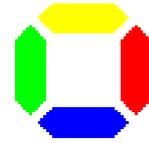


# Nursery for Essen University

Prof. Ralph Johannes, Dipl.-Ing., Architekt HBK (Berlin)



Selected highlights from the course of a **MADE Project** carried out by first-year students of architecture in the summer term of 1988 are described in brief below.

## PREPARATION STAGE

In an information and pamphlet campaign at the University of Essen, students with children drew attention to their particular problems with the question „What do we do with the children during lecture time so as to have the chance to study in some kind of organized manner?“ This was the initial motivation behind the **MADE Project** „Nursery for Essen University“ documented here<sup>1</sup>; as the location for this nursery the lecturer chose the top floor of the university's multi-storey car park (Figure 1: [Essen University campus](#)).

This unusual choice resulted from the following considerations:

- The already acute lack of space in the university's existing buildings meant that no adequate rooms could be spared.
- Together with the recreational areas, lawns and gardens, the existing unused open spaces on the campus were to be preserved as far as possible as plots for future expansion and for use as sites for scientific facilities.
- The location selected could be easily and comfortably reached by car, on foot, or via the lift (suitable for wheelchair users).
- Development would not be cost-intensive, as the "foundations" and also part of the supply and drainage facilities required were already available.
- The project would represent an "architectural enhancement" of the university's ugliest building (Figure 2: [Essen University car park](#)).

## ORGANIZATION STAGE

To perform the **MADE Project** in the best possible manner, the lecturer was now obliged to devote attention to teaching procedures and design activities, and their related organizational problems, one of which was the fact that the University of Essen does not provide students with drawing boards or other relevant facilities for design work, thereby necessitating them to perform their work at home. They only „commute“ to the university for lectures, seminars and the correction of their designs. The lecturer's decisions with regard to the course requirements (e.g. for the achievements expected of the students and the schedules to be

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<sup>1</sup> The choice of a nursery instead of any more permanent kindergarten arrangement depended in part on the following observations:

There are currently approx. 16,000 students matriculated at the University of Essen. Around 1/3 of these live in Essen, and 2/3 outside the city. The University of Essen is therefore a commuter university.

This allows us to assume - although no exact figures are available - that the majority of students with children also live outside. These students thus require at least a place where their children can be looked after for a short period, so that they can attend lectures, seminars, etc. which take place on different days and at different times without undue stress.

maintained) were thus set down in the "**Project Plan**" (Figure 3: [Project Plan](#)). This included the following:

### **1. Project Task**

A nursery where students can leave their small children during lectures and seminars is to be designed for the University of Essen. The intended site is the top floor of the University's multi-storey car park.

### **2. Project Programme** (Figure 4: [Project Programme](#))

which specifies, inter alia, the textual and graphic presentation of project results and the dates for submission. These rules on presentation contribute to uniformity and the exchange of information between those involved in the project, and thus permit "more objective" evaluation of the learning results.

### **3. MADE Process Plan** (Figure 5: [MADE Process Plan](#))

which provides a relatively open-ended but nevertheless structured framework. The phases of the MADE Process Plan give both teacher and students enough room to introduce their own ideas, modifications and creative adaptations.

### **4. Project Learning Result Catalogue** (Figure 6: [Project Learning Result Catalogue](#))

### **5. Project Literature List,**

with notes on relevant specialist literature and sources of information, such as architectural periodical bibliographies, catalogues of building research work and bookseller listings.

## **IMPLEMENTATION STAGE**

### ***MAIN PHASE I : CONDUCTING PRE-DESIGN RESEARCH***

Following the **MADE Process Plan** (Figure 5: [MADE Process Plan](#)) and the **Project Learning Result Catalogue** (Figure 6: [Project Learning Result Catalogue](#)).

#### **Subsidiary phase A: manage project procedures**

The **Project Plan** was introduced and explained to the around 25 interested students. A total of 18 students then signed up for the course. Of these, 11 followed the project through to its conclusion.

The project duration covered one half-year term and the following vacation. Four hours per week were available for formal teaching activities during term time. The project group met regularly on two days each week and started work as a team with clarification of the **Project Task**. This process was initiated by

#### **Subsidiary phase B: identify the situation and acquire information**

The first stage of this was a joint analysis of the site and local conditions (Figure 1: [Essen University campus](#)) in accordance with

**Project module B1: survey existing facilities for the object**  
(Figure 7: [Site of the Nursery for Essen University](#)).

This activity covered checking and documentation of the following factors:

- Reviewing of existing drawings for critical inaccuracies.
- The existing environmental influences, in this case emissions from the neighbouring Technical Supply Centre when the wind was in the east, and intermittent noise from the immediately adjacent railway shunting yard.
- The analysis of existing structural, mechanical and electrical capabilities.
- The gestalt elements of the existing car park and the immediate vicinity.

In the subsequent

### ***Project module B2: collect and process object literature,***

the group jointly read and analysed relevant extracts from specialist literature and magazines as given in the **Project Literature List**, to compensate for the students' lack of experience and required project-related knowledge. The task to be performed did of course involve complex problems such as the appropriate consideration of children's play needs and educational play theory for users from different age groups. The data acquired were selectively categorized and stored in „**Data Lists**“.

In addition, each student was able to record his own personal impressions and thoughts triggered off by this joint analysis of the literature and other sources in his own „**Idea Archive**“.

### ***Project module B3: interview object users and evaluate the responses***

was not carried out because there was no way of reaching the children intended to use the facility. Instead of this, discussions with the organizers of the pamphlet campaign mentioned above were carried out. These discussions revealed that the campaign organizers totally rejected the location of the car park roof as not being suitable for children. Three **MADE** students accepted this opinion. They were offered the opportunity to select an alternative site on the campus, and back up their selection with convincing arguments. Only one of the three „dissidents“ stayed with the project until completion.

Subsidiary phase B was concluded by

### ***Project module B4: determine and define the object characteristics.***

The project group had to clearly define the concept of the object to be designed (Nursery for Essen University). To do that, it was necessary to identify the characteristics of this object.

Four kinds of characteristics were to be covered, viz.

- User characteristics
- Type characteristics
- Purpose characteristics
- Inherent characteristics.

Explanation of the different kinds of characteristic (see [Explanation of Object Characteristics](#)).

The following **User characteristics** were thus identified for the project described here:

- Students' children, aged between 1 ½ and 5

- Parents
- Single parents
- Supervisors
- Cleaners

The **Type characteristics** for the "Nursery for Essen University" were derived from the definition of "building" as a concept, and the Data List. In consequence, the nursery belongs to the categories of:

- independently usable, roofed buildings
- non-residential buildings
- hour-by-hour kindergartens.

For the "Nursery for Essen University" building, this resulted in the following **Purpose characteristics**:

- *generally* to protect people, animals or artifacts,
- *and specifically* for children playing in the care of supervisors.

For the building to be designed, the "Nursery for Essen University", no **Inherent characteristics** could be discerned, either with regard to the "owner" or in the Data List.

The students found the process of determining the object's characteristics difficult, as they had little practice of analytical and terminological ways of thinking. But only when WHAT is to be designed is clear (Figure 8: [Object Characteristics Nursery for Essen University](#)), can one move on to the next subsidiary phase, namely HOW.

### **Subsidiary phase C: plan and ascertain use, gestalt and technology factors**

This subsidiary phase is the pivot point around which everything else in **MADE** revolves. HOW the course is set for a solution to the **Project Task** depends on the creative, clever and consistent handling of this (solution-orientated) phase. On the basis of the information previously processed, this subsidiary phase aims at giving substance and shape to a design guideline image for the "Nursery Essen University", and at the planning and ascertaining of its use, gestalt and technology factors.

The initial step in this process was:

**Project module C1: develop and present a guideline image for the object design in words and pictures** (see [Explanation of „A-B-C procedure“](#)).

Although not all the students were able or willing to decide in favour of a single guideline image, extremely varied images to guide the design, (e.g. "Wichtelburg" - "Brownie Castle", "Feuerrotes Spielmobil" - "Blight Red Playcar", from a popular children's television programme or "Baumhaus" - "Tree House") did arise, and these were then later (in Subsidiary phase E: create and select possible solutions) developed into consistent potential solutions right down to the furnishings

In parallel<sup>2</sup> with the concept analysis and the production of a collage,

<sup>2</sup> In parallel for the following reasons:

- to save time, as the process of discovery of a guideline image, to which the students were unaccustomed, and the subsequent representation of this image using „collage“ is as a rule time-consuming,
- because the development of the „specific function“ and the search for a guideline image can have a cross-pollenating effect.

### ***Project module C2: determine, structure and link object users, functions and spaces***

was carried out. On the basis of the **users** with their needs and possible handicaps, **functions** were deduced and **spaces** allocated to these which would then constitute the "Nursery for Essen University " (Figure 9: [Object Matrix](#))

To ensure that the spaces for the object to be designed (the „Nursery for Essen University“) function correctly, i.e. that they are capable of fulfilling the assigned functions with regard to use, gestalt and technology in a manner acceptable and beneficial to users,

### ***Project module C3: identify, order and group design objectives for the object***

involved the formulation and compilation in a Catalogues of Objectives (Figures 10 and 11: [Catalogues of Objectives](#)) of mandatory, recommended, optional and desirable objectives, known in MADE as "MUST", "SHOULD", "CAN" and "WISH" Objectives (see Explanation: [Design Objectives](#)).

### ***Project module C4: determine floor areas***

The objectives contained in the **Catalogue of Objectives** which refer to the linking of distinct spaces were represented in

### ***Project module C5: link the spaces inside and outside the object***

in an „**Adjacency Graph**“ (Figure 12: [Adjacency Graph](#))

The sequence adopted in the construction of such a graph is as follows:

1. All spaces concerned are listed and sequentially numbered. The result is the **numbering list**.
2. In accordance with the stipulations of the „Catalogue of Objectives“, each space is allocated to another space in sequence in a binary form. The result of this is the **binary list**.
3. All the binary relationships are interlinked in a **matrix**, and the number of links per line totalled.
4. The **graph** is drawn.

## **MAIN PHASE II : CREATING THE DESIGN**

### **Subsidiary phase D: weight and rank aspects of quality<sup>3</sup>**

In **MADE Projects**, assessment procedures are used as a design aid, providing more precise guidance for the creation and assessment of quality for the possible solutions to be worked out in subsidiary phase E which follows.

Due to time constraints, a simplified procedure, the **Points Method** (see [Explanation of Points Method](#)) divided into two separate stages, the first before the start and the second on completion of subsidiary phase E, is used in undergraduate studies, and thus also in the project described here.

In the first stage, suitable **CAN** and **WISH** Objectives were initially selected from the „Catalogue of Objectives“ (Figures 10 and 11: [Catalogue of Objectives](#)), e.g. **CAN** Objectives C3, C5 and C9 with regard to USE, and **CAN** Objectives C2 and C4 with regard to GESTALT. These were declared as "target criteria", and entered in a **Rating Table**. In consultation with the students, these target criteria were assigned a weighting in points according to their importance.

There then followed

### **Subsidiary phase E: create and evaluate possible solutions**

#### ***Project module E1: sketch at least two variant solutions***

in which at least two variants of the nursery were to be produced in the form of sketches by each student individually. This creative act was supported and controlled with the aid of the relevant **Project Learning Results** previously compiled, i.e. the

- Catalogue of Objectives
- Adjacency Graph
- Floor Area Schedule
- Rating Table with the weighted target criteria.

Where appropriate, a working model could be produced to assist in formfinding.

#### ***Project module E2: check and select variant solutions***

The second stage of the **Points Method** (see above) then started: the quality of the possible solutions sketched (variants) was assessed in pair by pair comparison using the criteria established in the first stage, and marked for fulfilment of these in an **Evaluation Table**. The variant with the higher total in each case constituted the **Scheme Design**, which was used as a basis for the last

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*Quality* is defined as the totality of features, attributes and characteristics of a facility, product, process, component, service or workmanship that bears on its ability to satisfy a given need (fitness for the purpose). It is usually referred to and measured by the degree of conformity with a predetermined standard of performance. In simple terms quality involved meeting the owner's requirements, which may be simple or complex. They may be stated in terms of a required end result or as a detailed description of what is to be done. (10)

## Subsidiary phase F: complete the scheme design

### *Project module F1: compile final drawings of the scheme design*

to produce the drawings for a "refined" design (Figure 16: [Final designs](#)) and

### *Project module F2: describe final design*

with a written **Explanatory Report**. All the project learning results were then compiled and submitted to the lecturer in the **Project Report**.

### *Project module F3: construct a model of the object*

produced the three-dimensional representation of the "Nursery for Essen University". The "large" scale of 1:50 required was selected to ensure that the models appeared realistic and reflected the original as closely as possible. Great value was attached to the quality of workmanship, as a model is easier to comprehend in toto than the original. It conveys the complete appearance of the object from inside and outside, from all sides, and with all details.

Frequently, a model displays interrelationships and sizes better than they can be experienced in reality.

A total time of one month was allotted to produce the model - including all internal areas (Figure 17: [Interior view of „Vilifkulla Castle“, Thomas Kremer](#)) with all equipment and furniture.

**END**

of the MADE Project „Nursery for Essen University“

It has in the meantime become customary to exhibit the results of **MADE Projects** from undergraduate courses publicly either in the university or elsewhere, depending on the "client". The "exhibition" is seen as a medium to provide the student with specific opportunities to present and "sell" his or her design. The exhibitors learn to deal with the circumstances of an exhibition and familiarize themselves with the presentation aids required (e.g. uniform presentation for the exhibition, poster design, press releases). Furthermore, they thus check the response to their exhibits, e.g. by a written opinion poll in which visitors are asked to express their criticisms. At the exhibition of the designs for the "Nursery for Essen University", 304 visitors cast their votes in writing (see [Opinion poll](#)).

### **Concluding remarks**

With the **Model for Architectural Design Education MADE**, a challenge is issued to the Figure of the "architect by divine 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.

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