the best reason for using these structures.

We are very interested in a poetic architecture. Poety encompasses the sheer joy of looking; going off at a tangent; being a voyeur out for glimpses; letting go and getting a taste of danger. Poetic architecture therefore, might have transgressions, contradictions, collisions, disjunctions, ambiguity: we say it is magic. The images of poetic architecture make transient references to things assumed known. They abound in allusions. They have layers of meanings, just as a Chinese garden has, the ultimate purpose of which is "to refresh the heart". They are tolerant to be read in many ways. Such an architecture is potentially very capable of actively holding dialogues with many people on many levels. It has multiple interpretability.

How then should we teach students to become architectural poets? The question makes us very humble, having at best a few clues to the answer.

We call our projects: 'live projects'. By that we mean the student is both encouraged to have a little dream and to realize it. The student hopefully learns something about the whole architectural process, from having a vision to the working of the vision, with an emphasis in the teaching on either end. There is little room for wooliness of thought, cheating or self-indulgence; they all show up. The live project is a very effective vehicle to teach clarity of concern. Without this clarity there is little to test and ultimately there is no product. At its best, the live project brings out enthusiasm and mutuality.

We are strong believers in group design. There is the obvious pragmatic reason for working in groups: division of labour, on the basis of students' inclinations and strengths. However, we see more benefits. Group work is a tool for experiential exposure of the design. It fuses ideas and takes them to bits. It helps to bring intensity, ambiquity and transgression to the design, all very potent ingredients of poetry. The group brings out the question of this or the other, which we always answer with both, without making compromises on either.

All of our work so far is group work, and we have found it enriches the design.

We are, however, careful not to take the vision of the whole away from the individual. The work of the group must remain a rescource for the individual effort if spirit is to remain high. Let us take the development of a basic design concept as an illustration of the principle in practice. We ask students initially to produce what we call dominance designs individually. These are designs in which a single design parameter is allowed to dominate, each student dealing with a different parameter. The dominace designs are consequently pooled, discussed and made available for the production of balance designs by each student taking all parameters into account. This method ensures richess of ground, clarity of concern and an atmosphere of mutuality.

In the case of a theatre programme, this could mean that 1-3 students would produce individual theatre designs with theatricalness of appearance in the foreground of their minds; another 1-3 would produce designs under the scheme of place and context; others would tackle the theme of quantity of space versus preciousness in a limited budget situation; another few would let a space typology dominate, or publicness of internal and external space, or employ user participation as the generator, or structure, or material availability, of (changes of use in) time; others might well pursue a theme of their own choice. This work would then form a pool of ideas from which, in the second stage, balance design is to spring.

Designs produced in this atmosphere of mutuality are not so much regarded as personal property by the students. We have therefore found it quite easy to come to a consensus with the students on the question of which of the balance designs might form the basis for further development in a live project.

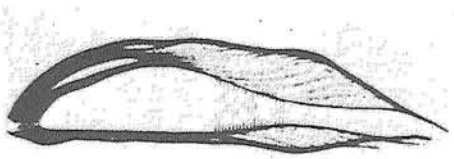
Another clue to the answer of the puzzling question might be our insistence on the use of analogies at any stage in the design process.

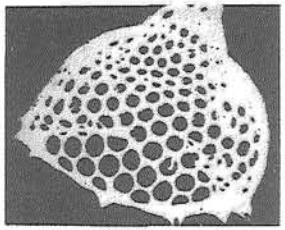
Of course, we take excursions into other fields in the hope of discovering substantiation of deliberately vague architectural hypotheses. To mention just two of our more obsessive outside interests: on the level of experiencing architecture, we are interested in how the images of advertisements work. (Ref: Judith Williamson, 'Decodingof Advertisments', published by Marion Boyar, London). In the sale of the product advertised we have a clear indicator as to the working of the advertisment. Such an occupation might help us to make our facades more legible! On the more technical level, Frei Otto and the IL have inspired us to follow their footsteps leading to Biology.

We are also using analogue models more directly. We employ them to tap dreams and feelings. To this end, we

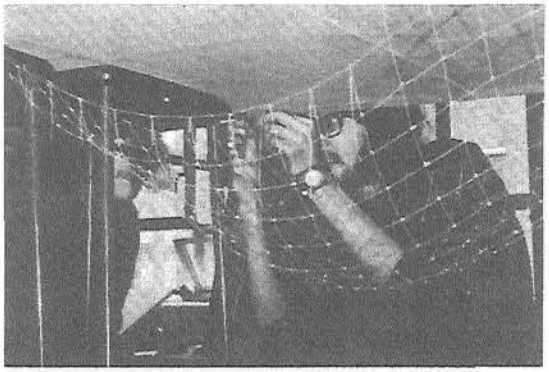
THE GRID SHELL

Florian Beigal (Dipl.Ing.(Arch), M.Sc.(Arch), Tutor,
Polytechnic of North London,
Department of Environmental Design,
Holloway, London, N7.
Telephone: 01-607 6767.

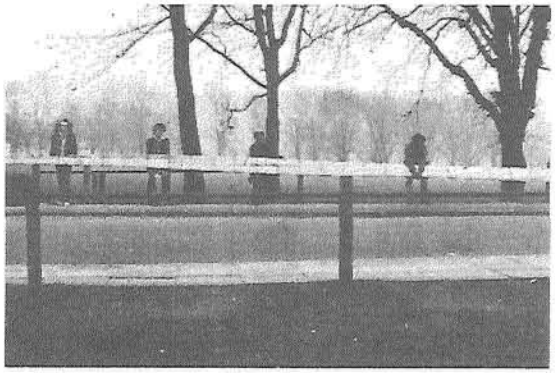




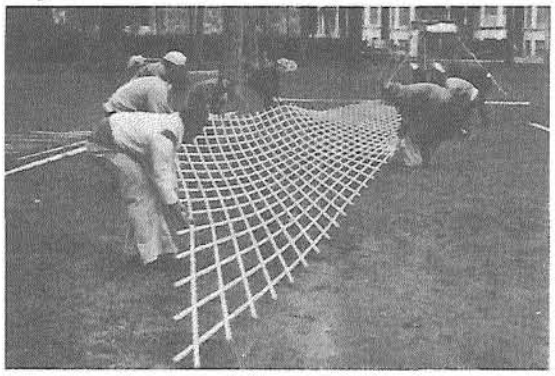
Biological anologues to grid shell.
Above: Oyster. Right: Diatom.



1. The hanging chain model.

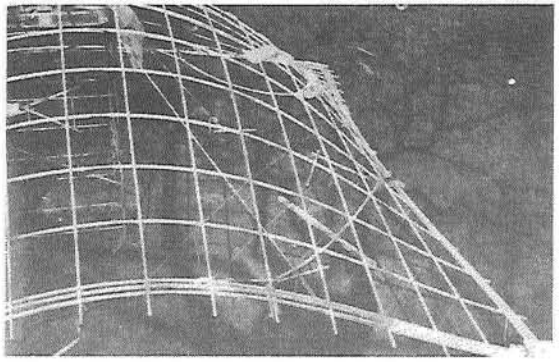


2. Collapsed grid for transport (weight approx.50 Kgs).

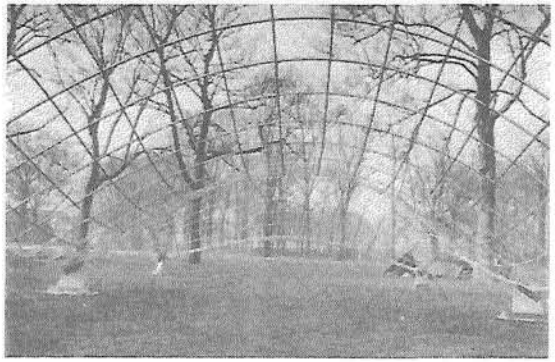


3. Unfolding the grid.

4. Draping the grid over temporary support



5. Setting angles of the grid as per hanging model.



6. Finished grid shell covering approx.100 sqr.metres.

might use a metaphor or a painting to generate a space with a desired feel explicit in the analogy. We also employ them on the technical level, the gravity modelling technique to generate structural shapes being our favourite.

The example of the hanging modelling technique might serve us well to illustrate the poetic potential in a design method spiced with analogue models. The fact of things being upside down in a hanging model unconditions our ways of seeing. It is like seeing standing on your head: you see the whole - you don't at once focus on a part. The normal associations are suspended for a short while. There is time to make new ones.

You are seeing through the image or behind it, as one says. The image is becoming more real, sureal, if you like - undusted and fresh. Consequently, by a simple process of inversion, new avenues open up for the exploration of the image and ultimately for its manipulation.

The hanging modelling technique involves also a focusing process, drawing our attention to an essential. The technique homes in on the relationship between the gravity and geometry of a structure, as you know. It makes this relationship very clear by suppression of irrelevant information. You can literally see it and feel it with your hands. And again, by means of another inversion, tension standing for compression and vice versa between the real and the model, the hanging model entices us to interpret the leaning experience of the gravity/geometry relationship. The tool of the hanging model is very suggestive of play on both conceptual and practical levels.

So we see the hanging model not only as a technical tool to reduce the weight of a structure, but also very much as a poetic tool. It invites us to change our position of viewing, if only a few times, and only in space. Being able to change the viewing position is of course a prerequisite of any poetry. As we have indicated before, the hanging modelling technique is only one of the analogues we are considering and it is appropriate to mention here that we are not shying away from journeys into time.

I hope you can see that we try to avoid preconceptions of appearance being thrust upon a design. Instead we constantly allude to it. In general, we are more concerned with the sum of parts than with the parts; more concerned with the void than with the solid; and more concerned with space than with the object. We do like the Collage.

ROLE OF THE "DESIGN PROJECT" IN ARCHITECTURAL EDUCATION

Karol Kaldarar Prof. and Head of Department
Edwin Mintoff, Student Representative
Department of Architecture and Civil Engineering
New University - Malta

In the field of Architectural education, Malta has always recognised the importance of the "design project" which is assigned to the student during his course of studies. In previous years the approach to the assignment of a project for a particular design theme was based on similar systems adopted in many institutions. During this last year, changes to the approach of the teaching of design were introduced, and improvements have been noted which will contribute to make the present inflow of students more competent members of the profession.

In past years, it was normal practice to train students by setting two and even more projects, to tackle in one term. The period allocated to each project was therefore in effect that of about six weeks. This was too short a period for a student, to allow him enough time to study even a simple design problem in depth. The period for the examination of the practical organisation of information, analyses and selections and finally to derive therefrom a satisfactory design was very limited. Moreover the student could not possibly analyse the social, economic and environmental conditions which design so often requires. All these problems, together with those of building construction and technology were treated in a way which left a great deal to be desired.

For these reasons, a decision was taken to introduce the practice of assigning only one project for design during a term. The project is selected carefully, in order that it will incorporate related design problems, such as townplanning and environmental design. The student is also thereby (i.e. by giving more time for design) more involved in the technical and structural aspects of his project. In this way, the school attempts to teach the students the mult-disciplinary aspect of building design, which becomes necessary in his future work. The object during this period is to help the student to arrive at a framework of procedure within which imaginative and creative ideas are generated, but at the same time controlled effectively and expressed sensibly within a reasonable time.

PROGRAMMES

Programmes assigned to students are at times "REAL" projects, by which is meant that the project to be designed shall be in effect implemented within a reasonable time. This is done through the help of Government, as the project is generally one to be erected for Government authorities. The students are therefore involved early in the design process and methods which are generated. They attend official meatings, helping in decisions concerning use of materials to be used, the technical aspects involved, carry out site surveys, and many others such

preliminary decisions common to all building projects.

Another major decision in the teaching methods adopted is that a design project is never assigned possibly to more than three students. Each is supposed to work on different solutions and presenting different approaches. Through this method the school has noted that the problem which used to arise when the same project was assigned to big group of students i.e. that of uniform design approach, with perhaps a certain amount of repetition of ideas and sterotyped solutions has been avoided. In large groups of students, it has generally been noted that the more diligent and talented are creating and setting the pace, whilst the less gifted tended to borrow and derive from the ideas of these students. The design themes are given according to the level reached in the architectural set up of the school, the projects chosen becoming more complex and difficult in later years. The biggest design problem is set during the final year and this accentuates the integrated and interdisciplinary features of architectural design.

During the architectural formation of the students three particular aspects are constantly kept in view i.e.:

1) Ability to design, detail and specify buildings which are structurally good, take account of weather-conditions and are comfortable.
2) Realistic studies and attitudes to costs.
3) An understanding of professional liabilities.

The ability of the student to do basic drawing is never neglected. The tendency to give greater importance to technology and progress away from the art school type training may be a modern tendency. The school however realizes that the established skills of draughtsmanship and presentation which traditionally have helped architects to communicate with engineers, builders and clients, are still important qualities to be fostered and encouraged.

TUTORIALS

In order that every importance is given to the teaching of design, the school time-tables are arranged in such manner that each student will find time to meet his tutor for at least one hour a week. This tutorial is held by a professor or lecturer responsible to see that project is carried out satisfactorily and in time. If interdisciplinary aspects one involved other tutors with special expertise one consulted at the proper stage of design. Structural systems, technical equipment, mechanical servicing are all discussed and evaluated as the design is being evolved.

COMPETITIONS

The school recognises the need also of occassionally providing projects to be tackled rapidly but effectively. In this regard, the school in conjunction with the local chamber of Architects, has introduced a four week-long design competition, having one common subject for a

design theme. The Chamber has agreed that the best two designs submitted shall carry a reasonable reward. This system seems to be popular with the students and shall certainly serve as an incentive to produce creative and stimulating design solutions. During the period, in which the students are designing for the competition the turorials shall be given by both members of the school staff and members of the Chamber. The members chosen by the Chamber will naturally have the right background according to the nature of the project.

The Chamber shall decide about the prizes, but the staff shall do its academic assessment independantly of the Chamber's members decision.

TYPOLOGY

The school advises the students to start on a project by studying the special literature of magazines to get acquainted with the latest developments in the given fields (schools, theatres, housing, social agriculture and industrial buildings, etc.), however it was noted that some of the students do not follow this advice systematically and in the depth.

The school therefore introduced this year a special subject on the theory of planning, which is "Typology". It has been noted that the students are very interested in the theoretical aspect of Design, and therefore "Typology" is followed with keen attention.

The architect must have some basic theoretical knowledge about all the important types of buildings, and it will make it easier when studying and choosing (in later years) the special, abundant literature, and other information sources. The student will be able to recognise and choose what is progressive, and what shall be valuable to use in his own practice. The school believes that the subject "Typology" or Theory of Planning can be introduced in other schools of Architecture as an important theoretical preparation for the architect's future, benefit and his professional activities. Many schools of Architecture already have this subject covered under different titles.

THE STUDENT-WORKER SCHEME

Our contribution to this Forum cannot be complete without giving a brief description about the student-worker scheme, a prevalent characteristic of tertiary education in Malta. Under this system university students alternate a period of five and a half months work with a period of five and a half months study. Thus University students are "sponsored" as employees of public bodies, industries or commercial organisations which require their services while they are at their place of work and which will eventually require their professional services once they qualify through their participation in university courses. This is a new system which has been introduced by the Government and as mentioned above, it has enabled the school to choose "real" projects.

We wish to refer to the participants of this Forum that

this system of architectural education is helping to raise the general level of the students' work, in that his involvement with real design problems is introduced at a very early stage, thereby, making him conscious of the many problems the professional designer shall be taking when he is on his own and has to make his decisions.

Worth mentioning also is the fact that due to the limitations of local scale in Malta, the course run at the University takes on integrated approach of Architecture and Civil Engineering. This effect of polarisation means that a student will become a fully qualified architect and civil engineer after completing a course of seven academic years. Architectural training is considered to be more important and takes about 60 % of all studies.

JOINT PROGRAMMES

The idea of "Joint Programmes of Study" mentioned in the materials section seems to be a very important one. Malta being a small country is especially interested in the possibilities of this kind of cooperation between the Schools of Architecture. It permits the students to spend a part of their studies abroad, it facilitates the postgraduate studies at other universities, exchange of audio visual materials, enhances apportunities on the employment market, the mutual exchange of teaching staff, etc. The school, therefore, welcomes the idea of "Joint Programmes of Study".

PROJECT OFFICE

School of Architecture, University of Newcastle upon Tyne

INTRODUCTION

In the summer of 1967 discussion took place between M.J. Mannings, Senior Architect, MoPBW Leeds and Professor D. Wise on the possibility of collaboration between the School and the Leeds Regional Office. At that time the ideas were modest ones involving, perhaps, studies of certain building types within the Ministry programme and work on the problems of dimensional co-ordination of Crown Buildings and component design.

The object of the exercise was to continue a pattern which had developed in the fourth year of the BArch course over the four years since the introduction of the Practical Training Year following the competition of the BA course in the third year. The effect of this year's experience had been to enlarge the scope of the fourth year and to introduce an increasing element of reality into the studies undertaken.

The outcome of the discussion was the eventual offer to the School by Stanley Page, Superintending Architect MoPBW Leeds, of a commission for a Crown Building at Heaton, to be undertaken by the students, under direction, as part of the academic programme.

It aimed at giving students an understanding of the professional responsibility inherent in an architect's role, and showing how a design team could work in practice. Further, it was hoped that the project would give rise to a number of more detailed studies, not the least of which was the integration of building science.

DESIGN AIMS

The Project Office attempts to demonstrate to the client through an exhaustive study of the requirements of the brief and all relevant environmental, technical and cost data the optimum design solution.

TEACHING METHOD

The operation of the design term method of working is part of the fundamental organisational policy of the Project Office. Constultants from local practices such as quantitiy surveyors, structural engineers, etc. are nominated to work with the students as design team members.

Design team meetings involving the consultants, the client's professional liaison officers and the users together with the student architects are held in the Project Office at regular intervals during the design process to discuss and ratify decisions taken by the team members.

All meetings are minuted by the Project Office and circulated to team members.

MANPOWER

Qualified staff administer the Office, supervise and take professional responsibility for the projects in hand, whilst post graduate students employed in the Office act as site supervisors and as Design Team architects at the head of a student group. Apart from a Director and Deputy Director, the Project Office has two assistants to the deputy director, one architectural assistant, two research associates and a secretary. In addition two consultants with special overseas experience are retained by the office.

Other members of University Staff are employed by the Office when their particular skills are appropriate to the work in hand.

FORMAL DESIGN TEAM

Held at regular intervals during the design stages of a project, following the agenda shown in the RIBA Plan of Work, in order that all design decisions may be discussed and agreed upon and also that changes in instructions may be taken and analysed.

Minutes of these meetings are taken down by the Project Architect and circulated to all parties represented in the Design Team for agreement or comment at the next meeting.

ROLES AND RESPONSIBILITIES

At the initial 'site' meeting of a contract usually held in the Project Office with the Project Architect in the chair the roles and responsibilities of the construction team members are laid down.

The Project Architect is responsible for holding regular site meetings (not necessarily as chairman e.g.DoE contracts) to monitor and progress the contract.Minutes are circulated to the whole of the project team.

The Project Architect is responsible for the general supervision of a project and administers the terms and provisions of the Contract.

USER DATA

The Office is commited to a policy of measuring and analysing the actual performance of completed buildings in use against the design specification wherever this can be arranged. The results of this research are fed into the design stages of future projects.

COMMISSIONS UNDERTAKEN BY THE PROJECT OFFICE

Originally, the scale of the 'live' teaching projects were limited to simple single buildings up to £200.000 but due to inflationary trends, the office has been forced to accept commissions exceeding this cost target provided the project has special features, including research and development content, of such a nature that the value of the project to the School and to the memb ers of the project team concerned, is more than a mere process of earning addional revenue for the University.

Telephone Exchange Extension Bishop Auckland

The building is sited immediately to the West of the old Exchange on Westgate Road. The brief called for an extension partly over and partly adjacent to the existing exchange building but feasibility studies showed that a separate building would be preferable for the following reasons:

(a) It would avoid the disruption to the existing exchange operations that would be caused by work on the roof.

(b) The foundations of the existing exchange were hardly adequate for the additional number of floors required.

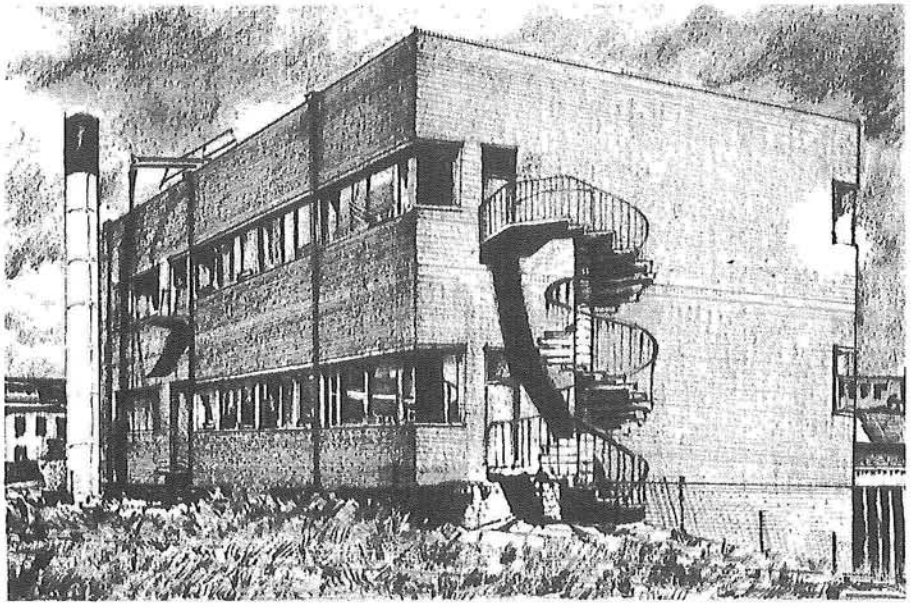
(c) Organisation of construction on site would have been more difficult and therefore more expensive.

The new extension provides accommodation at ground floor level for power, battery, heating and ventilation plant with the telecommunication apparatus areas located at first and second floor level. The potentially noisy standby generator is housed separately in a concrete retaining wall structure forming the western boundary of the site, an area previously occupied by a BR siding and coal depot.

When the railway track to the west is replaced by the planned inner ring road the new exchange building will become a focal point for motorists passing through Bishop Auckland.

The exchange has a reinforced concrete frame with recessed ground floor accommodation clad in grey sand-lime brickwork and upper floors in smooth red facings with recessed pointing.

An octagonal stair tower links the old exchange building with the new extension.



Client:
Post Office
North Eastern Telecommunications Region
Leeds

Client Technical Liaison:
Property Services Agency
Department of the Environment
North Eastern Region
Leeds

Architect:
Project Office
School of Architecture
The University
Newcastle upon Tyne

Quantity Surveyor:
Gleeds
Gosforth
Newcastle upon Tyne

Structural & Civil Engineer:
Ove Arup & Partners
Gosforth
Newcastle upon Tyne

Glebe 5 Housing
Washington New Town

Client:
Washington Development Corporation
Washington New Town
Tyne and Wear

Architect:
Project Office
School of Architecture
The University
Newcastle upon Tyne

Mechanical & Electrical Engineer:
Building Science Section
School of Architecture
The University
Newcastle upon Tyne

Structural Engineer:
Ove Arup & Partners
Gosforth
Newcastle upon Tyne

In 1973 the Project Office and Building Science Section of the School of Architecture were commissioned in association with the Corporation's Chief Architect and Planning Officer to prepare designs for an experimental scheme of 45 dwellings on a site on the southern boundary of Glebe Village.

The brief required the designers to pay particular attention to the following considerations:

(a) acoustic control and problems of noise within the house;

(b) the use of non-traditional building materials where appropriate;

(c) the practical use of space within the dwellings with special reference to the changing needs in the life cycle of a family and

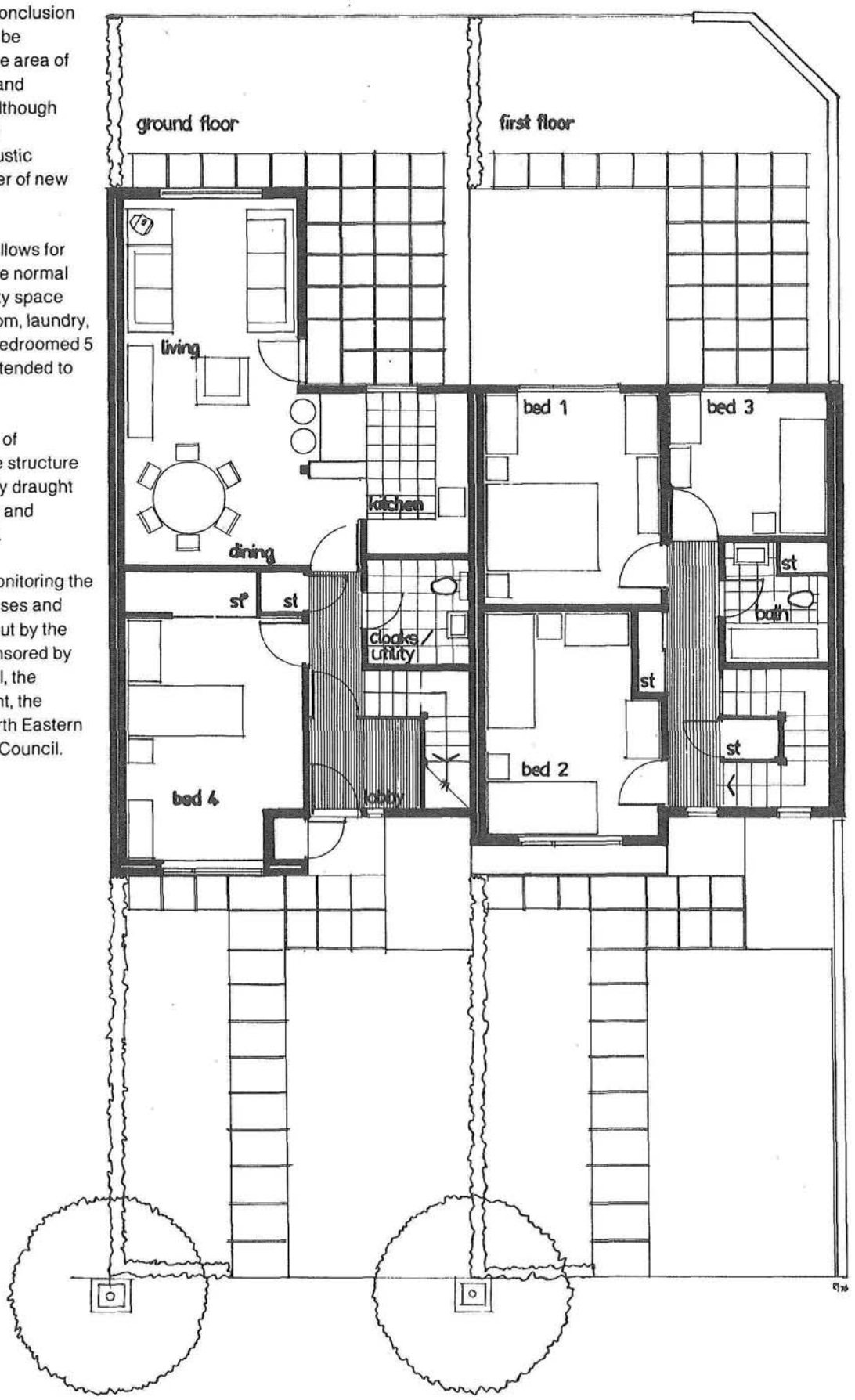
(d) low energy consumption and controlled ventilation.

Feasibility studies lead to the conclusion that improved standards could be attained most significantly in the area of reduced energy consumption and improved comfort standards, although some improvements were also incorporated in respect of acoustic control and a significant number of new materials were specified.

The design of the house type allows for change of use. In addition to the normal kitchen there is a serviced utility space which can be used as cloakroom, laundry, dark room etc., and the three bedroomed 5 person house can be easily extended to accommodate 6 people.

In addition to the large amount of insulation material built into the structure the windows and doors are fully draught stripped to minimise infiltration and ventilation is strictly controlled.

A three year experiment on monitoring the actual performance of the houses and energy used is being carried out by the Building Science Section sponsored by the Science Research Council, the Department of the Environment, the Electricity Council and the North Eastern Electricity Board and the Gas Council.



Projects undertaken within the past then years, can be categorised as follows

1. Building Design
   (a) Domestic (Housing)
   (b) Non-Domestic
2. Feasibility Studies
3. Research and Development
4. Conservation, Restoration and Rehabilitation

LIST OF PROJECTS
1967 - 1978

3 Crown Office Buildings,
a Telephone Exchange,
a Crown Office Building,
2 Telephone Exchange Extensions,
a Crown Office Building,
a Telephone Exchange Extension,
a Crown Office Building Extenstion,
2 Housing Projects,
Teesport Study,
Telecommunications Research Project No 1,
University Senior Common Room,
Indoor Training Hall (feasibility study),
Environmental inprovement Report,
a Computer Centre (design),
a Housing Project,
a Day Centre,
Village Housing,
Cottage Restoration,
a Cinema (feasibility study),
a Sporting Club (feasibility study),
Spectro Arts
Housing (feasibility study),
a Museum,
Telecommunication Research Project No. 2,
a University Union Shop,
a Video Centre (feasibility study),
an Arts Centre (feasibility study),
a Telephone Exchange,
an Arts Centre Bookshop,
University of Juba, S.Sudan - development plan and building studies,
a Community Centre and Stadium,
Theatre (feasibility study),
a Cinema (feasibility study),
a Community Theatre (feasibility study),
Refectory Bar and Lounge, Newcastle University,
Sports and Arts Centre (feasivility study),
Village Revitalisation (feasibility study).

DEPARTMENT OF ARCHITECTURE - DELFT

Dieter Besch und Henk Döll,
Delft University of Technology

GENERAL

The department of architecture of the University of Technology in Delft forms, together with that in Eindhoven, the full-time training for the profession of architect and town-planner at university level in the Netherlands. The amount of students is + 2.300, staffmembers + 500,-. The title awarded is that of building engineer. The educational program is based on the activities of architects and town-planners in practice, i.e. the design and the realization of the physical environment. For this purpose both the creativity and the scientific skills of the student are developed.

STRUCTURE OF THE STUDY

The total course consists of the propaedeutical, the bachelors (kandidaat, is not a final degree) and the engineers (ingenieurs) phase.

1. The propaedeutical course

During the propaedeutical course the student has to develop a basis for the more advanced studies and has to acquire basic knowledge and insight.
After the propaedeutical exam, that is to say after the first year, the student has to decide to stay at the faculty or to switch to another study, and, if he decides to stay, he has to choose his future specialization.
To be able to do this he has to know the possibilities of the different courses and the opportunities he will have in his subsequent professional and practical work.
In the study program of the first year the mornings are devoted to lectures in architecture, town planning and social sciences.
The afternoons are intended for project-(studio) work and for exercises, in which the knowledge acquired can be applied and the skills can be improved.

2. The bachelors course

The bachelors course (K) takes at least three years, K1, K2, and K3. As during the propaedeutical course the mornings are devoted to lectures and the afternoons to exercises and projects. For each year, two or three projects have to be done. Some of the exercises and lectures are obligatory, others optinal. For each of the directions there is a program of compulsory subjects. With the optional subjects, one can guide one's study in a more detailed way in the direction of own's choice.

3. The engineers course

The last year of the study is devoted to work on a single subject matter, either alone or in a group, supervised by at least three staffmembers. Students in townplanning have to participate in multi-disciplinary groups with students in social geography, sociology, civil engineering etc. during a period of six months.

4. Practical training

Two periods of practical training are compulsory: one period of five weeks before the second year and one period of twelve weeks before the final year. Students have to make a report. The faculty sometimes mediates in finding a job.

THE SPECIALISATIONS

1. Architecture

The direction of 'Architecture' is the most occurent (about 70 % of the students). The curriculum in architecture has the purpose to develop the knowledge and skills that are necessary to make architecural objects. Included is to understand the social functions of these objects, who are the users, how the objects are used, who are the principals, what interests are involved, the position of the architect etc.
The following aspects are important:

- the development of architectural theory and the history of architecture
- behavioural psychology and perception psychology, in so far these are relevant to the built environment.
- the financial and economical possibilities
- the possiblitities and the limits of construction techniques
- evaluation techniques, such as cost-benefit analyses.

2. Town planning

The specialization in 'urban planning' is concerned with the knowledge of, an insight in, the urban process as a part of the entire social process and with the role of the urban planner.
The future townplanners must be able to design programs based on the knowledge of the above mentioned process by using scientific research-methods.
With these programs they should be able to make alternative projects by means of clear and verifiable methods.
The study of existing projects is considerable for students specializing in this field.

3. Public housing management

The aim of the specialization in 'public housing management' is to develop education and research in the domain of public housing. These future engineers must have a specific knowledge of the planning, construction, the maintenance and the rehabilitation of the built environment. They have to overlook the whole professional domain, be trained in scientific methods and be able to cooperate with other disciplines.

4. Building technique

The specialization 'building technique' has a strong emphasis on the structural, statical and physical aspects of buildings. The difference with the course in architecture lies especially in the larger amount of technical subjects.

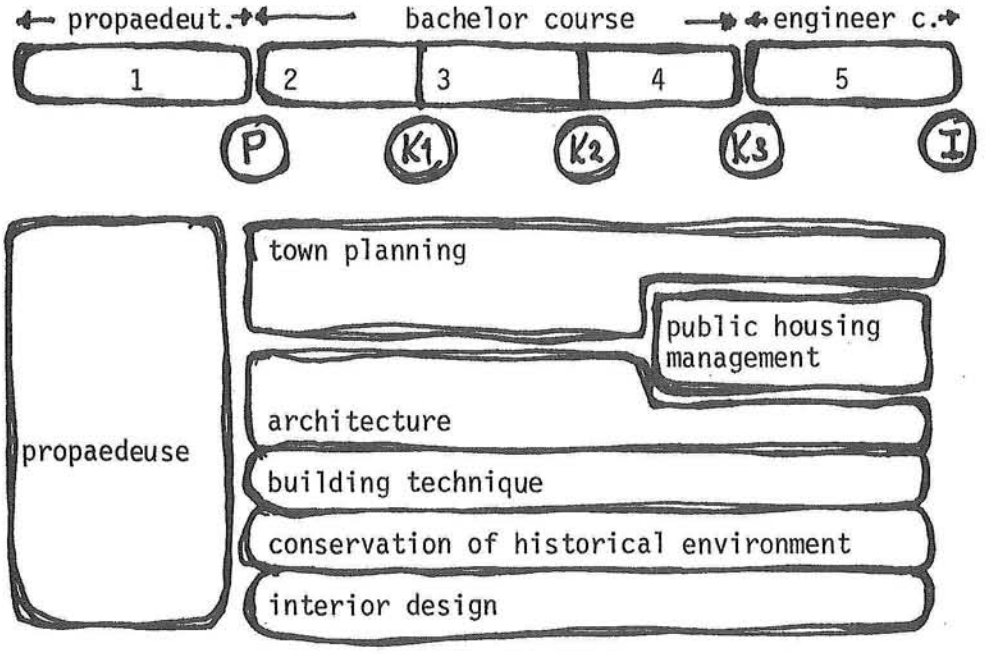
5. Conservation of the historical environment

The specialization 'conservation' is especially engaged in the knowledge of historical constructions, forms and materials. On the basis of this knowledge the student is trained to redesign historical buildings and environments.

6. Interior design

The specialisation 'interior design' has the same program as architecture. However in the projects more emphesis is placed on the interior design and the finishing of buildings.

EDUCAIONAL DIAGRAM



THE DIDACTICAL FORMS

The main educational methods are: lectures, intensive courses, exercises and projects (studio work). In nearly all cases the knowledge is checked by means of a (written) examination. The intensive courses are in the first place meant to discuss literature or documentation, which has been studied in advance. Students are tested by written examination, the writing of a report or group discussions. The exercises are intended to improve skill in certain subjects. The students work in groups of 12-15 persons supervised by staff members. A project lasts one or more periods of three months. In the earlier days design-work was the most important element in the study. Nowadays attempts are made to treat more aspects, considered important for the practice of future engineers. About fifty percent of

the time of a student is devoted to work in project groups.

THE ADMINISTRATION OF THE DEPARTMENT

The most important organ of the department is a council. This council consists of 8 members of the educational staff, 8 members of the technical and administrative staff and 8 students. They are elected every year by and out of all members of the department (± 2.800). The council elects an adminstrative committee (max. 5 members) and a dean/ chairman. They care for the management of the department.
A few times a year a general meeting of the whole department is held to discuss important topics and to advise the council. Every person has the right to put forward his proposals at those meetings. The department council has installed several committees, for example -
the committee for education (AOK)
the committee on research (KW)
the board editors of the department-weekly (B-news)
several committees for the denomination of new professors.

The department has been organised in several levels.

A. The discipline groups (vakgroep)

A discipline group is a unit for the organisation, coordination and integration of the activities of persons, working in the same professional area. The following groups are present :
- behavioural sciences
- management science, economics and law
- historical science
- applied mechanics and bearing constructions
- construction methodology
- urban and regional planning
- landscape planning and ecology
- housing and urban design
- building design
- interior design
- basic design and communication
- design methodology
- architectural theory.

B

1. The study councils (kernwerkgroepen-KWG)

Every specialization (architecture, town planning, public housing management etc.) has its own elected council, which controls the different educational programs. In general meetings the studyprograms can be discussed.

B

2. The permanent working shops (permanente werkgroepen-PWG)

Institutes and permanent bodies of collaboration which form permanent workshops:

- R.I.W. : research institute for public housing management
- I.S.O. : institute for town-planning research
- C.A. : centre for architectural research
- P.R. : projektraad, institute for collaboration of socially engaged groups
- S.S.G. : multidisciplinary town planning groups.

PROJECT-ORIENTED EDUCATION AT AARHUS

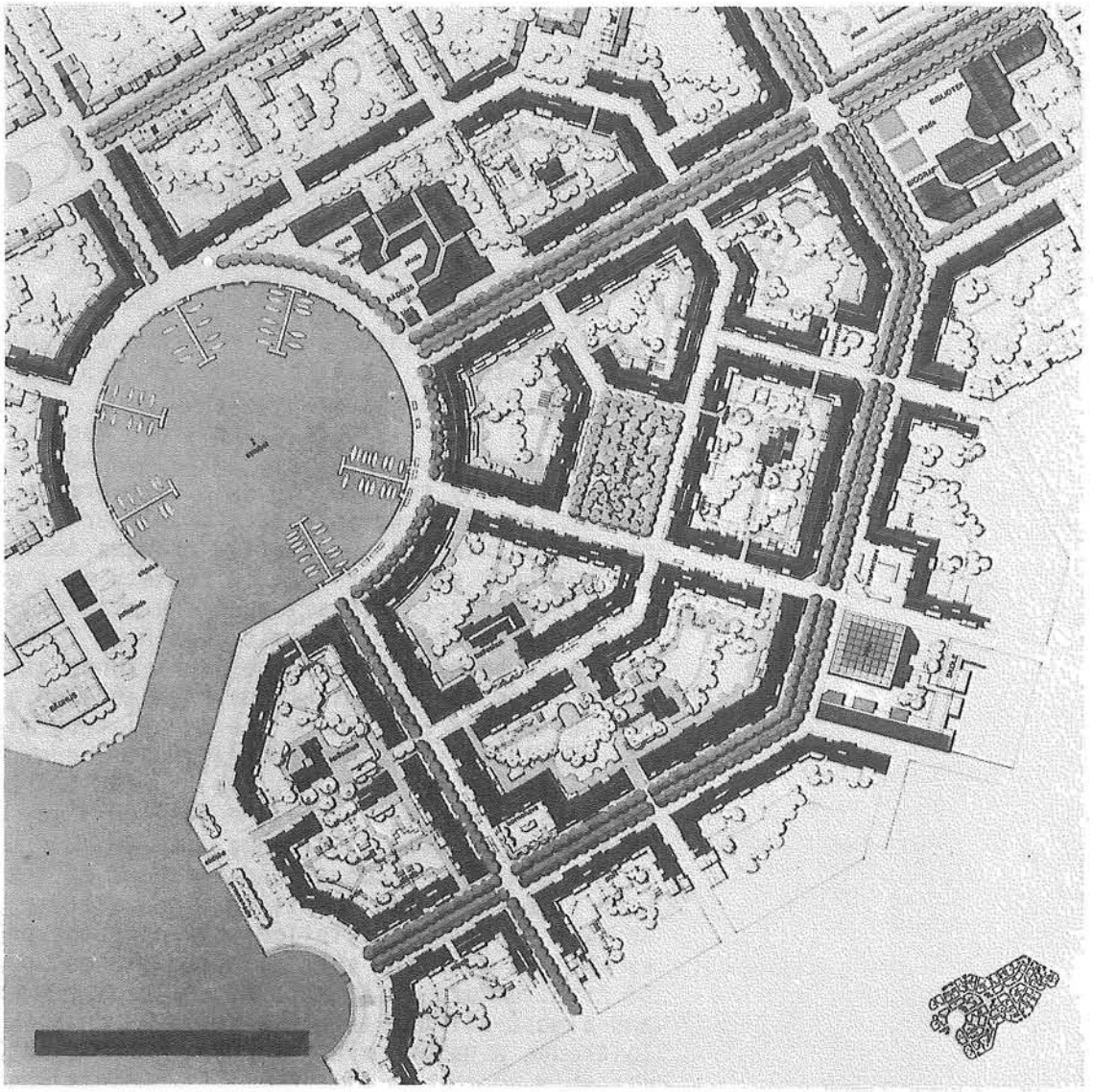
Arkitektskolen in Aarhus, Denmark

INTRODUCTION

The School of Architecture in Aarhus was established in 1965. It was originally planned for 135 students, but now, after 14 years, it was 1.000.
During its short life the School has been subject to a number of changes in its organization and studies. There have been many reasons for this. The growth from a small School into a large institute of higher education naturally entailed qualitative changes too. Changes in the business structure and in society as a whole have necessitated specialization of the original all-round training. Recurrent economic cuts have forced the School to economize with the scant funds at its disposal - and these limitations have made an adjustment of the courses offered by the School very difficult since new disciplines had to be created at the expense of established ones. Finally, the growing awareness of the problems of society since the late 60's may be mentioned as another decisive influence.
By the mid-70's students and teachers of the School were hard at work trying to divise a new statute that fitted in with the new legislation governing the Universities as well as with the special circumstances of the School of Architecture in Aarhus. After the statute was approved and almost all the teachers employed on a fulltime basis (although a number are temporarily employed), the School was able to resume the debate of professional problems.
At the moment, the studies at the School of Architecture are organized along very clear lines. The 5 1/2 years are divided into three phases: a first phase of two years, a second phase of three years, and a final examination phase. In the first phase the student occupies himself with what is common for the entire subject of architecture and in the second phase he specializes. The syllabus follows these lines, in that the student begins by working on general problems in groups and then goes on to carry out individual work.
In order to relate the studies to real life and to make the students independent, courses are mostly structured round projects aiming at the solution of specific problems. Lectures and seminars are then linked to these projects. During the first phase his interests materialize and the student acquires the knowledge and skills that make his transition into society meaningful. In 1979, there were 12 departments at the School offering courses for second phase students, ranging from regional planning to furniture design.
The current professional deb ate has concentrated on the continuity between the first and the second phase. It would appear that the experience from the first phase is not sufficiently employed during the second, whilst in the second phase a lack of basic skills is detected in students graduating from the first phase. The lack

Afdeling for bybygning (townscape) Afdeling D

NEW TOWN IN MOSSØ



Projektet er en tegnet agitation for bymæssige kvaliteter, der er gået tabt i en overvejende statistisk, analytisk zoneplanlægning.

The project is a drawn agitation for the urban qualities that were lost in a mainly statistic, analytic zone planning.

Byen er tænkt socialt, funktionelt og arkitektonisk integreret.

The idea of the project is a socially, functionally and architecturally integrated town.

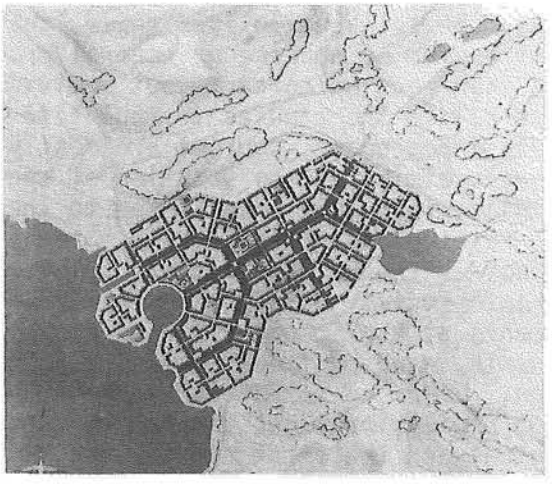
Byen er tilpasset de landskabelige træk og klart afgrænset.

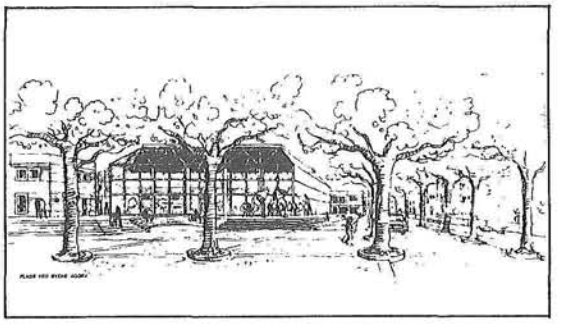
The town is adapted to the character of the landscape, and it is clearly defined.

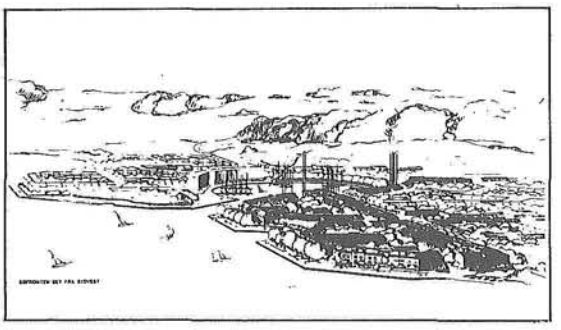
Byrummene er i overensstemmelse med afdelingens bybygningstradition bevidst formet med den hensigt at skabe oplevelsesrige og varierede miljøer.

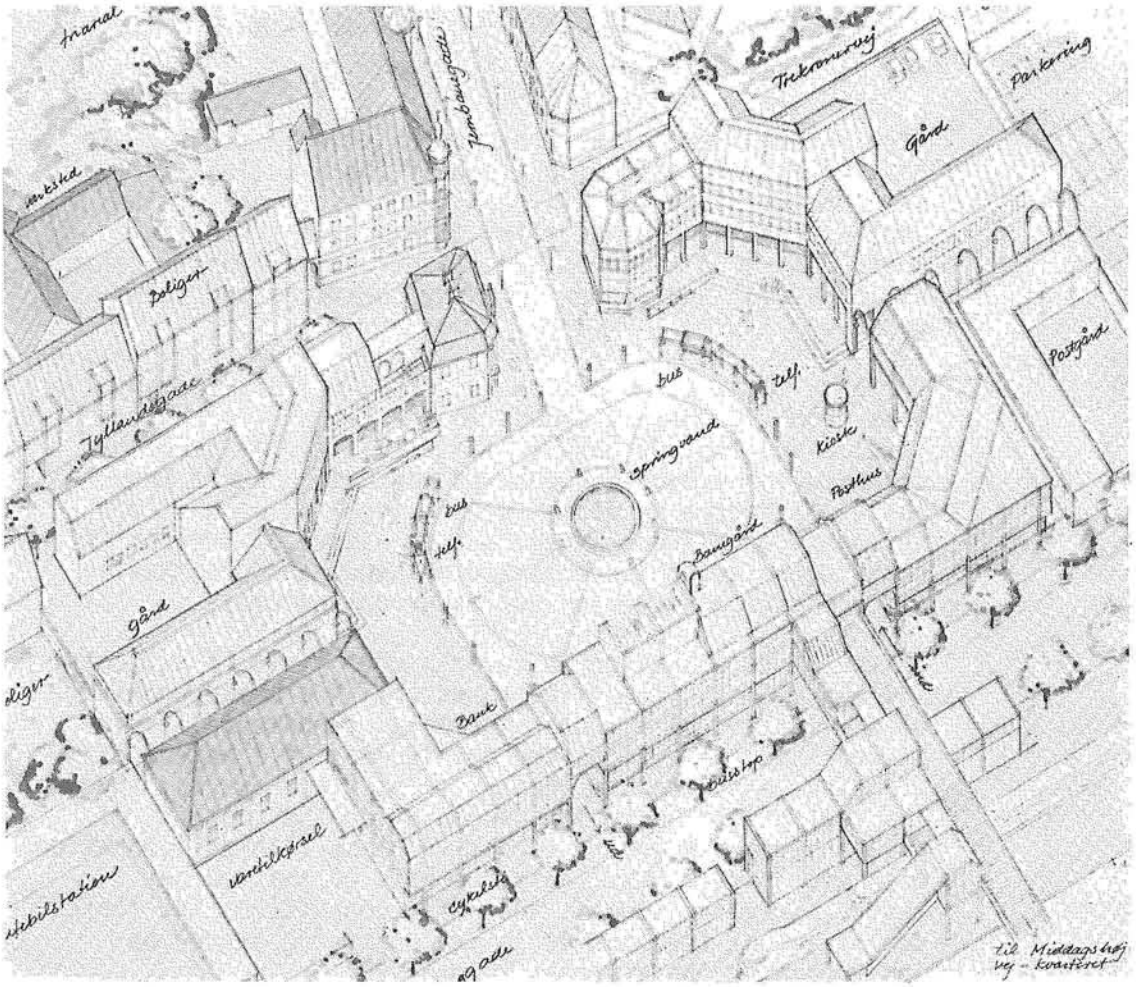
The town spaces are designed deliberately to make varied environments full of perceptions.

Afdelingen beskæftiger sig med by- og bebyggelsesplanlægning ud fra en arkitektonisk synsvinkel med vægten lagt på byens og byrummets udformning.
Uddragene fra de to viste afgangsopgaver repræsenterer afdelingens to arbejdsområder:
Byudvikling og byfornyelse.









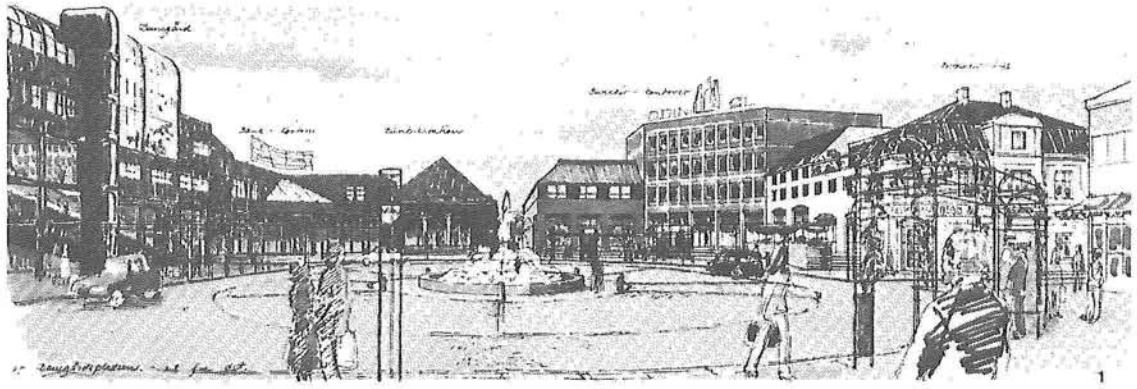
Afdeling for bybygning (townscape) Afdeling D

URBAN RENEWAL IN VIBORG

1

Projektet behandler blandt flere »knudepunkter« i Viborg, banegårdspladsen.

Among others the project treats one of the »junctions« in Viborg, the railway station place.



1

Projektet søger at forene hensynet til trafik- og funktionstekniske forhold med ønsket om at skabe et arkitektonisk spændende byrum.

The aim of the project is to combine the trafical and functional considerations with the desire of creating an architecturally exciting town space.

Banegården og banegårdspladsen etableres i sammenhæng med et forslag til ny omfartsvej langs baneterrænet.

The railway station and the railway station place will be established in connection with a proposal of a new by-pass road along the railway area.

of a research tradition, the non-existing post-graduate studies and the discontinuation of the practical work of students have also all been in focus. Finally, the professional debate has tried to pinpoint those fields, where future initiatives are reasonably called for, such as industrial environment, energy questions and scenography.

PROJECT-ORIENTED EDUCATION

The architectural education in Aarhus differs in many ways from the general trends in the European architectural education. We have a long tradition for problem-oriented and project-orientated education, apart from the final degree no exams, a high level of student's influence on all decisions, a high degree of freedom in choosing relevant subjects and methods, and practically all projects are carried out as group ventures.

In the basic education we cover a wide field of subjects and approaches, attempting to establish a broad knowledge of a multitude of aspects, forming a fundamental topical know-how, as well as the development of a method of studying, enabling the student to pick his own way through the rest of the education, formulating the contents of his projects and entire education himself in collaboration with his group-mates. Thus, the role of the teacher tends to evolve towards that of a consultant, the topical conditions of the studies to an increasing degree being chosen by the students themselves.

Attempting to convey an impression of our day-to-day practice on the basic education, I have chosen as an example the plan for the studies in the present academic year on section 4, one of the four sections in which the basic education is divided.

The students in the 1st and 2nd year of study start out in mixed groups. During an introductory project, a house for an allotment garden, the students of the 2nd year function in the role of a co-teachers for a period of one month. After this, the students of the basic education are divided in separate classes.

Of particular interest in the presentcontext might be the theme-studies for the student of the 2nd year of study:

A master theme, functioning as a framework for discussions, is formulated by the teachers and based on suggestions from the students the year before. The intention is to select a contemporary social problem as an involving starting-point for a discussion, in this case the conditions of living in a newly-built, mono-functional residential suburb in the outskirts of Aarhus.

From this startin-point the students, during alternating plenum and group discussion, modify and elaborate the master theme, formulating more specific subjects, and forming study-groups around these. The study groups

being formed, these continue the detailing of the subject, setting up a schedule for the academic year.

The intention of this process is to develop a capacity of critical, independent practice of study, by way of initiating the formulation of the projects of the academic year by the students themselves.

This process is by no means free from troubles, since the development of their capacity is a slow and painstaking endeavour. Its successful conclusion is dependent on the experience of previous years' mistakes. At present we (the teachers) try to mastermind the process by way of a detailed schedule for the discussions, pinpointing in time where the various conclusions and decisions must be made, and by way of delivering topical inputs along the way, in correspondance with the development of the discussions.

THE DEPARTMENT OF ARCHITECTURE AT THE TECHNICAL UNIVERSITY OF BERLIN

Declan Kennedy

The Department of Architecture is part of the Technical University Berlin, a university which grew out of a highly technically oriented institute, founded in the 19th. Century, but which has expanded to include the social and natural sciences and the arts in the post World War II years. At present, the university has a total student population of 23 000 and is thereby the second biggest institution of higher education in Berlin (West). As there are also many research institutions in the city, Berlin (West) is developing into a 'think-tank' or, at least, a science oriented enclave.

The Technical University is located in a very central area - indeed, just two blocks from the new downtown area at the Zoo. It has, therefore, become one of the focal points for the learning population of the two million inhabitants within the 'wall'.

Descrpition of the Department

The number of students in the Department of Architecture was 1849 in December 1976 (1802 - Dec. 1975) of which 379 (20.5%) were at post-master-degree level, the remaining 1470 were regular students. Of these 320 (21.3%) were female, 241 (16.4%) foreigners and 267 (18.2%) beginners. In the same period, the academic staff of the department had the following structure: 21 professors, 7 honorary professors, 4 adjunct professors, 3 assistant professors, 78 scientific assistants, i.e. lecturers and demonstrators, 20 part-time lecturers and 66 graduate student-assistents. The full-time teacher to regular student relationship was, therefore, 1 to 14.4. This meant that even with a number of students assistents who help mainly in the small group work in the studios, courses and seminars, the lecture system of teaching was reinstated to handle the multitude of students in some subjects. If anything the ratio has become worst since then, through cuts in spending and the austerity programme of the City of Berlin. Furthermore, the need for service lectures became unavoidable as soon as subjects from other departments were to be "integrated", e.g. civil engineering, urban and regional planning, landscape planning, etc. All these extras, with more students com9ng in and fewer staff, began to jeorardize the already strongly criticized project studies system.

The organizational structure of the department was changed, by law, about six years ago, introducing a new mid-level organizational unit between the department or faculty and the chair (professorship). These were called institutes, bringing four or more chairs together into a scientific section of the department.

In the Department of Architecture these institutes received the following names:

- *Institute for Planning of Production and Service Buildings*
- *Institute for Educational, Cultural and Social Buildings,*
- *Institute for Housing and Urban District Planning*
- *Institute for Construction, Statics and Building Economics*
- *Institute for Architectural and Urban History*

Subjects like Drawing & Painting, Sculpture, etc. which were directly under the Department, at first, have recently been integrated with Geometry and Sciagraphy into a new

- *Institute for Visual Communications.*

Decision-making System

Each institute has a "Direktorium", i.e. a directorate council to which are elected on a two-yearly basis, at the most six professors and (according to their numbers) one or two assistents, one or two students and one member of non-academic staff.

This decision-making body is responsible for the co-ordination of study facilities, lectures, seminars, publications, research and other programs (in other words the day-to-day work) of the institute. Furthermore, it makes recommendations to the President of the University on questions of hiring new staff. The elections for the posts in the directorate are held every two years, within each group; and a new professor is elected as managing director by the directorate, as chairman of this body.

At the departmental level, the Department Council is elected in a similar manner, the four groups i e. the non-academic staff, students, assistants and professors each elect their representatives to a council composed of:

6 professors,
2 assistants,
2 students
1 non-academic

The council is responsible for the running of the department in all matters concerning the co-ordination of research, teaching and personnel. It can appoint ad-hoc sub-committees for special tasks and for certain periods of time,e.g. to organize the procedure and make recommendations to the Council in regard to the selection of a new professor, or to evaluate suggestions of the president in regard to structural or content changes within the department. There is one very important permanent committee for Examinations, consisting of 3 professors, 1 assistant and 1 student. It organizes the examinations, makes sure that fairness is implemented and decides on exemptions, etc. It is the final appeal bord of the department for the students who feel that they have not been treated justly. This committee once elected can be recalled, but can

not be interfered with or dictated to by the Department Council in its decisions.

The structural and political set-up, explained above, is the same for all the departments in the university as it is part of the Berlin University Law. Further decision -making bodies at the overall university level have a type of parity where the professors control the majority i.e. the Academic Senate, its permanent committees, and the Kuratorium (members here are half from the university and half from the state). Only the Council of the University has the real parity system for which students fought in the late 60ies: 2 professors, 2 assistants and 2 students from each of the 21 departments, plus 20 members of the non-academic staff group. To go into the details here is not my intention - the main point of importance in the context of this forum is that the University, and thereby the Department of Architecture, is run on a quasi-democratic, self-administering basis where students do not have full parity but have a role to play in the running of the department in which they study to a more or less degree. Unfortunately, there is an increasing tendency on the part of politicians to curb this already-won first step towards democratizazion.

Students through this system have already been politicized - which means they are not ready to be bludgeoned into new situations where their democratic rights may be cut - they are asking for self administered projects. It is important and very necessary - if we want to educate students not only to be technicians or architects, but also to be independent active members of society - to bring an equal parity system of democratic rule into the university and to give them responsibility during their years of study.

Curriculum

The Department of Architecture at the Technical University Berlin does not have a set curriculum in the traditional sense of the word. The main backbone of the manner in which a student studies is to be found in the Study and Exanination Regulations - a document which has to be passed by the Department Council, then by the Academic Senate and finally be approved by the Ministry: Senator for Science and Research of the House of Representatives of Berlin (West).

At present, the Study and Examination Regulations are in the process of being revised, but it will take some time until they are accepted by all decision-making bodies. This means that the current, somewhat out of date, rules have to be adhered to until official acceptance of the new ones has come through. In the presently applicable regulations, there is a choice of three main fields of specialization within architectural studies:

Architecture & Urban Design
Architecture & Construction Techniques
Architecture & Historic Preservation

The student can opt for one or the other in the second portion of his studies. Up to 1978, the final exams for the degree of Dipl.Ing. (M.S.) were taken by approx. 60% in the first named specialization (urban design), 37% took the more technical bent and only 3% finished on the preservation option. Since then a marked change has been seen towards the constructional field to an almost 50-50 with the urban designers. The preservation specialization has dwindled as it was rather poorly staffed and structured.

In the academic year 1974/75, 282 students graduated in all specialities. Many were still unemployed two years later. This has led to the new belief in a technical education, but we think it is most likely more the case that the education is not diversified enough so that a certain amount of flexibility in job searching would be possible. Many argue that we should not be producing so many graduates in the first place, that we should not have such a high intake in the first semester. This is almost impossible to control even if the level of proficiency at school level is used to weed out the applicants, i.e. the numerus clausus admission system.

Without dwelling on the subject, it is necessary to point out that the numerus clausus system of admissions has altered the type of student intake since it was initiated some eight years ago. Beforehand an admissions examination guaranteed a certain proficiency in drawing and in the general visual and spatial capabilities, even though this test was seen at that time as being a rather haphazard method of choosing candidates. The new method which works solely on the marks attained when leaving secondary school (Abitur) has little or no connection to the abilities needed for a successful course in Architectural studies.

The general curriculum, as mentioned above, lays down at least four semesters for completeing the lower portion of architectural studies, ending with an intermediate examination (Vordiplom), and at least four semesters in the upper section plus a further semester for the final thesis and examinations. Thus, officially the student can achieve his degree in nine semesters or a little less than 5 years after school, having started usually at the age of 19 years. In reality, however, the average length of studies in Architecture is approx. 13 semesters. This is not because of a high failure rate, but because the student has the option to enter the intermediate or final examination (after the aforementioned minimum of semesters) when he feels himself fit for it. He can take up to seven semesters for each section (with special permission even more) and can plan his studies himself, taking the necessary courses in the sequence he prefers, in accordance with this capabilities, his financial situation and his professional goals. In a way, the system of studies is a self-pacing system, but again unfortunately new federal laws are trying to restrict this situation.

It is almost impossible to illustrate the work of a particular year, as in a British school, there are no year studios, as such, except many in the lower level project studios. Indeed, it is almost impossible to show the "best" work, as there are no design assignments or competitions on a class or year level. The design work is done individually or in small groups, whereby the students choose their topic, the professor or chair under which they want to work for that particular project and the time scale within which they feel they can accomplish a good piece of work. Most students try to analyse the social, political and economic background of their project in conjunction with the respective members of staff. They will develop their own outline or brief and attempt to design their building or group of buildings within their frame of reference, if they can find the professor or other staff member who will go along with it. For this reason there is a lot of difference in subject matter covered and in the quality of design worked upon under the different professors. Some are more technically and other more theoretically concerned. Some are form dictators and other or more or less advisors of content.

The upper school

Because of the freedom of choice of the student and the constitutionally upheld 'freedom of research and teaching' of the professors, it is almost impossible, even if it were desirable, to set down a curriculum as such. The usual manner is that, apart from the Diplom thesis where the student or group can decide upon the subject matter at will, the teachers in the upper section set up projects on a particular subject or on a particular area, for one or two semesters and run a theoretical and a design seminar on this theme. These are usually announced at the beginning of a semester, the student can choose the project in which he wants to participate, after an initial introduction of what the different projects are attempting to handle. The student can, of course, choose a design project on his own, directly tutored by one of the professors or his assistants.

Whether individually or in a project group, the student has to complete four main design projects with different special emphasis before applying for admission to the thesis period. For instance, in the urban design bent, he must have completed

a) a design-oriented theory paper (can also be urban);
b) a design of a building complex (free choice of size, subject, site, etc.);
c) a design with emphasis on construction and detailing;
d) a design with all its site planning implications.

The lower school

The lower section or school, or what you might call the firat four semesters, is somewhat similarly organized as in the upper school, but with a lot more 'musts' and a lot more direction on the part of the teaching staff. In the last few years, the lower school is being organized so that formal introductionary lectures do not

run divergently or in a parrallel manner beside one another, but converge into the project theme in an attempt to achieve a project orientation of all design- service subjects. This means that, for example, the student learns sociology, planning methods, construction techniques, the elements of urban planning, of building law and of urban and building economics - more or less - within the design projects over a period of four semesters. If the course has to run parrallel, then the teachers are asked to exemplify the point being explained on the case of the project, as far as possible.

The interdisciplinary approach is easier said than done. There is a lot of opposition, especially from those who fear non-recognition of their achivities and who expect the students to have such problems of recognition as a professional architect after their studies. It calls for the dropping of, or less emphasis on, certain subjects - it does not always allow as much time for design as was formerly the case. It calls for coordination and co-operation among the teachers at different phases and periods of time. Furthermore, it calls for coordination and co-operation among the teachers at different phases and periods of time. Furthermore, it calls for rethinking, especially in didactical methods and in the pedagogical approach.

Urban design is a separate seminar or lecture with exercises periods, as laid down by the studies and Examination Regulations, but it is often the catalyst for a project taken in a integrated form with one or other of the four design projects in the upper school mentioned above. Further subjects, can be done seperately too, but the more progressive members of the teaching staff are trying to integrate them as far as possible, e.g. history or theory of architecture, urban design, economic and social conditions and their background theories, financial and legal affairs pertaining to the project and to the building industry as a whole, etc. The subject matter of the final thesis often stems from these so-called peripheral areas.

The Diplom thesis can also be done either individually or in a group of up to three persons (in exceptional cases four on five will be approved), whereby the design topic can be choosen by the student, has to be approved by a professor of his choice and can be either a practical drawn-up design or a written theoretical treatise - or a combination of both. The thesis period is six months, with a set date for starting and finishing, and is followed by oral final examinations in design, urban design, building construction, theory of architecture and one elective of the candidate's choice. This is a final checking of the students' understanding and ability to take over his responsibilities as an architect.

There is quite a fluctuation among the saientific assistents within the Department of Architecture,

as the University hires these for three years with the possibility of a one-time two-year extension. The professors are given a life tenure contract, within the German civil service system of tenure, as all universities are state-run and state-owned. The idea behind this two-tier system was originally to afford security for the professors and to bring in new blood and ideas through the system of ever changing assistents. It is also a way of supporting the next generation of scientists as the assistents usually have, a third of their time set out for their own research which most often leads to the completion of a dissertation, alongside their teaching and self-administration responsibilities. In the architectural department, however, few assistents have managed their doctorate in this given time, as the design tutoring is very time consuming and the political and social implications of Architecture are inclined to call for a greater involvement in the community than in other more technically oriented engineering activities. The teaching becomes so extensive in this combination that more time than the given third is seen as necessary by the assistents themselves.

Most of the professors have an architectural office or work as partners in a consulting firm. However, as Berlin is now becoming somewhat like an island and as building activity has decreased in the last few years, many of the professors are forced to take on contracts in West Germany or further afield. This can be seen as a disadvantage for both their teaching and research responsibilities at the university, although it is definitely necessary to assure that professional practice is not wiped out by the perchance political situation. The balance between practice and teaching is always hard to find.

The manner of determining the capacity and teaching loads of university teachers is unified in West Gemany and West Berlin. It would be too complicated to deal with this question here, just let it be said that the savings campaigns in public expenditure have hit the Architectural Dept., as it has hit all other public institutions in the last few years. The department continually feels that it is understaffed. On the other hand a weekly requirement or 6 teaching hours before a class for the professor, and 4 for the assistent, is almost unheard of in any country.

STATEMENT TO THE EAAE BERLIN FORUM

Architectural Student Organisation
Department of Architecture
School of Fine Arts Hamburg, Germany

AIMS OF AN ARCHITECTURAL STUDY COURSE

Early perception of the social role of the architectural profession for the new student through problem-oriented projects.

A project embraces more then merely the design of a building through the recognation of this social role.

SO-CALLED PROJECTS

There are many courses which are falsely named PROJECT, having nothing to do with that which has been formulated in the aims of an architectural course. The negative aspects of these so-called projects which we want to get rid of, are

- no co-operation among the staff,
- no integration of subjects,
- staff not forced to think about didactics,
- staff usually too old,
- rejection of theory, producing rejection of technology,
- premature isolation of study groups,
- no holistic discussion or climate in academic studies.

Research-oriented learning must be an established procedure of project-oriented studies from the very beginning. One has to proceed from the fact that, ev en without specialized knowledge of a particular subject but alone on the basis of their life and (partly) professeional experience, students are in a position to recognize problems to analyse them and to ask the question. This must be made into the basis for cooperative work with the teaching staff and, in the ideal case, also with the student assistents. Systematic topical content should be learnt in researching into and according to context of the problem and covered by the curriculum (and not according to a schedule of studies which is a sequence of uncoordinated learning material: stubjects) so that the architecutral student can fulfill his role in society later on in his professional practice.

Those hostile to project-oriented studies are of the opinion that, at first, a certain amount of such subject-material has to be taught, before a student is allowed to think for himself.

WHAT DO WE MEAN BY PROJECT-ORIENTED STUDIES?

Project-oriented studies is a system of studying which is practice and problem-oriented and interdisciplinary in which the teacher and the student together define and experience the social impact of their activities.

HOW DOES A PROJECT WORK?

Interest and zeroing in on a problem has to determine the learning effect and has to be supported and re-

awakwned continually through responsible self-determination of the work. Through co-operation between students and staff, enjoying equal rights, a mutual correction and control can become possible as well as a new person to person criticism.

INDEPENDENCE, CREATIVITY

Parallel seminars which are also run in a cooperative manner serve as a way of achieving a more systematic and in-depth treatment of the particular problems (the problem orientation of the seminar). Group work in which individual as well as collective learning takes place can determine the study system from the start. Thereby, independence, creativity, readiness for communication and co-operation will be promoted.

Appropriate to the problem the work on a project can make it necessary to set up a concrete project schedule which covers at least the following points:

1. Identification of the societal issues: search for the objectives and definition of aims.

2. Formulation of the task: definition of the subject matter within the overall objectives, organisation of contacts with user, and other socially relevant, groups (unions, burocracy, action groups, etc.).

3. Task completion: working out a time schedule, including the possibilities of collective and individual efforts; fixing phases according to an outline; development of an outline, taking into account the relationships in planning an implementable schedule; organization and building of subsidary groups with built-in correction appropriate to the processes which are taking place, search for informational sources, documentation of the working phases in which the aim and the scope are important elements each time.

4. Summary of conclusions and sectional conclusions: substantive, methodological, didactic and political

5. Regular plenary sessions should be held to promote a wide exchange of information among the groups.

STATEMENT OF THE WEST GERMAN STUDENT CONFERENCE

(Bundesfachschaftenkonferenz - BUFAK) Nov. 1-4. in Aachen, shortended and traslated by Andreas Orth, HfbK Hamburg and presented in written form at the EAAE Berlin Forum, Nov. 9. 1979

1. The fundamentals of projects are concrete, society-relevant events.
2. Comprehensive interdisciplinary education means inter-disciplinary cooperation of students and teaching staff from different facilities (sociology, psychology, economics, fine arts, town planning, architecture, etc. etc.)
3. Practice must cover: criticism of the picture of the professions, criticisn of the content of work, the method of solving porblems and the present-day involvement of the effected people in decision-making.
4. Projects, in practice, can only be worked out in close contact with the users.
5. Orientation of teaching forms and content must be geered to the requirements of the projects.
6. Science is not impartial - it is necessary to realise this and search for the resulting party and political action, which is often behind the scenes.
7. Research-learning must be caried out and exempliefied as a method; the main objective is not the learning of single facts (they change anyhow through the development of sicence), the object is the learning methods which enable us to apply independently the newly developing subjects of science for more human goals.
8. Reflections must be made on one's own learning and one's own action.
9. It is necessary to replace preformance pressures by self-motivating systems for students.
10. It is necessary to insist on self-determined study-programmes, free-choice of project mentors, group work and only one group mark.

COMMENT

The big building instustries also want a "project-studying", but this is only for management training and absolutely different to our interests in project studies and the interests of the users; the West German Ministeries of Education and of Science protect the management-type project-studies by supporting them with grants, etc., while other authorities (everywhere in the FRG) are destroying the project-oriented study systems which were instituted at the beginning of this decade.

(This version has been slighly edited to make the English Translation more understandable).

EXHIBITION

of Projects of
many Schools of
Architecture
in Europe

OPENING:
Nov. 8th. 1979 18°° Foyer
Architecture Bldg. Ernst Reuter Platz

TUB EAAE

AUSSTELLUNG

von Projekten
vieler
Architektur Abteilungen
Europas

ERÖFFNUNG: 18°° Foyer
8. Nov. 1979 Ernst Reuter Platz
Architekturgebäude

The Role of the Project in Design Education

Some notes on the proceedings of the Berlin Forum, November 1979. David Coupe

A New Format

Throughout the planning of the Berlin Conference, it had been the concern of the organisers to take the EAAE Forums into a new stage of development. Although it would be untrue to say that the subjects of previous meetings had been arbitrarily chosen or incidental to the proceedings, the main objective had certainly been to give an opportunity and a talking point to enable staff and students to begin a dialogue, to orientate to each others problems and methods and to construct a framework for future liason. It was now felt by many that this introductory function of the Association had been effectively achieved and the time was now appropriate to make use of this framework in Berlin to attempt a thorough investigation of a topic of immediate importance and if possible, to develop a reasonably clear concensus on the subject.

Whether the Berlin Forum achieved this objective will be judged by the individual participants according to their own expectations, but it can be fairly claimed that the Association was fortunate to have the assistance of Professor Declan Kennedy and his team at TU Berlin who put in so much careful effort in preparing the ground and directing the proceedings with verve and imagination. Much thanks is due to him and the University for their co-operation and hospitality. From the moment of arrival, it was apparent that the call for participation had evoked a considerable response. More than 150 teachers and students had arrived, from 45 schools of architecture throughout Europe from as far apart as Sweden in the North, Malta in the South and Greece and Turkey in the East. Once again however, teachers from countries of the Eastern European Block had not found it possible to attend and to that extend, the perspective of the conference was diminished. In future, the Association will need to do more to assist and encourage Eastern European delegates to participate and share their opinions and problems. A similar representation will need to be made toward the French Schools who were poorly represented — their participation is essential to the balance of debate on a European scale.

Exhibition of Projects

The Conference was supported by a very large exhibition comprising descriptions of specific design projects carried out by individuals or groups at the schools. 44 projects in all were displayed and for those who could make time in the programme intervals to get into them, they provided an illuminating, if somewhat uncertain, insight into the contrasting approach and type of work currently in train in European schools. From observation of this exhibition alone it was clear that attitudes to the role of the project are multiple and widely divergent. Whilst most displays clearly portrayed the character and quality of both subject and solution, very few gave a description of the method of work or how such a project related to the school's curriculum. Critical evaluation of the project educationally was also not generally included and it was therefore not easy to relate the exhibited material to the arguments put forward in the ongoing debate. Nevertheless this visual backdrop to the Forum, featuring the Spiritual, the Poetic, the Political and the Pragmatic in close order, provided a remarkable example of the pluralism of architectural preoccupation.

Participation in an international conference gives a clear example of how our technology has outstripped our ability to make use of it. Put one academic in Berlin and one on the Moon and ask NASA to connect them by 'phone and the means would be quickly provided. But then ask them to engage in a useful dialogue for posterity, and then problem of communication would really begin. The difficulty is not so much the Language barrier, but rather our assumption, having adopted a common language, that the words we use will mean the same thing to both parties. Veteran EAAE delegates will know that this is not often the case. The very title of the 1979 Forum contained the suspect word 'Project', the meaning of which would need close definition if a sensible discussion was to ensue. In this respect, an unerving incongruety emerged in the introductory papers and the debate following was never fully cohesive, but everyone who had doubted that the subject on the agenda was of critical and immediate importance to European teachers was to be rudely awakened.

Introductory Papers

The Forum was opened by three introductory papers given in turn by Jill Jones of the Polytechnic of Central London, Kees le Nobel of the Technische Hogeschool Eindhoven and Peter Jokusch of the Gesamthochschule Kassel. Each speaker described the development of project studies in their own schools and the educational principles underlying them. They also referred in detail to the problem of sustaining their educational methods and thus the quality of studies in the face of increasing economic pressures. The papers focused attention directly on several critical issues which later came to dominate the discussions.

Jill Jones began by nailing her colours firmly to the mast "The role of the Project in Design Education is obvious and central — how else can one teach design?". A forthright opening, but not altogether rhetorical, for as it later became clear, although the role might be obvious to the majority of architectural teachers its necessity may need to be explained and justified to others who now question its economic viability. In a wide ranging and highly literary discourse, Mrs. Jones held up a mirror to the nature of project work generally. In proposing a definition of the word Project, she led her audience through an interestingly objective examination of the antecedents of this mode of learning and later developed her view of the sensitive balance to be achieved between means, methods and ends in the execution of project work, at least as it is conventionally understood and practiced in the United Kingdom.

* *The Experience of Designing must remain the core of architectural education*
* *Project tensions stiumlate students to question accepted ideologies*
* *Project Orientated Studies needs expansion, not contraction, of resources*
* *POS should be a tool among others, not a universal aim*
* *Real life experience is critical, but what is real life anyway?*
* *Multivarious project work, must remain the central axis of design education*
* *Prevent architecture becoming an exclusively utilitarian discipline*
* *Analysis + re-use of typologies = Project efficiency*

Free Projects — BAB Style

In contrast to the first paper, that of Kees le Nobel led us abruptly into a detailed consideration of a specific learning technique developed within his faculty. At this point it became evident that for some European teachers, the term 'Project Learning' no longer held its general application and had come to mean, quite specifically, learning by involvement in real external problems whereby the methodology and curricular inputs are controlled and stimulated exclusively by the exigencies of the problem as they are identified in the field. This distinction became more acutely defined as the meeting proceeded. Whereas some delegates were prepared to accept a wide interpretive debate of the subject, others felt strongly that the future protection and continuance of this particular project system was the critical factor for discussion.

For those not directly informed of this apparent crisis, Professor le Nobel began by giving a useful history of the development of the 'Free' project within the Bouwkundig Adviesburo voor Buurtbweoners (BAB) — Architectural Consulting Bureau for Neighbourhood Groups, a part of the Section for Urban Renewal at TU Eindhoven. He described how, arising out of the revolution of the late sixties and the consequent democratisation of the educational system, the emergence of self-help action groups came to provide the opportunity and stimulus for the adoption of community supportive project work as a key element of architectural education. He went on to explain how, once established albeit from a small beginning, the process was developed as a scientific educational tool involving a multi-disciplinary team and having at its centre a new concept of education. In supporting his claim that such a teaching mode was crucial to the learning process and to the equipment of the graduate, Prof. le Nobel offered his audience a detailed description of the structure, progression, management and evaluation of the work carried out within his unit. In conclusion, he brought us to the difficulties now facing Free Project work in general and the continuance of BAB in particular: the problems of passing knowledge on from one generation group to the next without allowing the process to become sterile; passing on basic political motivations to later groups who are not so unilaterally committed; the recent external restructuring of his schools curriculum with the result that the time and opportunity for such liberal project work has become practically impossible. Prof. le Nobel clearly saw Problem Orientated Studies as under siege — an opinion to be taken up strongly by the third speaker.

The report on the Berlin Forum, including the full transcripts of the introductory papers will be circulated from TU Berlin to all conference delegates. Further copies may be obtained via the EAAE Secretariat in Brussels.

POS & Links with Reality

Under the title 'Links with Reality', Professor Jokusch reaffirmed the essential values of Project Orientated Studies (POS) — that is problems drawn from and analysed within a real social and political context — as a basis for architectural education. He referred to the need for the student to continually experience himself in relation to the real world so that he might develop an objective and practical perception of society and its needs. If the predominant motivational virtues of POS are to be sustained, it is important for institutions to accept that a systematic build up of knowledge and skill can and must be aquired via an inductive, (i.e. via case application) process — architecture being in any case a mainly unsystematised science. In drawing attention to the operational differences between POS and curricular orientated projects, Professor Jokusch described the growing problems of providing the necessary multi-disciplinary teaching and guidance for the former mode. If POS is to be approached realistically, both the problem and the means of solution have to be recognised as essentially multi-dimensional. However, it becomes increasingly difficult to provide a sensible disciplinary balance in project teams, co-operation between departments (even within the same school) is no longer straightforward. Nor is that problem simply logistic, it is not always easy to establish commonly acceptable project goals for students following different courses. In these respects, Professor Jokusch declared himself pessimistic toward the current trends in management of architectural studies.

Plenary Proverbs

Following the discussion groups leading on from these papers, members were called together for a concluding plenary session. Professor Kennedy required those reporting from the discussion groups to summarise their findings into three cogent sentences. This developed symptoms of trauma in some of the raporteurs, but nevertheless all bravely attempted to comply with his plan and some of the 'mottoes' thus provided are headlined here. The ensuing discussion was memorable for its vigour and sense of urgency — qualities not characteristic of previous EAAE Forums.

It soon became clear that several group discussions had been hampered by a reccurent problem: that useful and concerted opinions could not be developed without a clear understanding of the size, structure and resources available in individual schools. This is so basic to discussion that it was generally agreed that the EAAE should attempt to provide a continuous cross flow of comparative organisational information on European schools. Some members felt more strongly that the pressures on project teaching (particularly POS) were so acute that the Association should prepare an authoritative position document to assist schools in their battle to retain dwindling resources. In this respect, it was suggested that an adequate norm for staff student ratios might be proposed and promulgated internationally.

Although the case for POS had been firmly made, delegates were not generally motivated to accept them as the an exclusive, or even necessarily predominant feature of architectural education. Indeed it was evident from the 'key sentences' offered that variety and variability of project mode was considered an essential basis of curriculum design. It was affirmed by all, however, that Project work, of whatever type must remain at the centre of design education. Whether the problem and solution are real or simulated, there can be no substitute for designers who need to consistently 'learn by doing'. The argument that architectural project teaching is highly and unneccessarily, resource intensive as compared with methods used in other courses needs to be firmly refuted. Although staff intensive, it might be claimed that architectural education conventionally places comparitively few demands on capital equipment. Nevertheless, if our methods are to be subjected to increasing economic scrutiny, our justifications need to be consistently presented.

The discussion was concluded by the statement presented on behalf of a group of students who felt obliged to reserve their views for a concluding announcement. They stated their firm opinion that their freedom to devise and programme project studies for themselves had been extensively eroded and unless EAAE could move politically to assist the reinstatement of their democratic rights, the Association could only be regarded by them as a conspiracy of teachers up to no good. Their views were not fully supported by those participating in the Forum, but the point was well made that if EAAE is to become more relevant to students, it will need to find means of involving them more directly in the planning and execution of its policy and activities.

DISCUSSION GROUPS

A :	Room 804 b	: Leader: Jill Jones	von Bebber Gubitosi Heesen Henk Müller Paul J. Talbot Walker R.
B :	Room 804 c	Leader Geoffrey Broadbent	Barch Denraad Bertels d. Christofaro Kaldarar Langdon Riley Robson
C :	Room 804 d	Leader Peter Haupt	Bartle-Tubbs d. Franciscis Göran Jubb Komossa v. Randen Sharp Wild
D :	Room 05 Deutsch	Dietmar Grötzebach Leiter	Barends Beigel Besch Enoenler Frisendal Matoff Renders Vetter Zumthor
E :	Room 712 c	Leader:Mogens Breyen	Doell Fassbinder Louw H.L. Reismer Silver Søfelt Stenti Symes
F :	Salle 610	Leader Myra Warhaftig	Barthelemy Gilliaux Hedborg Savade Smulders
G :	Room 606 b	Leader Herbert Kramel	Brown Danby Kuff Manzen-Long Bone Molenaar Pultar Sloutouber Tozzi

DISSCUSSION GROUPS

H :	Room 206	Leader Peter Jokusch	Aarts Appleby Ciamara Habraken Knudsen Markham de Rosa Serneels
I :	Room 401 b	Leader Kees le Nobel	Bere Cappiello Coe Krüger-Hespe Medcalf Salander Smith J. Yolal
L :	Room 312	Leader Tony Morgan	v. Buttlar van Doiron Esbjörnsson Esdaile Korda Louw J.J. Stefanovic Thennissen
M :	Room 812 b	Leader Doug Clelland	Briscoe Etz Fries Geurst Gorling Paul M.A. Uyannik Wellander
N :	Room 802	Leader Stuard Knight	van Duin Erbstösser Faber Larsvall Lilja Morta Turner van Winden
O :	Room 401 a	Leader Phillip Geoghegan	Esdinel Haenlein Houben Izzo Padamsee Pruscha Vrankx Walker C.

These groups were set up immediately after registration. The exact membership of any group is pretty well unknown, as it was specifically stated that no one was forced to join any group or committed to a particular room, other than the group leaders. (Ed.)

RESULTS OF THE DISCUSSION

compiled by
Declan Kennedy
Professor, Department of Architecture,
Technische Universität Berlin, Germany

At the final plenary session, each of the twelve discussion groups gave a very short report (supposed to be only three sentences) on the work achieved during the group meetings on the day before. These reports were key-worded and chalked up on the blackboard. The "keywords mosaic" gave an excellent picture of the great variety of considerations that come into account when talking about project oriented studies: which means, for one, that there is a great variety of sorts of projects.

It also means that there are great differences in the progress, pitfalls and problems in the practical implementation of the project study concept that no single statement - as recipé or how-to-do-it formula - could ever be made by the FORUM or the EAAE-AEEA.

Background

Obviously the general social and economic conditions of the country, indeed the region, will have an effect on what can be, and what is being, offered in a particular architectural school. The differences in the background conditions for project-oriented studies were seen, by the participants of the conference, as being an enrichment to the discussion on educational possibilities in Architecture rather than a hinderance. The variety of combinations of prospects and problems, of their analysis and suggested solutions, brought up in the discussion groups, produced a vareity of aims, objectives, approaches, methods, processes and, of course, results which were being applied by the different schools at different levels of architectural education.

Even the general building conditions and the planning and building regulations were seen to differ although a lot of similarities were also discovered. To give an example, it was seen that most European countries have highly developed fire precaution regulations which are often seen as dampening aspects to design creativity, especially by the student. Here, it was in the varying priorities from one country to another which brought out that which could be called the cultural bias (or the culturual setting) to be found behind the detailed solutions for fire escapes (how many needed?) or fire truck access (how far away from the front door?), etc. Discussion on the cross-cultural level made it difficult to find frames of reference from which one could evaluate similarities and dissimilarities in school and course structures (e.g. Group H). Social intervention projects, as described by Kees le Nobel in his keynote address, to be found elsewhere (as discussed in Groups C and D)were seen as being significant, especially if real physical co-operation between students and effected users ensues from the project approach.

Two schisms must be accepted when discussing the "project" (to quote the report of Group M): Firstly, Britian was not so deeply affected by the political events of the late 1960's as was the case in all other European countries. Secondly, German and Swedish schools have a particular and serious crisis with respect to the understanding of the potential of the "project" as compared to other European countries. The "project" is an acceptable way to develop learning programmes and it should be understood in the terms of its diversity as understood by the word in English. This would mean, therefore, that the words "projekt" and "projektieren" in German should be integrated into one diverse meaning for the "project" mode.

Aims and Goals

In the plenary discussion, the aims of any field of study was neatly defined by Eva Fries of Stockholm as

- *scientific knowledge,*
- *technical skills and*
- *social values.*

For the case in hand - architectural studies - it should be quite clear and simple to define what scientific knowledge, technical skills and social values have to be transferred to the students. But here is exactly where opinions differ from teacher to teacher, from school to school. It is the third point that is not always accounted for by the architect in charge of a studio course or a lecture. Here is where most participants drew the line between project learning and learning in more traditional ways.

Group I went one step further to say that one of the central concerns of architectural education must be the development of creative judgement in the application of increasing knowledge and skills as well as the aquisition of a set of values which enables us to direct this judgement in a culturally relevant way.

Traditionally, architectural schools have been founded and are still continuing their teaching activities on a concept of knowledge building - this is all very well but not enough. To take just one area of the teaching activities, architectural schools need to delve into the understanding of the problems of living and working and not just the techniques of providing houses and factories. Jorge Espinel, in seeking the possible solution in the plenary session, saw the necessity of an activity curriculum instead of a subject curriculum in architectural studies. He seemed to think that this would give the "project", especially in Britian, a new social goal and quite a differnet bent than is practised nowadays. The proposal of Group B was that whilst our universities have to include ideas and methods from the sciences and the humanities, the core of architectural education which helps to establish what we need from

other disciplines, must be the experience of designing in school and also in the office. While including social learning, we must not spend too much time in defining the problem of the project, thereby never getting to the stage of proposing possible solutions - this being the point of feedback, especially if the project is working in a real-life situation. At this point, some very technical thinking overpowered the discussion, until again others tried to put the technical aspects into a proper relationship within a discussion of values. Group B put up the believe that the most efficient way of learning to design - at all scales, from the urban form through the building stages down to the constructional details - is by the analysis and re-use of typologies. The use and re-use of typologies reviews the psychological tensions arising from the old "master/pupil" relationship and also helps define what architecture is within the prevailing ideology.

Definitions

The project, as understood by some of the English people in Group M, is a mileau, a vehicle and a life situation within a school of architecture in which it is grounded and should actively encourage the self-development of students and teachers through the process of learning, known as the "project". It should not be interpreted as a goal in itself. Furthermore, projects should be varied in their type, should be capable of allowing individual students to develop their work in diverse and differing ways. It should be initially agreed and then developed by means of a dialogue between students and teachers.

Group M also believed that there was no unifying model to architectural education or to project work, and that diversity of work between schools in different countries, and in Europe generally, should be actively promoted by the EAAE-AEEA, together with diversity of project intentions and types within each school. Each school should be autonomous. Project and curriculum work need not necessarily be community based nor based on real-life situations. They went as far as saying that it need not be based on rigorous research, but most importantly, it need not be based on the vagueries of the "market". The group felt that all such views were possible, but not necessarily desirable.

Group N went one step further in saying that project based studies must aim at diversity of work both locally and nationally. The model, offered by schools in the United Kingdom, is not an international phenomena and it should be. Whilst accepting the definition of "project based studies" as group work / research oriented / related to 'real-life' / self-determined, its application may militate against diversity, e.g. 'real-life' may not vary nationally (or internationally) to a great degree and, in any event, may accept market forces as a dictate. Similarly, the self-determination of a particular generation of students exhibits often a high degree of con-

formity and is limited to their prior experience of how much they could participate in the running of their previous educational environment.

Similar finding came out of Group G as regards this point: while it was tempting to define the role of the project, the discussion in this group made it clear that there are various roles project-oriented work can play in an architectural educational programme. Students, teachers and the project are to be seen as three variables changing their roles and functions throughout the educational process. In this group a general difference was established between the role of the project at the undergraduate and at the graduate levels. At the undergraduate level, it is student oriented - the project is the vehicle which carries the learning process. At the graduate or research level, the role is reversed - it is the results that count. Student and faculty are titles with relative importance, since both have to contribute to the overall goals established within the project.

Learning Process

The view was articulated strongly by Group A and reinstated by many in the plenary session that the product was the best evidence of the proceeding process (indeed that process seemed to become more elusive as we talked about it) but this was not the majority view -- all were concerned to nurture the process one way or another.

It was generally felt that the relationship and interaction between staff and student, experienced in B.A.B. in the T.H.Eindhoven was a model that should be studied. This model could not always be transferred to other schools, because of the size, the context and the cultural setting of this group within this department. However, if these factors are taken into account and put in relationship to the economic and political situation in the Netherlands, light could be thrown on what particular aspects are indeed transferrable to other schools and what parts of the model will not apply in another cultural or economic setting. More of this sort of cross-cultural research in teaching and learning methods in architecture and urban design were considered desirable. One aspect of the B.A.B. procedure was accepted as being generally applicable: the importance of non-professional people (residents, users, etc.) in planning and implementation, not only in the practice of architecture after one's degree but during one's studies -- indeed from the word "go" in the learning process.

Some participants recommended that every architectural school open its doors to co-operate with residents, users of buildings, people effected by planning, anonymous clients, in some cases - the general public, that is, all those who have little or no opportunity to voice their opinions about their built environment. This can easily be done in the type of project which commences from a social need, but can also be attempted in almost

every "real-life" or simulated learning process.

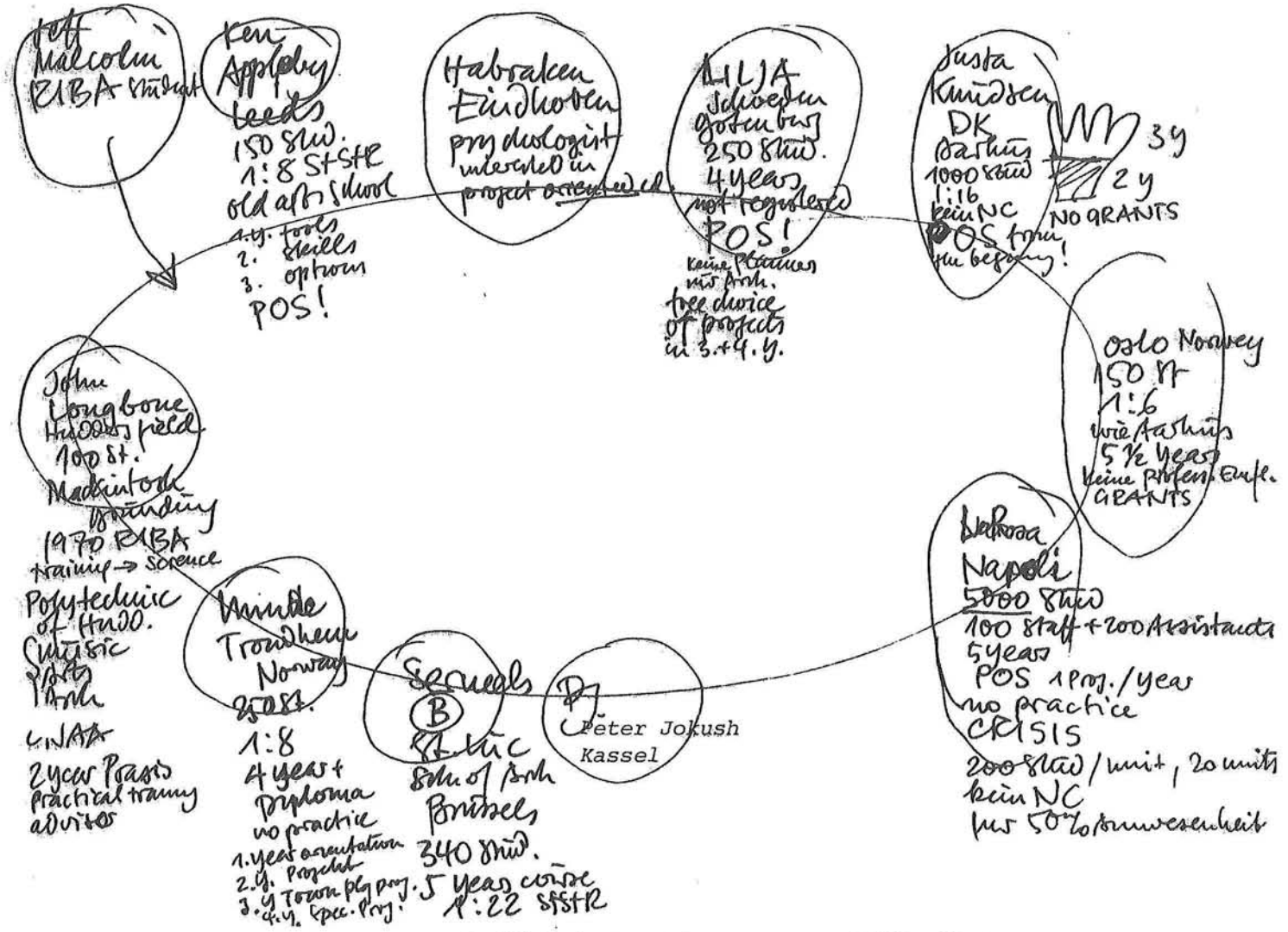
Alternatively, a school of architecture could be set up as a working place where the above mentioned people could come in and have access to the concepts and the tools of change going on among the students and the profession. Here they could then get a good idea what the intentions are behind planning and improvement proposals for their housing area or whatever it is that is worrying them. Such a situation demands a great deal of flexibility and openness on the part of the school. It could happen in the present situation of schools as for example in Denmark where the traditional academic restrictions on admission have more or less been waived. This type of activity could also be set up as a service which the school would provide for the community, parallel to the process within the project work.

Here the question of "excellency" arose once more having been highly controversial in some of the discussion groups. Many schools felt that the staff/faculty knew best what excellency was in architectural design and who had the ability for it among the students. Some schools would include outside professionals on a jury or use external examiners to support their assessments. Few were ready to accept that the student too could exercise and learn the skill of assessing himself in conjunction with his teachers. This went back to the fact that still many a school practice the system that the staff/faculty define the problem and prepare the brief of what they call the "project". This was considered just a design exercise, mainly by the Dutch, German and Scandinavian schools, the more liberal English wanted to include it in the spectrum of what can be called a "project". In the GHK Kassel, Germany, the students not only have the possibility but the right to define what their problem is and what their project will be. And Kassel is not alone in this respect.

Staff-student Ratios

If a school is to operate on this sort of level, then project-oriented studies needs lots of capacity (academic staff, support facilities, etc) and lots of co-ordination (possibly a project centre or office). This was one of the statements which came out of Group E, an argument which set off further discussion in the plenum about the proportions, the needed resources, the limitations of governmental or other funding bureaucracies all based on this magic relationship: the staff/student ratio. Group A suggested that the beneficial results of the student numbers expansion after 1968 (not only in Copenhagen) led to considerable discussion on the right size of a class in order to provide the ideal ambience for studio design project work (whether or not this is group organized). Some went as far as to say that the optimum for educational coherence is that which is self-visible - that is, gathered in one room - such as 250 - but as someone else said: don't let's get size out of proportion.

The first thing that had happenned in Group H was that an exchange of ideas around the table brought out the differences and similarities in schools and course structures. The range went from 100 students at Huddersfield with a 1:8 staff/student ratio to Naples with 5000 students and a ratio of 1:18.



Staff/student ratios are very difficult to compare, as alone the difference between own support facilities and personel or central university administrative systems can throw the comparison off beam. It was therefore dropped as a subject, but the concern about the restrictions, pending project-work, by the bureaucracy using staff/student ratios as comparative arguments, was seen as worthy of further discussion. Project-work is seen in the eyes of the bureaucrats as being too staff-intensive. This can only be argued against with hard facts. The use of comparison with teaching methods in chemistry, physics, electrical engineering or such is irreal. One only has to think of the millions they get for equipment, as Aage von Randen said, which is the heart of their project work and which have to be renewed every few years because of

rapid obsolesence. What is needed in architectural schools must be calculated in a different manner. In order to compile our own statistics, he and Adrienne Renders, both of the T.H.Delft, wrote up a questionaire during the FORUM and distributed it to all participants to try and assertain the kind of projects and the staff/student ratios in these projects (please, see loose enclosure in this report).

Project Organization

It is not so much a capacity question whether we can afford to work on the project system or not. It is a question of time and time-structure, i.e. staff time availability. Because of the lack of time or because of other priorities with the use of time, staff can often misuse the students within in the learning process, pushing their own ideas on to the group instead of letting them find their own solutions. On the whole, splitting into small groups was considered beneficial by all, but a project needs a plenary session every two weeks or so to communicate to one another what the different individuals or small groups are doing. It is not always quite necessary to have formal presentations of findings, but there must be some way of making a difference between theoretical and practical work in project plenary meetings.

Because of the problems with theory, many staff members plead for formal lectures parallel to project work. And others ask for architectural offices within schools to ensure the connection to practical affairs in building. Guided practical phases were considered better, as offices in schools can easily get the name of using cheap labour within the profession and students get too tied down with office responsibilities to be able to persue individual studies and to be able to co-operate with other projects.

To keep a balance between theory and practice, Group C stressed the value of a steering committee or project co-ordinator within an architectural department who can conduct the project-oriented studies. Newcastle's proect office or the Project Centre in other schools already give us a model of how to organize multi-project teaching activities within a school. This administrative support system can help organize the facilities for group work, can file information as to where to find experts for specific problems which keep coming up regularly, or extra tutors when a project needs extra counselling, and can co-ordinate timing and academic achievements, especially in big schools.

Projects in big schools or small schools, by their very nature of total numbers, tend to be different, but they are not necessarily worse in big schools - it depends on resources but also on many organizational factors. But mainly it depends on how successful small group work is carried through. Further discussion was considered needed on the amount of homogeneity or non-homogeneity within

a small group. It is not always right to be fully homogeneous. Personal motivation has to be made explicit. The dangers arise when groups become "families", i.e. too intimate, too close, as Peter Jokush pointed out. He was very strong also on how leadership should be not always taken over by the teacher, but should be learnt by the student. It should rotate within the members so that every member has the chance but also is forced to play the role of leader and, thereby, learn how power and discrimination happens among group members. This means that the staff have a new role. At present in most schools, the staff member is held responsible for the success of the project. He can, in turn, hand over the responsibility to collective decision-making, but has to be sure that he really wants to do so (apart from being allowed). Otherwise there can be very bad feelings and a reverse learning process towards the end of the project.

Real-life Projects

This was a major topic within the groups, especially Group C and D which were made up of participants from Belgium, Berlin, Canada, Denmark, Great Britian, Holland Malta, Sweden and Turkey with a high student participation. There was a strong appreciation expressed for the opportunity to exchange experiences with project-oriented studies and particularly with "real-life" projects. Peter Haupt and his project group of the T.U.Berlin had put on an extra exhibition of their work in their studio as an extra motivation to discuss this sub-topic. Indeed, the real-life concept was handled continually both in the other discussion groups and in the plenary meeting.

Although many had reservations because of the time factor, it was considered as the epitamy of project oriented work with lots of learning potential and plenty of motivational possibilities in it. Real-life projects were seen as being good for beginners, but could be introduced again at a later stage in architectural studies in order to avoid the void to reality which often creeps in as students get social-planning oriented or highly technical or both towards their final year.

Group E insisted that the content and the problems, worked upon in project oriented studies, must be related to the interests in interest groups (both simulated and in real-life situations) -- but what is real-life without the utopian component -- it is, therefore, necessary to find the scale between real-life and utopian in projects. This requires, according to Group I, the setting up of a fully interactive mode of teaching and learning capable of bringing to life, for all involved, the relevance of given, or self-searched, knowledge to a particular problem situation.

Methods

Apart from being able to design and to build, an architect must learn, at an early stage, that he has a responsibility towards society and that projects, both in architectural schools and later, encompass more than just design of buildings through this societal relationship. Lots of teaching methods wrongly claim to be PROJECTS, not having anything in common with this formulated aim.

The student representative of the Hamburg School of Fine Arts, Andreas Orth, had listed the main drawbacks of the socially isolated projects, so often found in Beaux Arts oriented schools of Architecture and brought them into the discussion, especially among the student initiated extra discussion group:

- *no co-operation between different members of staff;*
- *no integration of other disciplines;*
- *because of traditional teaching methods being continued, staff not forced or interested in thinking about questions of didactics;*
- *animosity towards theory among the staff produces animosity towards technical subjects among students;*
- *a theoretical framework whereby technology can be seen as relevant is seldom being taught nor even discussed;*
- *isolation of specialist groups, too early in studio work kills the overlapping character of multi disciplinary discussion which, in turn, squashes the general political attitude of the young student.*

Without going into this statement in detail, Nils-Ole Lund, Aarhus, Denmark expanded on these problems:

"A school of architecture is an institution of higher education, but to a greater extent than most other academic fields architecture is occupied with doing, not with thinking. One of the goals of an architectural school is therefore to influence reality; this means that knowledge of "reality" - the physical and social world - has to be included in the curriculum.

To take "reality" as it is into a school is not possible; there is no salary, no responsibility and not time enough. Reality therefore has to be simulated. Problem orientated projects make up the core of the curriculum. The basic studies - structure, environmental design, etc.- can gather around the project, not only growing out of the needs of the project but having their own inner coherence, too.

The teacher's view: In the beginning of the curriculum projects should start on a rather small scale, the great problems growing out from the small ones - not the other way round. During the study the problems and the projects should grow in complexity.

The student's view: It is not up to me to present the view of the students; the only thing the teacher can do

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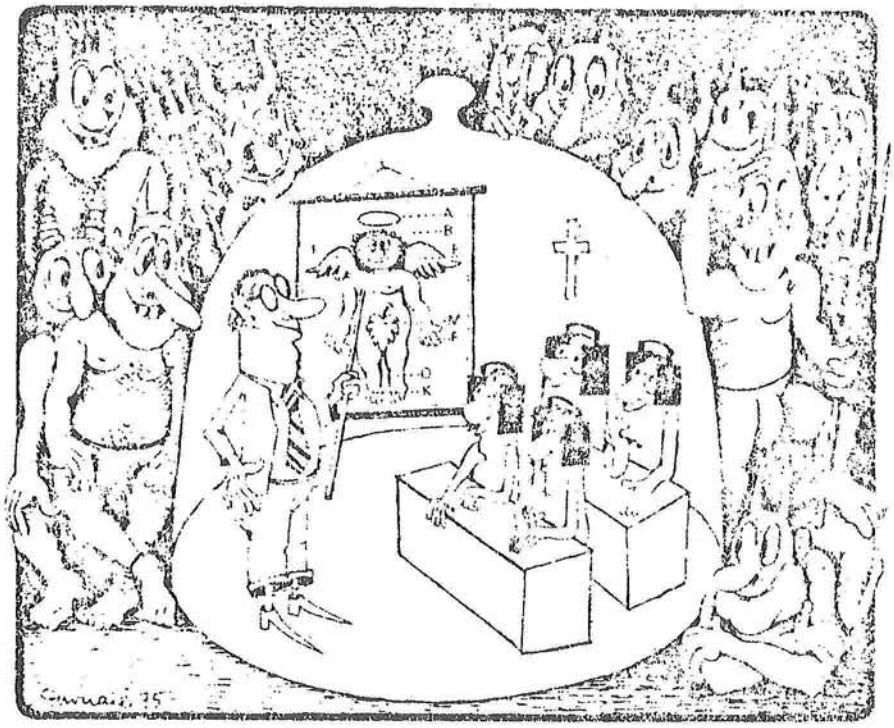
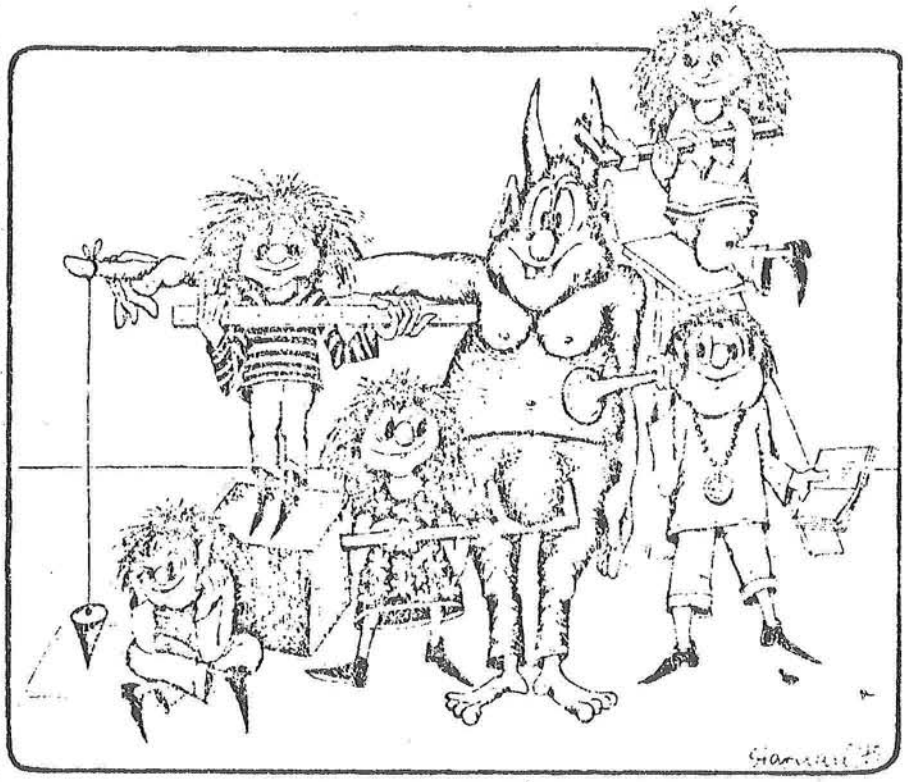


Protection of the schoolchildren from evil or....
Die Bewahrung der Schüler vor dem Bösen oder . . .



...exploration-project: we are measuring a devil.
. . . Erkundungsprojekt: Wir vermessen einen Teufel

is to involve the students in the decision making.

Just as in "reality" where the building process is a mixture of goals and conflicting needs, a curriculum is the result of varying opinions.

Project orientated teaching does not necessarily mean a low student-teacher ratio. The way the school is organized is much more important. Decentralization of curriculum planning is essential.."

Decentralization of the decisions on the content of the different projects is quite usual in the West German schools - this can, however, produce just that effect to which the Hamburg student was referring. The pittfalls of the multi-disciplinary approach were considered by Group H. They identified some problems with this method without killing the concept as it seemed very important to them. They suggested that a project must be a simulation of real life - referring to the angle / devil picture. There is a need to simulate both thinking and doing, i.e. the process of problem-solving and 'the city is the problem'. But how has reality changed our profession? Real-life projects make students try to answer psychological and sociological questions in an amateur manner. It even goes as far as that in some schools, as a reaction to this, the architectural student is not even allowed to talk to the user of his building. Ideally, the architect would not plan for the people but with them.

Group H went on to say that diagnostic skills are needed from the architect to be able to handle the complexity of each task - no matter how small in size. The students come from secondary school where their skills are over-specialized: paper-based and word-based. On the whole, they have a lack of skills that are manually creative. For buildings, one needs non-verbal skills and motoric abilities.

Project-oriented learning appears to offer the greatest range of opportunities, according to Group I, for this integrated development in the learning process and, as such, should be at the heart of the methods of architectural (as well as other forms of) education. However, it must not be assumed that this is the only educational task to be performed. Group I, therefore, considered that project-oriented learning must recognize and include other modes of teaching and learning which are most effective and efficient for particular objectives: e.g. lectures, seminars, tutorials, exercises, independent studies, etc.. Group N agreed with this: whilst project based studies can provide a basis for education in Architecture, it cannot encompass all aspects of required knowledge. Attempts to do so lead to limitations and distortions. Project based teaching requires the establishment of some 'norms' and 'standards'.

Group M particularly felt that two points were crucial with respect to an understanding of the needs of the "project":

- *the making of a creative atmosphere in each school. As Frank Lloyd Wright said "You cannot teach, but you can create an atmosphere where students can grow" This atmosphere can be created by involvement, commitment and obsession, the richness and excellence of resources in human terms, and the radicality of play.*
- *the evolution of a student's passage through a school should, having established conditions for self-development, be a creative interplay between scholarly study and joy in work.*

Their final word was that the project should be retained in its diverse meaning as a mode, while attempts should be made to remove the teaching of architecture from the technical teaching ideology and move it into the critical arts and humanities in order to prevent architectural education and architecture from becoming a utilitarian discipline for governments and big business.

One thing was very clear: everybody agreed that project work (as a method) should be at the heart of architectural education. I think that this statement should stand out, clearly and simply, as one of the results of the FORUM, particularly when you put the project concept in contrast to the master-pupil concept, as so often is the case in the United States. It was even stated by someone that the U.K. concept of project work is very close to the master-pupil concept ..... the edge of the knife we were walking on was very thin ..... it seems.

Assessment

The greatest problem, Group E said, "the key problem" of project studies is the assessment. Assessment is there as the academic institution and the granting of degrees call for it. Institutionalization of project studies can often be the sad political reason for killing the idea, the assessment killing by the bureaucracy, the old assessment queries: should a project group be marked as a group or individually or both ? One good statement which came up at the FORUM in this respect was: If there is otherwise enough individual work in the curriculum, there would be no need for differences in group assessments in project work. This was only one of many statementsabout this topic - an evergreen whereever more than two architectural teaching staff members or students congregate. The topic was quickly dropped in the plenary session as being unproductive for the FORUM as a whole, with a questioning note: Would it not be better if both students and teaching staff did self-evaluation on the lines that Peter Jokush had suggested in his paper ? At present, regulations make the staff responsible for the sucess of the project and the student responsible for the singular individualistic inputs. The logical following would proclude that only the staff can benefit from the whole project, the student must be satisfied with the parts.

Student Input

It was obvious from most of the staff participants and all student participants that a higher degree of democracy should be introduced and a greater input for the students in the determination of their projects and programmes. In this appeal for democracy, Dieter Besch of the T.H.Delft brought up the guiding and controversial duality which has been seen in this area of decision-making: "Society wants and needs a certain number of people trained in democratic group processes but not too many as it does not want to allow all those who are thus trained to continue in democratic working group systems, especially if they continue to insist on self-determination at many levels (which are, as yet, not considered political) and on voting powers in local decision-making".

However, Group E were of the opinion that because the project is a catalyst of development, it must be self-determined, the student using the research or search approach, the teaching staff seeing that all relevant subjects are integrated.

In these two seemingly contradictory statements, the tricky questions arises who decides who is to decide ? This again is a relevant question in all European societies to-day more than ever, because the electorate are asking more questions, the social movements are not just taking hierarchical authority for granted. In the basic ideas behind democracy, the people at large decide. In our parliamentary representation system, we have many voting models alone in Europe. So each school who talks about having a more or less democratic system in its decision-making structure is saying this with the cultural background of its setting in mind.

In Britian in the 1960's, academics talked about the free system in German-speaking schools. Self-determination does not mean that education is free, as Group H warned. Education is coded to culture and is understood by the general public as a means for transmitting knowledge. It is, therefore, not just a question of having multi-disciplinary input into architectural studies; it is important that studies be based on people's problems. Architecture, equal to other disciplines, can contribute to the solution or alleviation of these problems. The limits of our profession can be realised by following the progress of problems.

The belief that the self-determination of projects, in itself, is one ideal which will always be compromised by the university, including the expertise of the existing staff, was put forward by Group B. They thought, however, that the creative tensions and frustrations resulting from this will encourage the students themselves to challenge the prevailing ideology. Towards the end of the plenary session the students challenged the rest of the participants:

THE ROLE OF STUDENTS IN PROJECTS

STATEMENTS

1
We state that as long as the students are hardly represented at this conference, and that they and their projects are only used as decoration, this conference is not capable to conclude anything about projects and project-work, and that this conference can only serve as a platform for its own determination.

2
We state that any project-work can only function when its content and meaning is controled by its participants. So it demands a fully democratic framework.

3
We state education as a continuous climate to make new developments in thinking possible. Therefore we reject any education that is directed to deliver mere practical workers to serve only the efficiency of an existing production.

Henk Döll	*T.H.Delft*
Robert Groves	*Huddersfield Polytechnic*
Jeroen Geurst	*T.H.Delft*
Willem Heesen	*T.H.Delft*
Susanne Komossa	*T.H.Delft*
Geoff Markham	*Schools of Architecture Council*
John Gunnar Minde	*N.T.H.Trondheim Norway*
Joris Molenaar	*T.H.Delft*
Andreas Orth	*H.f.b.K. Hamburg*
Andreas Tänzler	*T.U.Berlin*
Wilfried van Winden	*T-H-Delft*

EAAE FORUM - FINAL LIST OF PARTICIPANTS

NOVEMBER 7. - 11. 1979 - TU - BERLIN

Martin Aarts
Technische Hogeschool Delft

Berlageweg 1
DELFT/THE NETHERLANDS

Kenneth Appleby
Architect
School of Architecture Leeds
Polytechnic

Brunswick Terrace
LEEDS LS 2 BRU/ENGLAND

Arbeitsgruppe Wassertorplatz
Fachbereich 8
Technische Universität Berlin

Straße des 17. Juni 135
1000 BERLIN 12/GEMANY

Richard Aschberger
Fachbereich 8
Techniche Universität Berlin

Straße des 17. Juni 135
1000 BERLIN 12/GERMANY

W.G.H. Barends
Technische Hogeschool Eindhoven

Den Dolech 2
EINDHOVEN/THE NETHERLANDS

Jean Barthelemy
Professor
Faculte Polytechnique de Mons
Department d'Architecture

Rue du Jancquois, 53
7000 MONS/BELGIUM

Colin Bartle-Tubbs
Canterbury School of Architecture
College of Art

New Dover Road 051 3 AN
CANTERBURY KENT ENGLAND

Baumgarten
Fachhochschule Münster

Gievenbecker Weg
MÜNSTER/GERMANY

G.J.W.M. van Bøbber
Technische Hogeschool Eindhoven

Den Dolech 2
EINDHOVEN/THE NETHERLANDS

Hermann Becker
Dipl.-Ing. Architect
Université de Lourain

1. Place du Levant
B-1348 LOURAIN-LA-NEUBE/BELGIUM

Florian Beigel
Polytechnic of North London

Holloway
LONDON N 7/ENGLAND

Jean Baptiste Benraad
Technische Hogeschool Eindhoven
Den Dolech 2

EINDHOVEN/THE NETHERLANDS

Justin Bere
Canterbury College of Art

New Dover Road
CANTERBURY/ENGLAND

Frans G.M. Bartels
Technical University
Department of Town Planning

Berlageweg 1

DELFT/THE NETHERLANDS

J.D. Besch
Technische Hogeschool Delft

Afdeling Bouwkunde Kab. 8.10
Berlageweg 1
DELFT/NIEDERLANDE

Mogens Brøyen
Professor

Kunstakademiets Arkitektskole
Kgs. Nytorv 3
1050 KOBENHAVN/DENMARK

Wilson Briscoe
Polytechnic of North London
Holloway
LONDON N 7 8 D 8/ENGLAND

Geoffney Broadbent
Portsmouth Polytechnic
Kind Henry 1 Street
BRISTOL 1/ENGLAND

Ian Brown
Bristol University
School of Architecture
25, Great George Street
BRISTOL 1/ENGLAND

Florian von Buttler
Technische Universität Berlin
FB 8 - A 704 a
Straße des 17. Juni 135
1000 Berlin 12 /GERMANY

Vito Cappiello
University of Napoli
Postillipo 176
I-80123 NAPOLI/ITALY

Massimo Pica Ciamarra
Professor
Postillipo 176
I-80123 NAPOLI/ITALY

Doug Clelland
Polytechnic of Central London
35, Naglebone Road
LONDON NW 1 5 LS/ENGLAND

Peter Coe
Bristol University
School of Architecture
25, Great George Street
BRISTOL/ENGLAND

David Coupe
Canterbury College of Art
School of Architecture
New Dover Road CT1 3 AH
CANTERBURY KENT/ENGLAND

Mariella de Cristofaro
Professor
Facolta di Architettura
Castello del Valentino
Viale Mattioli
TORINO/ITALY

T.S. Crowther
Newcastele University
Newcastle upon TYNE/ENGLAND

M.W. Danby
Professor
University of Newcastle
School of Architecure
NEWCASTELE UPRON TYNE/ENGLAND

Henk Döll
Technische Hogeschool Delft
Berlageweg 1
DELFT/THE NEDERLANDS

Ö. van Duin
Technische Universität Delft
Berlageweg 1
DELFT/THE NETHERLANDS

Herr Ellermann
Fachhochschule Münster
Tierenbecker Weg 65
4400 MÜNSTER/GERMANY

Tufan T. Enderler
Academy of Engeneering and
Architecture of Ankara
A!D.M.M.A. Adademi Ankara
ANKARA/TURKEY

Ü. Erbstößer
Universität Hannover
Fachbereich Architektur
Schloßwender Str. 1
3000 HANNOVER/GERMANY

Hakan Esbjörnsson
School of Architecutre
Chalmers University of Technology
S-41296 GÖTEBURG/SCHWEDEN

Robert Esdaile
Professor
Department of Architecture
University of Trondheim
N-7034 TRONDHEIM/NORWAY

Jorge Esdinel
Royal College of Art
Kensington
LONDON SW 7/ENGLAND

Wolfgang Etz
Professor
Fachhochschule Münster

Gievenbecker Weg 68
4400 MÜNSTER/GERMANY

Thobias Faber
Kunstakademiets Arkitektskole

Kogens Mytory 3, 3 sal
1050 KOBENHAVN K/DENMARK

Helga Fassbinder
Professor
Technische Hogeschool Eindhoven

Postbus 513
EINDHOVEN/THE NETHERLANDS

Eva Friis
Kuagl Ternisla Högskolan
Sektionen för Arkitektur

11346 STOCKHOLM/SCHWEDEN

Morgens Frisendal
School of Archit ecutre
Nørreport 20
8000 AARHUS C/DENMARK

Sverre Fehn
Professor

St. Clausstr. 4
OSLO 1/NORWAY

Philip Geoghegan
School of Architecture
University College

Earlsfort Terrace
DUBLIN 2/IRELAND

Jercen Geurst
Technische Hogeschool Delft

B erlageweg 1
DELFT/NIEDERLANDE

Jean Gilliaux
Institut Superieur Architecture
Sant Rue

Check Tournai 50
7721 RENEGUEZ CHIEP/BELGIQUE

Gören Ek
Lunds Institute of Technology

Fark
22007 LUND 1/SWEDEN

D. Gosling
Professor
University of Sheffield
Dept. Architecture, Arts Tower

SHEFFIELD SW 2 TN/ENGLAND

Dietmar Grötzebach
Professor
Technische Universtität Berlin
FB 8, A 15

Straße des 17. Juni 135
1000 BERLIN 12/GERMANY

Camillo Gubitosi
Professor
Instituto di Analisi Architettonica

3, Via Monteoliveto
NAPOLI/ITALY

Giovanni De Franciscis
Professor
Instituto di Analisi Architettonica

3, Via Monteoliveto
NAPOLI/ITALY

Robert Groves
Huddersfield Polytechnic

Queensgate
HUDDERFIELD/ENGLAND

Martien Habraken
Educational Research Group
HG 8.72 - University of Technology

P.B. 513
5600 MB EINDHOVEN/NIEDERLANDE

Hans Haenlein
Professor
Polytechnic of the South Bank

Wandswerth Road
LONDON SW 8/ENGLAND

Peter Haupt
Professor
Technische Univertität Berlin FB 8

Straße des 17. Juni 135
1000 BERLIN 12/GERMANY

Johan Hedborg
School of Architecture
Chalmers University of Technology
S-41296 GÖTEBURG/SCHWEDEN

Karl Aage Henk
Kunstakademiets Arkitektskole
Kgs. Mytory, 3
1054 KOBENHAVN K/DENMARK

Willem Heesen
Technische Hogeschool Delft
Berlageweg 1
DELFT/THE NETHERLANDS

Francine Houben
Technische Hogeschhol Delft
Dep. of Architecture
Berlageweg 1
DELFT/THE NETHERLANDS

Alberto Izzo
Professor
Instituto di Analisi Architettonica
3, Via Monteoliveto
NAPOLI/ITALY

Peter Jokusch
Professor
Gesamthochschule Kassel
Architcture
Henschelstr. 2
3500 KASSEL/GERMANY

Jill Jones
Polytechnic of Central London
School of Environment
35 Marylabone Road
LONDON NW 1 5 LS/ENGLAND

P. Jubb
University of Newcastle
NEWCASTLE UPON TYNE/ENGLAND

Karol Kardarar
Professor
New University Malta
MSIDA MALTA

Declan Kennedy
Professor
Technische Universität Berlin
Straße des 17. Juni 135
1000 BERLIN 12/GERMANY

Stuart Knight
Polytechnic of Central London
35 Marylobone Road
LONDON NW 1 5 LS/ENGLAND

Costa Knudsen
Architekskolen
Norreport 80
800 AARHUS C/DENMARK

Susanne Komossa
Technische Hogeschool Delft
Berlageweg 1
DELFT/THE NETHERLANDS

Herbert Kramel
Professor
ETH - Hönggerberg
TIL G 57
CH-8093 ZÜRICH/SWITZERLAND

Elke Krüger-Hespe
Jniversität Hannover
Fachbereich Architektur
Schloßwenderstr. 1
3000 HANNOVER/GERMANY

Paul Kuff
Professor
FH Düsseldorf FB Architektur
Josef-Göckeln-Str. 9
4000 DÜSSELDORF 30/GERMANY

Ron Langdon
Technische Hogeschool Delft
Berlageweg 1
DELFT/THE NETHERLANDS

Malena Larsvall
University Lund
Stadsbyggnad B
FACK 22007 LUND/SWEDEN

Lars Eric Lilja
Department of Town Planning
School of Architecture
Chalmers University of Technology
S-412 96 GÖTEBORG/SWEDEN

John Manzen-Longbone
Huddersfield Polytechnic
Queensgate Huddersfield
WEST YORKSHIRE/ENGLAND

H.J. Louw
University of Newcastle
NEWCASTLE UPON TYNE/ENGLAND

James Low
School of Architecture
Brunswick Avenue
HULL/ENGLAND

Nils Ole Lund
School of Architecutre
Norreport 20
8000 AARHUS C/DENMARK

Geoff Markham
Royal Institute of British Architecture
66, Portland Place
LONDON WINGAD/ENGLAND

Theodore Matoff
Plymouth Polytechnic
School of Architecture
Palace Court Palace Street
PLYMOUTH, DEVON/ENGLAND

Thomas Dermot Medcalf
Plymouth Polytechnic
School of Architecture
Palace Court, Palace Street
PLYMOUTH, DEVON/ENGLAND

John Gunnar Minde
University of Trondheim
7000 TRONDHEIM/NORWAY

Edwin Mintoff
Department of Architecture
New University
MALTA

Joris Malenaar
Technische Hogeschool Delft
Berlageweg 1
DELFT/THE NETHERLANDS

A.S. Morgan
Polytechnic of the South Bank
Wandsworth Road
LONDON W6 2 TX/ENGLAND

Dirk Müller
Vossbergstraße 5
1000 BERLIN 62

K. North
Professor
University of Shefield
School of Architecture
Arts Tower
SEHFIELD S 102 TN/ENGLAND

Cornelis le Nobel
Technische Hogeschool Eindhoven
Postbus 513
EINDHOVEN/THE NETHERLANDS

Gerd Nowak
Technische Universität Berlin
Pallasstr. 6 a,
1000 BERLIN 30/GERMANY

Andreas Orth
Hochschule für bildende Künste
- Architektur -
Lerchenfeld 2
2000 HAMBURG 76/GERMANY

Cho Padamsee
School of Architecture
Hull College of Higher Education
Brunswick Ave,
HULL HU 29 ST/ENGLAND

Margret Anne Paul
Labour-In-Vain Road
Wrotham, Sevenoaks
KENT TNIS 7 NY/ENGLAND

Dr. Jacques Paul
Finches Farm
Labour-in-Vain Road
Wrotham, Sevenoaks
KENT TNIS 7 NY/ENGLAND

Carl Prusha
Professor
Academy of fine Arts
Schillerplatz 3
VIENNA/AUSTRIA

Mustafa Pultar
Professor
Middleeast Technical University
INÖNÜ - ANKARA/TURKEY

Aage van Randen
Professor
Technische Hogeschool Delft
Department of Architecture

Berlageweg 1
DELFT/THE NETHERLANDS

A.W. Renders
Technische Hogeschool Delft
Department of Architecture

Berlageweg 1
DELFT/THE NETHERLANDS

P.A. Reed
Department of Architecture and
Building Science,
University of Strathclyde

131 Rottenrow
GLASGOW/ENGLAND

Lucas Reismer
Technische Hogeschool Delft
Department of Architecture

Berlageweg 1
DELFT/THE NETHERLANDS

Adrienne Renders
Technische Hogeschool Delft
Bouwkunde

Mekelweg 1
DELT/THE NETHERLANDS

C. Riley
Professor
School of Architecture
University of Nottingham

University Park
NOTTINGHAM N G 7 2 RD/ENDLAND

Mr. Roberts
University of Newcastle
School of Architecture

NEWCASTLE UPON TANE/ENGLAND

B.D. Robson
University of Newcastle
School of Architecture

NEWCASTLE UPON TYNE/ENGLAND

D.E. Rosa Luciana
Professor
Faculty of Architecture

Via Monteoliveto 3
NAPOLI/ITALY

Peter Salander
School of Architecture
Chalmers University
of Technology

S-41296 GÖTEBORG/SWEDEN

Mario Salvade
Faculta Architectura
Polytechnic Milano

Via Bovardi 3
MILANO/ITALY

Heinz Georg Schneider
ETH-Zürich

Leonhardstr. 12
CH-8001/ZÜRICH/SWITZERLAND

Richard von de Schepop
Technische Universität Berlin
FB 8, A 508

Straße des 17. Juni 135
1000 BERLIN 12/GERMANY

Willy Serneels
Institut Superieur d'Architecture
Saint Luc

Rue D'Irlande, 57
B-1060 BRUXELLES/BELGIUM

Phillip R. Sharp
School of Architecture

Carleton University
OTTAWA/CANADA

Nathan Silver
N.E. Lonson Polytechnic
Department of Architecture

Forest Road
LONDON E 17/ENGLAND

Jan Slothouber
Technische Hogeschool Eindhoven

Box 513
EINDHOVEN/THE NETHERLANDS

John Smith
School of Architecture
Canterbury College of Art

New Dover Road
CANTERBURY, KENT CT 1 3 AN/ENGLAND

Nor Smith
Professor
Bristol University
School of Architecture

25, Great George Street
BRISTOL 1/ENGLAND

H. Smulders
Technische Hogeschool Eindhoven

Den Dolech 2
EINDHOVEN/THE NETHERLANDS

Svend Erik Søfelt
Arkitektskolen

Nørreport 20
8000 AARHUS/DENMARK

Kosta Stefanovix
St. Luc

26, Rue Sainte Marie
4000 LIEGE/GELGIUM

Sergio Stenti
via Chiamarra, Professore

Postillipo 176
80123 NAPOLI/ITALY

Martin Symes
Bartlett School
University Collge of Architecture

LONDON/ENGLAND

Roger Tablot
Department of Architecture
University of Edinburgh

22, Chamber Street
EDINBURGH EA 1192/ENGLAND

Karin Tkennissen
Technische Hogeschool Delft
Bouwkunde

Berlageweg 1
DELFT/THE NETHERLANDS

Guelfo Tozzi
via Prof. Ciamarra

Postillipo 176
80123 NAPOLI/ITALY

Roger Turner
School of Architecture
Canterb ury College of Art

New Dover Road
CANTERBURY, KENT CT 1 3 AN
ENTLAND

Ali Uyannik
Professor
Arkitektskolen 1
Norreport 20
800 AARHUS:DENMARK

Hans Vetter
Technische Universität Berlin
FB 8, Sekr. A 17

Straße des 17. Juni 135
1000 BERLIN 12/GERMANY

Georges Vranckx
Professor
Institut Sup. Architecture
St. Luc

Rue d'Irlande
1060 BRUXELLES/BELGIUM

Roger G. Walker
School of Architecture
Birmingham Polytechnic

Perry Bar
BIRMINGHAM/ENGLAND

Carol C. Walker
Kineton Design Group

191, Corporation Street
BIRMINGHAM E 4 6 RP/ENGLAND

Bob Ward
Newcastle University

NEWCASTLE UPON TYNE/ENGLAND

Jonas Wellander
School of Architecture
Chalmers University of Technology

S-412 96 GÖTEBORG/SWEDEN

D. Wild
Polytechnic of the South Bank

Wandsworth Road
LONDON 5 WB 2 SZ/ENGLAND

Wilfried van Winden
Technische Hogeschool Delft
Department of Architecture
Berlageweg 1
DELFT/THE NETHERLANDS

Esber Yolal
Middle East Technical University
INÖNÜ - ANKARA/TURKEY

Bernhard Zumthor
North East London Polytechnic
Holloway
LONDON N 7/ENGLAND