

## DATA BASE OF PLANNING KNOW HOW FOR PASSIVE HOUSES



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### Summary

The data base presented hereafter contains about 600 single sheets of detailed information on the construction of passive houses. These sheets are supposed to be used by pronounced passive house experts who lecture in courses and seminars introducing architects, builders, HVAC-professionals and building physicists to passive house planning know how.

**Keywords:** Passive house, advanced training, planning know how, building envelop, HVAC, building process, data base

### 1 Introduction

In a joint project with the Energy Institute Vorarlberg (Austria), our Department for Construction and Environment at Danube University Krems (Austria) developed a data base containing planning know how for passive houses. This project has been funded by the Austrian Federal Ministry for traffic, innovation and technology within the program “House of the Future”.

### 2 Background

Passive houses will only turn into an accepted standard if they are planned and built by significant numbers to the complete satisfaction of their users. This strongly demands for the avoidance of mistakes in their implementation. Mistakes and damages resulting from them can be avoided by careful designing processes and implementation as well as by choice of qualified teams of builders and craftsmen and steady quality control throughout the whole building process.

On the other hand this presupposes architects, building physicists and HVAC professionals to be explicitly trained in terms of passive house requirements. And this, finally, is only achievable with intensified training within these groups. The presented data base of planning know how for passive houses reacts to the pronounced need for schooling

material of high quality in both content and didactics, which arises from this demand of training.

### 3 Basic project idea

Information about principal motivation for passive houses exists to great extend – at least in German language.

In contrast, the presented data base aims at supporting passive house experts in their preparation of lectures, seminars and courses on the specific topics of how to successfully plan and build this housing standard. In this field, schooling data has been rare so far.

The schooling data developed by our department exclusively deals with specialised knowledge which is necessary to realize the extremely high energy efficiency of passive houses.

This focuses on three crucial areas:

- **Building envelop** (materials, composition of construction layers, alignment of connected building parts, windows, air and wind tightness)
- **Building equipment** (HVAC)
- **Building process** (composition of building team, planning and construction work flow, quality control, final acceptance)

### 4 Developing team

We were successful in engaging a developing team of experts in the start up phase of data generation for the presented project. These experts were pronounced connoisseurs of this building branch with Dr. Wolfgang Feist of Passive House Institute Darmstadt being among them. They brought in their broad knowledge on the topic and facilitated information flow.

### 5 Targeted users of the data base

The presented data base primarily refers to passive house experts intending to give lectures on the correct planning and building of passive houses. Architects, builders, building physicist and HVAC professionals are expected to be the main addressees of these lectures. They will acquire specialized knowledge in the lectures.

### 6 This is how it works

There are about 600 pdf sheets of uniform design available in the data base. These sheets cover the whole range of issues concerned with planning and building a passive house. In many cases these sheets are complemented by comments which are supposed to support the lecturer by providing him with additional information on the related sheet. He is free to use this information for his presentation.

These 600 sheets can be searched and downloaded separately. In addition 6 packages dealing with the main topics of passive houses are compiled out of these single files.

They cover:

- Idea and principles of the passive house
- Building envelop: minimizing loses
- Building envelop: optimizing gains
- Building equipment: ventilation
- Building equipment: heat supply
- Building equipment: electrical applications

This projects aims at spreading passive house knowledge and informing as much concerned professionals as possible. Therefore the provided schooling data is stored in an Internet data base which can be accessed free of charge.

## **7 Short walk through the data base**

In the register “Einzelfolien” (“single sheets”) you can choose a topic. Once you have done so, a list of sheets dealing with the desired topic pops up. Moving the cursor over a sheet’s title you see a tomb nail image of the sheet. Clicking the “info” button starts the download of the complementary comments to the related sheet.

If you want to download the sheet or the comments you are requested to register yourself as a user. This registration is completely free of charge. Your entrance code is sent to you consecutively. Using this code you are free to download all sheets and comments in the data base.

Furthermore you can download whole packages of schooling sheets in register “Schulungspakete”.

## **8 Future developments**

Within the coming months we intend to extend the data base by a further feature: The register “Produktprobe” will provide lecturers with the possibility to order demonstration material from the producers and suppliers of passive house building products.

Experiences of frequent lecturers show that it makes a huge difference whether participants of seminars and courses only hear about e.g. triple glazing or if they really have the opportunity to look at and touch an illustrative model of a window containing this glazing.

This is why the data base should offer ordering forms for the lecturers to fax them to the respective producers or suppliers who, in turn, provide the designated items on terms they can configure.

For producing and supplying enterprises this constitutes an attractive and direct access to a prime target group of their products: participants of professional courses on passive house planning are very likely to plan passive houses themselves consecutively. Knowing a certain product from the course, they are very likely to refer to it in the first place when setting out to plan their future projects.

This is why we invite the concerned companies to use this opportunity to present their products and materials in the data base and to offer lecturers the possibility to present this demonstration material to participants of training courses on their parts.

For the time being all schooling data is provided in German language only. In order to make the stored planning know how accessible for Non-German speakers we are

actively looking for partner organisations and research institutes especially from new EU-Member states, who are interested in translating and adapting the schooling material to the specific situation of passive house building in their countries.

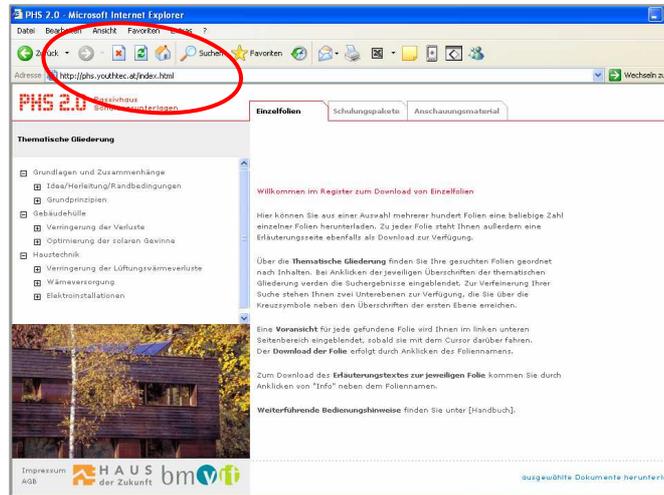


Fig. 1 The presented data base is accessible at <http://phs.youthtec.at>

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