THE MODEL FOR ARCHITECTURAL DESIGN EDUCATION (MADE)

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Abstract

*The subject matter portrayed is a teaching and design model for architectural studies, called the **Model for Architectural Design Education (MADE)**, which was taught to students of architecture and building engineering at the University of Essen, Germany[1]. On the one hand this model is a systematic approach developed for lecturers to assist in planned teaching of object design, and on the other hand a model for the student to assist in the planned and purposeful design of buildings in order to achieve the best possible results.*

Prologue

> *"Fundamentally, however, we are all collective beings, no matter what image we choose to adopt. For how little we have and how little we are of what we call our property in the purest sense! We all have to be receptive and learn, both from those who went before us and those who are with us now. Even the greatest genius would not go far if he planned to draw only on his inner self. But very many good people fail to understand that, and spend half their lives groping around in the dark with their dreams of originality. I have known artists who boasted of following no master, but rather owing everything to their own genius. The fools! As if that alone would do!"*
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> *Johann Wolfgang Goethe - Conversations with Eckermann, 17 February 183*

What is the Model for Architectural Design Education (MADE)?

MADE realizes in practice the assertion, that designing is teachable and learnable. It is a professionally orientated teaching model for the training of students of architecture in the form of organised learning in a planned, methodically[2] structured procedure. Starting with the design task, it encompasses the totality of those activities leading to the definition of objectives, preparation and production of a design and the compilation of the documents required by the planning authorities. It must however be noted here that a design task in its totality cannot be solved exclusively in an objective, formalisable manner, but that intuition and creative decisions are also required.

1 The Intentions Behind a Systematic Design Approach

Design, as architects understand it, is the central concept behind those activities which lead to solutions and results in building projects. But a good design does not arise in a vacuum. Creative thinking, original ideas and constructive inspiration are indispensable. Experience, knowledge, skill and - last but not least - properly prepared systematic procedures form the basis.

Designing has become more difficult over the years, for today's building projects are in part so complicated and complex that their implementation requires architects to possess not only a growing body of knowledge and ever increasing efficiency, but also to bear more and more responsibility for the quality of the building itself as well as its appropriate, ecologically sound incorporation in the environment. Unavoidably, this also affects the quality of architectural education required. Higher demands on professional competence necessitate both expertise in teaching and the acquisition of expertise by learning - in design as in all other disciplines.

But there is a problem here. When evaluating their professional training in retrospect, many practicing architects voice criticism: „Architects do not learn to think. The manner in which architects have been taught in the past leaves the possibility to cover up far too many deficiencies...". „Too much

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[1] **MADE** can also be employed in subjects such as Industrial Design, Civil Engineering and Building Construction as well as in the vocational training of secondary school teachers for subjects such as Technology, Handicraft Work or Introduction to Work.

[2] *Objects* are buildings, other structures, outdoor constructions and interior constructions. (Architektenkammer Nordrhein-Westfalen (Ed.) „Verordnung ueber Honorare fuer Leistungen der Architekten und Ingenieure (HOAI)" in: Architektenhandbuch '85. Christians & Reim Verlag, Eutin (1986).
Design is taken to mean a problem-solving process which leads - in thought, drawings and writing - through various situations where decisions are required, from an initial problem to a design solution. This process comprises three different stages proceeding from the abstract to the concrete: basic research, scheme design and development. These stages involve systematic thought processes, evaluation and actions which are carried out in sequence, overlap and merge, and thus mark progress from the abstract to the concrete. No clear divisions can be made between these stages; it is a matter of shifting emphasis only. In terms of MADE, „design" includes all structural aspects, such as the selection, dimensioning, arrangement and connection of building materials, components and systems. Structural considerations cannot be separated from the creative aspects of design, as without them a building will not stand.

'architecture' was done, but the method of designing not learned." ...."We learned to design a hotel but not the method of designing..." „It is a general deficiency of architects that they have not learned to tackle a problem systematically. Instead, they take up their 6B pencil and sketching paper and employ the familiar 'trial and error method' until they believe to have found the 'right' solution."[3]

Two main causes are seen for this problem. One stems from the fact that most German college educators - whatever qualities they may possess on a practical, academic or research level - will most probably never have learned **how to teach**. They seldom or never consciously use a consistent teaching method or even conduct their courses in accordance with didactic principles. As a leading German magazine once put it: „Their pedagogical training is absolutely *non-existent*"[4]. Furthermore, German university educators are granted the constitutional right to do research and teaching in whichever manner they see fit. A democratic liberty par excellence! With regard to architectural design education, this freedom leads to a deplorable lack of interdisciplinary cooperation between colleagues of various related subjects such as Gestaltungslehre, structural engineering design, mechanical and electrical engineering services, environmental planning, garden planning, interior design and cost control, all of which are important and should be taught in conjunction with a specific design project.

The other cause for the problem lies in the fact that most architectural design educators prompt their students to believe that **architects are „artists"** and that they „create architecture". But, as Louis I. Kahn said in a lecture held in Berkely in 1966, „Architecture, per se, does not exist. Architecture is a spirit. Architecture knows no style, knows no method."[5] Kahn is right. **The „spirit" cannot be taught. But the science of designing and constructing buildings can.**

How best, then, to improve the of teaching of architectural design? How best to cultivate the powers that belong to any ordinarily-endowed architectural student, so that he or she may, if not excel their fellows, take at least a position, which may have the credit of a respectable mediocrity? How best to educate so that the student may know what to do and do it?

As a response to these goals, the idea of developing a teaching and design model for architectural design studies was born: the result is the **M**odel for **A**rchitectural **D**esign **E**ducation (**MADE**) - (see figure 1).

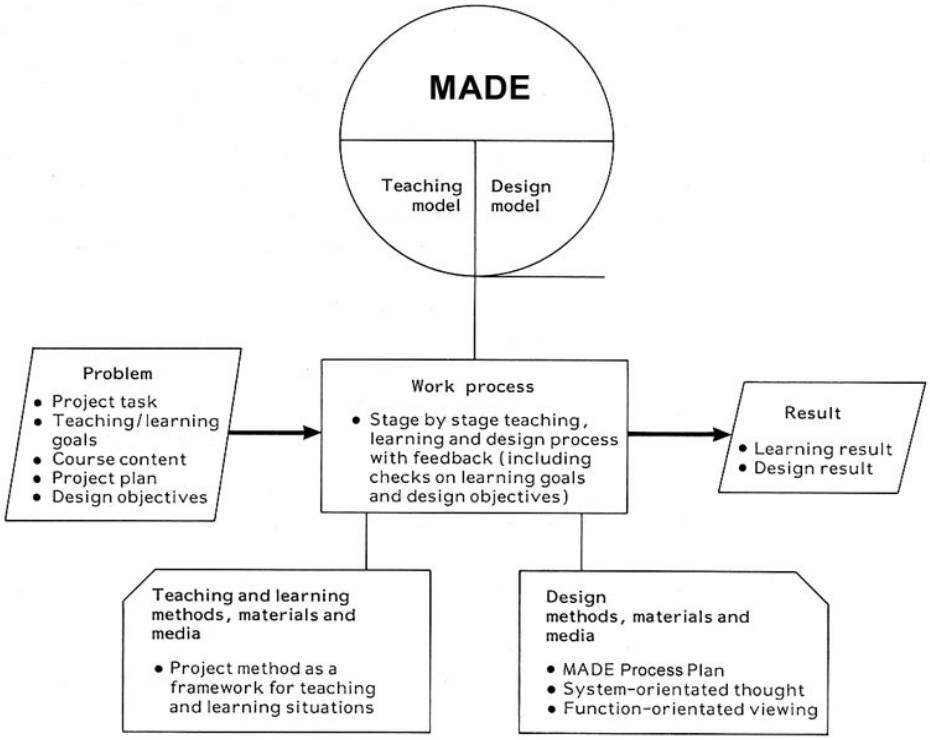

Figure 1: MADE teacher/student configuration

[3] Schriftenreihe „Staedtebauliche Forschung" des Bundesministers fuer Raumordnung, Bauwesen und Staedtebau. Interdisziplinaeres Zusammenwirken bei der Ausbildung von Stadt-, Regional- und Landesplanern, Teil II, Rautenstrauch, L.: Eine Untersuchung zur Entwicklung von Anforderungen und notwendigen Qualifikationen, Bonn-Bad Godesberg (1974)
[4] „Hochschullehrer – Mehr oder weniger Qual". In: Der Spiegel Vol. 52 (1987) p. 1
[5] Louis I. Kahn: Berkeley Lecture, 1966 .In: Perspecta 28, The Yale Architectural Journal, Architects Process Inspiration, The MIT Press, Cambridge (1997) p. 1

In short, this is on the one hand a systematic model developed for lecturers to assist in the *planned teaching* of object design, and on the other hand a model for the student to assist in the *planned and purposeful designing* of buildings, in order to achieve the best possible result.

The Model for Architectural Design Education presented here assumes that teaching - as with every other professional activity - can largely be learned, and that special features of personality such as creative talent, intuition and charisma merely influence teaching actions to a certain extent. Those who teach design in the manner proposed here attempt to guide their students in their approach to and dealings with the subject matter of their study.

In doing so, they will take the prior knowledge of the students, their learning speeds and their motivation into account, and also incorporate regular checks on their progress in their procedures - they will thus proceed *systematically.* Not every procedure adopted by a teacher, however, and not every 'style', deserves to be called a systematic method; method is rather an all-pervading approach to subject matter, describing the way towards a goal in an illuminating and educative manner.

MADE, which was tested in practice with students of architecture and building engineering for more than thirty years, grew to a practical design education instrument - supported and successfully improved by criticism and various proposals for betterment of the students involved. It is **not** one of the various theoretical architectural design methods presented from time to time in the past in books, journals or at conferences, symposia etc. which were never actually tested and evaluated in practice. Most of those were isolated methods to be employed for certain problems only. MADE, in contrast, is a method which leads the student from the inception of a Project Task all the way to a planning permission application.

MADE and the Project Method

The following sequence is characteristic of the *project method* [6]:

a) The teacher or the students introduce an *idea* or a *problem* to the group, and together formulate a *project task* (preparation)

b) A *project plan* is compiled, clarifying the further progress of the work (organization)

c) In a stage-by-stage learning by doing process, a *product* is created (realization).

MADE fundamentally follows this sequence, but subdivides and defines in detail the stages of organization and realization, so as to guide students in the planned and controlled handling of a design exercise, which will be referred to in the following as the „Project Task".

The process as a whole covers a complete design sequence[7], and imitates the work of a professional architect in implementing a building project. The phases of the MADE Process Plan (see Figure 2) provide a relatively open-ended but nevertheless structured framework.

[6] The *project method* is a way of working educationally in a particular field. The work performed is serious in character: it does not concern itself with artificially constructed or specifically detailed set exercises. Nevertheless, learning by the project method retains the character of trying things out, as does all action which educates. The participants in the project do not bear the final burden of responsibility which a practising professional would. The entire structure of the project, with its special modes of behaviour, constructive planning processes and conflicts to be resolved permits the students to participate in the development of reality. (Kilpatrick, W.H.: The project method, in: Teachers College Record, Vol. 19 (1918)

[7] Or only parts thereof, as dictated by the requirements or intentions of the teacher, although the student has the „MADE Process Plan" to put his current work in an overall perspective.

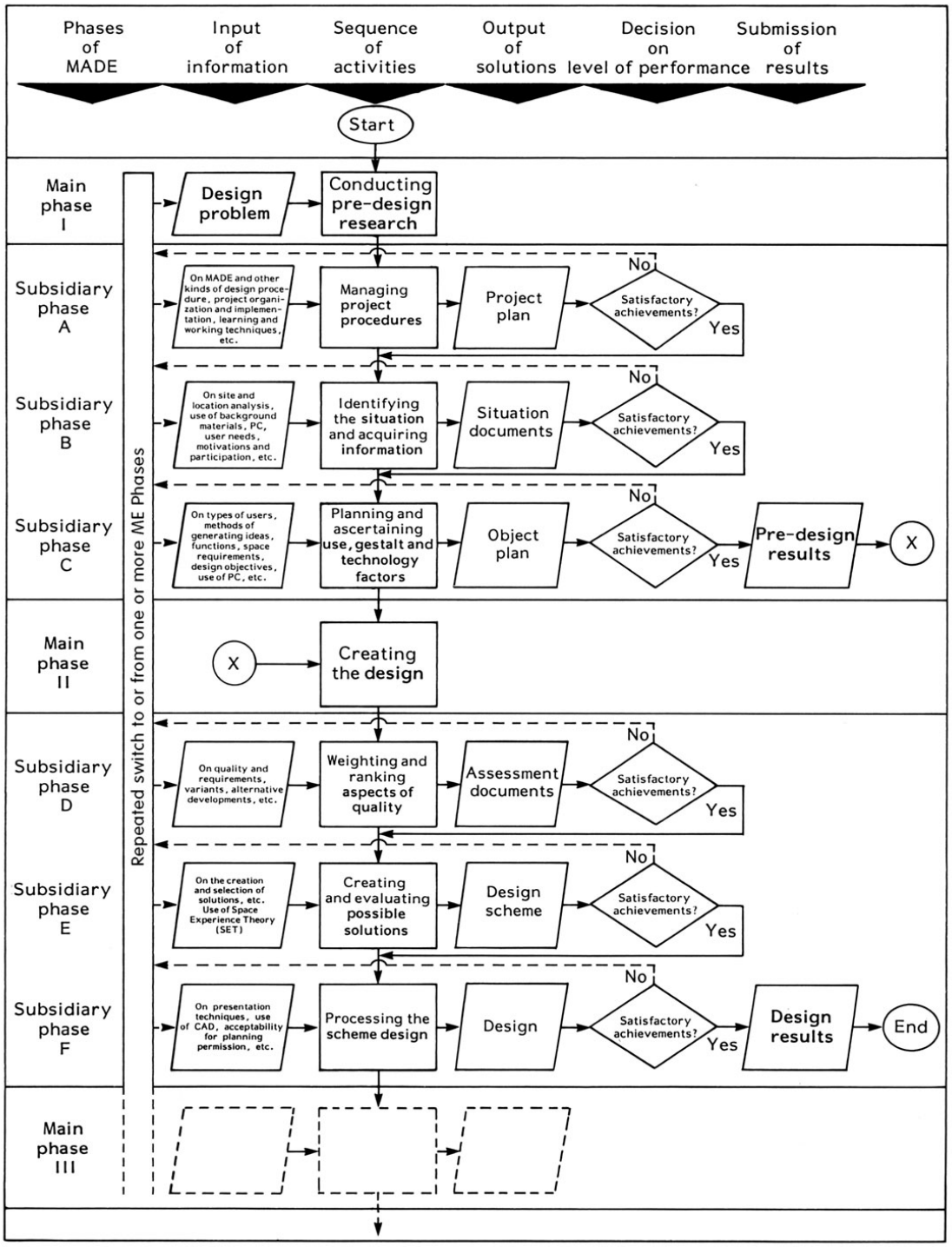

Figure 2: MADE Process Plan

They give both teacher and students enough room to introduce their own ideas, modifications and creative adaptations.

Typical features of MADE Projects[8] are as follows:

1) *Problem solving processes,* regarded as learning strategies, occupy a central position

2) *More than one solution* is always possible in designing objects

[8] To facilitate a clear understanding of MADE and its practical application see the documentation of a MADE Project: JOHANNES, R. Architectural design: a systematic approach: Part 2 in: Design Studies, Vol. 13, No. 2, April 1992, pp. 157-199. **JOHANNES, R.** Model for Architectural Design Education (MADE): DESIGN METHODS Theories, Research, Education and Practice Vol. 37 No 3 Jul-Sep 2003, pp. 3469-3509. A list of publications on other MADE-Projects - mostly in German - is available on request from the author.

3) *Three stages of progress* from the abstract to the concrete are distinguished, these being the preparation, organization and realization stages. These are formal stages, which assist by providing a structure for designing and teaching in order to maintain

4) *Purpose-orientation,* and thus achieve the learning goals and design objectives set

5) *Joint work* by students and teachers, as well as *group and/or individual* work by the students

6) *Interdisciplinary work*

7) Processing and creation with the aid of a *variety of different methods, materials and media.*

MADE is a *teaching model* [9], aimed at giving students the opportunity to acquire fundamental expertise for future independent design work by tackling a complex Project Task. It provides a flexible framework for a host of different teaching and learning activities. Within this framework, the teacher's job is not primarily that of dispensing knowledge, but rather that of developing learning tasks - sometimes together with the students - and creating structured learning situations which enable the students actively to get to grips with the course content. Above and beyond this primary job of preparing, organizing and structuring learning tasks, the teacher, of course, also has to evaluate the students' achievements. This activity, too, takes on a specific character from its orientation towards a concrete product (the design), which is produced successively in clearly defined stages.

Not only is the finished design ‚marked' at the end, but the student is provided throughout the design process with feedback on the quality of his work to date. He is, therefore, much better able to judge the success of his efforts and intensify them where necessary.

Above and beyond this orientation towards the project method, the following principles are also incorporated in MADE

a) *System-orientated thought,* as a unified way of thinking with regard to the teaching and learning process and as an aid to understanding and designing complex MADE Projects by regarding them as a system (Figure 3)

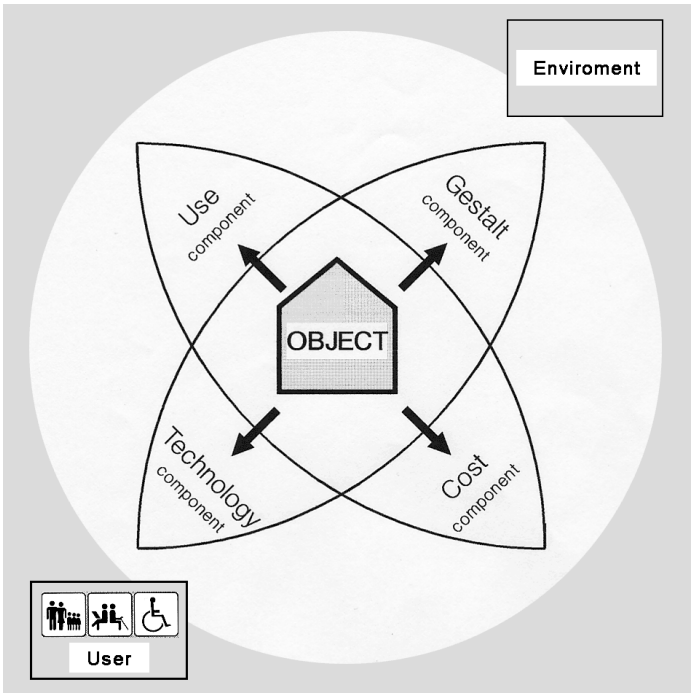

Figure 3: Aspects of system-oriented thought and function-oriented viewing through framework of MADE

[9] A *teaching model* can be a pattern or plan for various teaching activities. It can be used to design a course or syllabus, to select teaching materials, and to guide the actions of the teacher. Its effects are thus both practical and constructive. (JOYCE, B. and WEIL M.: Models of teaching. Prentice Hall, Englewood Cliffs, N.J. (1972)

b) An *extended function-orientated view*[10] as a comprehensive way of looking at the interactions, on the one hand between the *user* (with his needs, motivations and possibly handicaps) and the functions of an *object* (with its components of use, gestalt, technology), and on the other hand between these and the *environment* which surrounds them both (Figure 2).

The following aspects will now be discussed:

a) The learning goals of MADE

b) The subject matter and central course contents

c) The structure of the teaching/learning process reflecting the goals and course contents (see Figure 2: MADE Process Plan).

3- Learning Goals of MADE

Without specific goals to be reached, professional training and further education remains largely a matter of chance, exposed to the whims of individual teachers. Planned teaching and learning in the education of architects, particularly in design, can only be carried out when the fundamental goals are defined in advance. The teacher should orientate his plans for teaching and learning toward these learning goals, and use them to evaluate how much has been learned.

For the student, the setting of specific goals makes the process sufficiently transparent for him to arrange his own learning and working procedures accordingly.

Learning goals within this model are encountered on a variety of levels. On the highest level, they are incorporated in the more general targets of architectural education, which are, as a rule, set down in the curriculum and examination syllabus. The course requirements for the study of architecture at the University of Essen thus demanded that students be qualified for their subsequent professional activities to such an extent that they are in a position as architects „to delineate their area of responsibility, analyse problems and perform planning tasks independently on the basis of a corpus of scientific and artistic knowledge. Furthermore, they must be able to implement their planned projects in practice“.

Above and beyond these general goals, the basic aim of MADE as a teaching model is to enable the students to compile a professional design for an object independently, observing a variety of legal, technical and financial restrictions. This still relatively abstract guideline must be made more concrete in connection with the activities of the architect to be described in detail below. The following general goals result:

a) The ability to conduct pre-design research

b) The ability to create a design

c) The ability to acquire a building permission.

Below this level, a series of broad aims can be defined against the background of the MADE Process Plan (Figure 2):

A) The ability to manage project procedures

B) The ability to identify the situation and acquire information

C) The ability to plan and ascertain use, gestalt and technology factors

D) The ability to weigh and rank aspects of quality

[10] This means that objects viewed from the perspective of a subject (e.g. a user or an architect) are to be regarded as polyfunctional, in that they can fulfil a variety of functions regarding use, gestalt, technology and costs. (BURBANK, J. and STEINER P. (Eds.): Structure, sign and function: selected essays by Jan Mukarovsky. Yale University Press, New Haven and London (1978)

E) The ability to create and evaluate possible solutions

F) The ability to complete the scheme design.

The broad aims listed above

- Are already related to concrete topics and exercise descriptions

- Are, as a rule, the same for every Project Task, irrespective of whether this involves the design of new buildings, new constructions, reconstructions, extensions, conversions or modernizations

- Ensure that the teacher has a certain degree of freedom necessary to project his own, individual architectural design theory.

4- Subject Matter and Course Content of MADE

The subject matter to be conveyed by MADE as a central discipline in the education of architects is the *design process*, consisting of a sequence of activities whose performance is aimed at the successful completion of a Project Task.

For MADE, this process has to be analysed and its structures identified, taking into account the activities which architects perform in practice. One aid in this is a frame of reference putting the field of activity[11] known as "design" into the overall perspective of aspects such as planning, forming, engineering and cost-effectiveness of buildings, landscapes, cities etc. The importance of the design process and the factors influencing it can only be identified within this framework.

The field of work[12] of the architect provides an even more closely defined frame of reference. It can be described in the form of a conceptual coordinate system. Figure 5

5- MADE Process Plan

The question of which phases, stages or steps teaching and learning processes in general have to follow has always occupied and continues to occupy the minds of teachers, educational psychologists and educational scientists, and there are a host of schemes for planning the development of such processes. The same applies to the process of design and construction for building projects. Here, there are a number of patterns developed by architects, engineers and their professional associations, e.g. the Royal Institute of British Architects (RIBA), the American. Institute of Architects (AIA) or the Bundesarchitektenkammer (BAK) in Germany, all with the aim of making designing, among other activities, more effective.

Opinions on the value of such patterns differ. For MADE, a pattern of this type, namely the MADE Process Plan (see figure 4), was considered necessary for the following reasons:

- Every proper teaching and learning process is structured, and individual points, sections or phases which follow on from and expand previous ones can be identified in each planning concept. A structured teaching and learning sequence provides both teachers and students with orientation in the process, for it helps teachers to recognize what has been taught, and students to realize what they have learnt

- Every design process can be divided into various general stages or phases which are typical of such a process.

[11] „A *field of activity* is the sum of all actually occurring, necessary and conceivable activities which have to be and can be performed by an architect within the framework of actual and conceivable institutions.“ (ARLT, M.: Architektenausbildung - Eine Curriculumkonzeption fuer die Grundausbildung von Architekten. Karl Kraemer Verlag, Stuttgart (1985).

[12] „The *field of work* of an architect comprises .... the sum all architectural activities which the architect performs and is capable of performing ... as a result of his acquired knowledge, abilities and modes of behaviour.“ (in: see footnote 7)

PROJECT:	Motorway Service Area 2000		A4
MODULE RESULT:	Project Learning Result Catalogue		Proj. Learn. Result Cat.
COMPILER:	Prof. Ralph Johannes	March 1988	4

	PROJECT LEARNING GOALS AND COURSE CONTENT	= LEARNING RESULTS
Target I	**I Ability to make the brief**	**= Briefing documents**
Broad aim A	**A Ability to manage project procedures**	**= Project plan**
	1 Understand the content, context and requirements of the problem	= Project task
	2 Break down project work and allocate responsibilities	= Project structure plan
	3 Set up uniform rules and conditions for the project and its representation	= Project programme
Project modules	4 Ensure scheduled project sequence	= MADE phase plan
	5 Clarify project learning goals and course content, agree the nature and scope of the project learning results	= Project learning result catalogue
	6 Determine and visually represent schedules for project duration, corrections and reports	= Project timetable
	7 Supply relevant project literature references	= Project literature list
Broad aim B	**B Ability to identify the situation and acquire information**	**= Situation documents**
	1 Collect and process object literature	= Data list and idea archive (continuously updated)
	2 View existing objects (at least 2), establish critical descriptions and interview users	= Excursion report
Project modules	3 Examine and evaluate the development of the object on a historical basis	= Historical synopsis
	4 Examine and evaluate the circumstances of the object on a typological basis	= Typological synopsis
	5 Determine the characteristics of the object	= Object characteristics table
Broad aim C	**C Ability to plan and ascertain use, gestalt and technology factors**	**= Object plan**
	1 Develop and present a guideline image for the object design in words and pictures	= Association chart, breakdown list and collage
Project modules	2 Determine, structure and link object users, functions and spaces	= User – function – space matrix
	3 Identify, order and group design objectives for the object	= Catalogue of objectives
	4 Link the spaces inside and outside the object	= Adjacency graph
	5 Determine and group the floor areas required for the object	= Floor area schedule
Target II	**II Ability to create a design**	**= Design results**
Broad aim D	**D Ability to weight and rank aspects of quality**	**= Assessment documents**
Project module	1 Select design objectives, formulate and rate criteria	= Rating table
Broad aim E	**E Ability to create and evaluate possible solutions**	**= Scheme design**
	1 Sketch conceptual plans and elevations (scale 1:100) of alternatives (at least 2) for the object	= Alternative plans
Project modules	2 Assess object alternatives	= Evaluation table
Broad aim F	**F Ability to complete the scheme design**	**= Design**
	1 Compile final drawings of a site plan in a scale of 1:500 and of the scheme design floor plans, sections and elevations in scale 1:100	= Design plans
	2 Describe the object design	= Explanatory report
Project modules	3 Calculate the object areas and volumes (to DIN 277)	= Area and volume calculations
	4 Estimate the cost of the object (to DIN 276)	= Cost estimate
	5 Compile the results of the project	= Project report
	6 Construct a model of the object in a scale of 1:100	= Model

Figure 4: Example of a Project Learning Result Catalogue for the MADE Project „Motorway service area 2000“

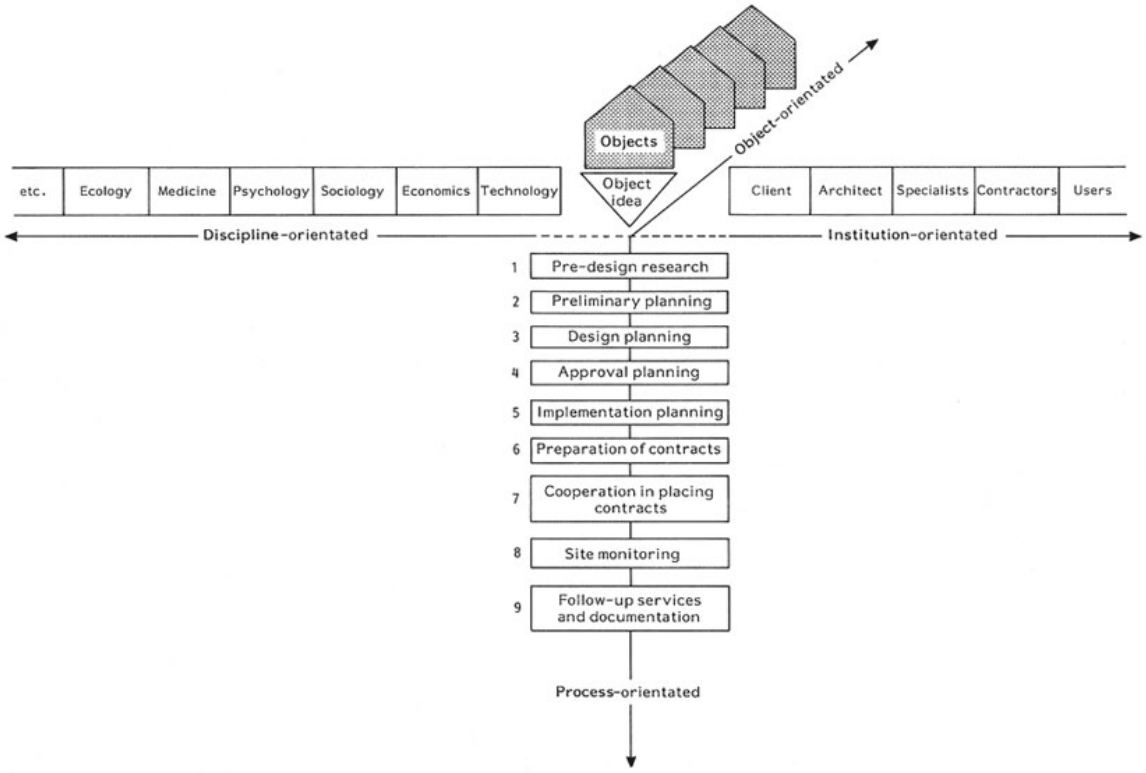

Figure 5: Conceptual coordinate system as a heuristic framework for the architects´ field of work

The MADE Process Plan serves the purpose of arranging the teaching/learning and design processes in clearly distinct main and subsidiary phases, and can be regarded as a macro-strategy for designing and teaching of those processes.

Designing processes can only be planned to a certain degree. This fact also pertains to teaching/learning processes in which teachers and learners interact and communicate. Each teaching/learning process is as unique as the persons involved in the process. Consequently, whenever a teacher plans a specific teaching/learning sequence, there is no guarantee that the learners for whom this sequence is established actually strive for and reach the envisioned goals. This is because humans do not simply let themselves be treated as „machines“.

Although the limits of educational planning are seen, this does not mean that teaching, in general, cannot be planned. However, a distinction must be made between that which can be and that which cannot be planned. Taking this into consideration, the designing process (= teaching/learning process) was put into a sequence in the form of a phase plan, the so-called MADE Process Plan.

The MADE Process Plan has three main phases:

I) Conducting pre-design research

II) Creating a design

III) Acquiring a building permission.

Among other tasks, the first phase is concerned with:

- clarification of the Project Task

- management of the project process under aspects of teaching/learning, designing and timetabling

- collection, processing and storage of information relevant to the Project Task, thus enabling design decisions

-creation of a design guideline image for the object.

The second phase, which is based on the fundamental parts of the pre-design research, comprises, among others, the compilation of the research results to a full design solution of the Project Task.

The third phase is based on the approved scheme design documents and mainly consists of the preparation of:

- drawings

- a preliminary cost plan

- documents required for the acquisition of a building permission.

Each of the three main phases listed above is subdivided into further subsidiary phases which are defined in terms of the broad aims listed in Section 3 „Learning goals of MADE“.

The individual phases are linked in a systematic sequence, build upon each other, and are provided with a feedback loop to previous phases.

Each phase on the one hand represents a flexible framework filled by didactic procedures and design activities both related to the relevant project module (see Figure 2). On the other hand, each phase constitutes a self-contained teaching/learning or design sequence which leads to a definable learning or design result.

The MADE Process Plan illustrated in Figure 2 seems to convey the impression that the design process is a simple ‘linear’ procedure. This, however, is deceiving. As a rule, it becomes necessary to deal with each of the subsidiary phases with their typical project modules in parallel, iterative or reciprocating steps in order to achieve partial results of a Project Task.

Hence, the way leading to the goal, namely the solution of the Project Task is not a linear, but rather a flexible one. However, in order to avoid losing sight of the goal, certain phases can and must be determind in advance. The mere fact that there is no simple, linear way to a goal does not imply that a definable way is not possible. Rough guidelines (= Main and subsidiary phases) can, indeed, be set down in advance.

All in all, the MADE Process Plan represents a standardized, generally applicable pattern which is compatible with the most divergent specifics of various Project Tasks, and thus has a unifying and clarifying effect on the variety of possible design activities. The phases are orientated towards both learning and design results. The learning and design results aimed at in individual phases can be achieved either by a single student or by several of them. The solutions arrived at (see column 4) are then checked in monitoring and evaluation stages (see column 5) to verify whether they come up to the performance expectations of all concerned. If so, these are „rewarded“ by positive marks from the teacher, and the design process can be continued. If not, the relevant phase and possibly preceding phases are repeated, so that the solution finally meets the desired performance level. This „desired performance level“ (see Figure 4, „Project learning goals“) is checked in terms of the following criteria:

a) The teacher's (or students') value system

b) The project learning goals and course content in the Project Learning Result Catalogue (see Figure 4)

c) The requirements of the Project Programme (see footnote 4).

d) The basic functions (see footnote 4)

e) The design objectives in the Catalogue of Objectives (see footnote 4)

f) The target criteria of the current MADE assessment procedures in use (see footnote 4).

Learning achievements can thus be checked both by teachers and also by the students themselves in a design study control loop, with the aid of the performance demands listed above.

The caesuras between the phases have been positioned at points where the teaching and learning process has reached a stage which permits an overall judgement of clearly grouped 'learning result packages' comprising individual learning achievements (see Figure 2, column 4).

The fundamental advantages of the MADE Process Plan can be described as follows:

a) Ideal adaptability to all design exercises and Project Tasks, as these are always processed in the same main and subsidiary phases

b) Easy handling, as both simple and complex design exercise and Project Tasks can be controlled and monitored in the same way

c) Less effort in „Project Organization“ (see Section 2 above, typical feature 3), as the basic structure for the sequence of each concrete MADE Project is already available, and the decisions on future action are thus made easier

d) Good method of communication for joint „Project Organization and Realization“ by the teacher and students

e) Simple framework, in which the specific „project modules“ with their course content for a concrete MADE Project (see „Project Learning Result Catalogue“, Figure 4) can be integrated

f) Open to all kinds of teaching and learning methods, materials and media, as the MADE Process Plan gives the teacher every freedom of selection, decision and arrangement of 'his or her architectural design theory'

g) Easier timetabling, as experience will gradually build up, allowing the duration of the subsidiary phases to be reliably estimated

h) High level of transparency during the teaching, learning and design process, as all those involved know from the standardized phases where he/she or the others are at any time

i) Generally better design results, as the structured procedure guarantees continuous work on the project, completion of the design on schedule, and higher quality than with spontaneous, purely intuitive work.

In MADE, considerable value is placed on confronting the students with real building projects or current problems which can lead to building projects. They should not be prepared for any idealized version of reality, but for reality itself.

Orientation towards a concrete Project Task promotes practical design thought and action and, of course, also creative ability, initiative, productive thought, the willingness to make decisions, teamwork, solidarity and responsibility.

6.Conclusion

With the *Model for Architectural Design Education*, a challenge is issued to the figure of the 'architect by devine right' who designs buildings for architects rather than for users. The same applies to designing by 'gut feeling', 'facade fetishism' and architectural design by so-called artistic inspiration. In the final analysis, the aim of this teaching and learning model is to educate students to be quality conscious, so that they may be enabled in their future roles as architects to design building objects both for the *owner* (client) and for the *user* in the best possible way in terms of

form, technology and economy, attaching due importance to the *location*. MADE provides a broad range of procedural options for the achievement of this aim.

In the Model for Architectural Design Education (MADE), considerable value is placed on confronting the students with real building projects or with current problems which can lead to building projects. They should not be prepared for any idealised version of reality, but for reality itself. Indisputably, design draws upon that "certain something" which we generally refer to as "talent". Talent is therefore an indispensable condition for a successful artistic or creative activity. It is not however the only one. A sound education is just as necessary.