

HOW POTENTIAL BUILDERS ARE TESTING PASSIVE HOUSES



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Summary

Sonnenplatz Großschönau provides European-wide the first possibility for potential buyers to test passive houses before they decide which house they want to build. Different companies have built six show houses for demonstration and marketing purposes at Sonnenplatz in Großschönau, more show houses will follow. The houses fulfil the passive house standard and the Austrian klima:aktiv criteria. To assure the quality and to check the use during the tests of all show houses, the buildings are equipped with an innovative, extensive assessment system. Beneath heat, electricity and water also indoor-quality and behavioural matters get metered and documented. For the first time, data of different building types get metered with the same metering system at the same place. Through their function as show houses, people of different social stratum are using the houses for some days or a week. This provides unique possibilities to survey the behavioural impacts on the energy consumption in passive houses.

Keywords: Passive house, dissemination, test living, quality assurance, klima:aktiv, indoor-quality, behavioural impact

1 Introduction

The Passive House as one of the best documented house standards with advantages for users, producers and the general public should be state-of-the-art in the field of building new houses. However the buyer trusts in the stage of decision making regarding his new house in existing and familiar house types, in experiences made by his relatives and friends and in his own automatic beliefs through years of living in normal high-energy houses. Therefore it is interesting to know how we can accelerate the dissemination of passive houses and which methods fit best to support interested buyers in their decision process to trust in the concept of the passive house.

2 Convincing, Feeling, Touching – Test Living

Taking a deeper look into the associations made with the term Passive House we can see that after the most mentioned item „saving energy“ the following associations have negative impacts: „expensive“ and „typical design“ are the next items which are related to the passive house by the end users. In fact we have to overcome prejudices and rumours, which do not base on actual facts. This is one of the hardest tasks which communication experts can face.

One effective way to overcome this prejudices is to strengthen the trust into the Passive House concept. Therefore i.e. open-days at passive houses all over Germany and Austria have been introduced years ago.

As buying a house is one of the most important and cost intensive decisions in the life of a common person, some hours in a passive house don't fulfil the need of emotional conviction which is necessary to buy a passive house. Sonnenplatz Großschönau therefore makes the next step:

At Sonnenplatz Großschönau it is possible for the first time to live in real passive houses for a weekend or a week. Show houses for test living have been built by more than 110 companies, opened to the public. With a combination of information, inspection, exchange of experiences and test the potential buyer of a new house should slightly trust the Passive House concept. The whole village consisting of actual six different passive houses and its packages and offers for the test-users are designed to meet the requirements of the common buyer of a new house. Through the emotional components – sleeping in the house, touching the technical equipment, hearing the sound of the airing system – more trust is established beyond the test-users. Energy efficient living and ecological materials are taught in a cosy and acceptable way. Neutral consultation without any pressure to buy is part of the necessary framework to strengthen the trust into passive houses.



Fig. 1 Comfort and design help to establish positive emotions

3 Passive Village Sonnenplatz Großschönau

Within the first stage of construction six show houses in passive house technology have been built with 10 accommodation units. Under the lead of the six main contractors more than 110 companies have worked together. The following pictures will document, that different designs and different types of passive houses have been built. Different construction materials and different grades of prefabrication are demonstrated and

documented. A special quality team assured the quality of each house by checking all plans, the PHPP-calculation, and by carrying out two blower door test and regular visits at the building site. Each passive house meets the requirements of the passive house institute in Darmstadt and the klima:aktiv criteria of the state of Austria. This is the basis for the consumer so that he can be sure, that this house meets the highest quality standards and additionally will be able to get the best public funding depending on the country where it will be built. Interested persons are able to visits the houses and additionally can test and feel the comfort and the quality of the indoor-climate through living there for some days. Each of the houses is completely equipped with furniture, kitchen, cookware, and home entertainment. This goes as far as there is in every house a special wellness area to point out the emotional component and the comfort.



Fig. 2 Five of the passive houses at Sonnenplatz Großschönau

3.1 Support and Consulting

The team of Sonnenplatz Großschönau cares about the request of the interested people and the testers of the houses. In all houses are information material, an info-point with detailed descriptions of the house, a diary of the building process of this special show house and a presentation of all partner companies which have helped to build this house. The utility room is designed as a show room, so that all interested people can see the necessary components to form a passive house.

3.2 Construction

The parts of the structure, the roof and the used materials differ between the built passive houses. For testers of the houses and tourists this increases the chance that a house similar to the imaginations of the different people can be found at Sonnenplatz Großschönau. Additionally this ensures that the prejudice of a typical construction form will be smoothed out. The structure itself is shaped by single and clear lines based on a cube, a cuboid or an octagon. The shape of the roof varies from a flat roof, a pent roof, a pavilion roof, to a saddleback roof and a ridged roof. Modern and traditional types of houses are there to demonstrate the plurality of the modern passive house concept.



Fig. 3 The O[p]taeder of Modern Bauen GmbH



Fig. 4 The Jungbrunnenhaus of Activ Haus GmbH



Fig. 5 The Domizil Buchner of Holzbau Buchner GmbH



Fig. 6 The EHLIA of Johann Winkler GmbH



Fig. 7 The Haus Schiller of Schiller Hochbau-Zimmerei



Fig. 8 Visualisation of the Wohnbox of Tischlerei Alfred Schandl

3.3 Special Equipment for the Testers

All houses are equipped with special meters to survey the actual energy consumption. Sensors are implemented to check if windows and doors are opened or closed. Cold and hot water, electricity in several categories and of course the necessary energy for heating is metered in real time. This makes it possible to give every tester at the end of his testing period of the passive house a document which certifies how much energy he used during

his stay in the passive house and how much money he will save per year by buying a passive house instead of a conventional house. The mentioned info-point allows access to the internet and makes it possible to chat with the construction company or the Sonnenplatz-Team. Special information material and lectures about ecological construction are complementing the program.

4 Results

The new offer test-living is accepted very well within the target group of potential home buyers. Since the opening ceremony on 12th of May the houses have been tested by many potential buyers, journalists, opinion leaders and experts. More than 1.500 persons were waiting in the interest list for living in a passive house at Sonnenplatz Großschönau for some weeks. The people who are using this new possibility are coming from all over Austria, and international guests are arriving in Großschönau, too. The number of spent nights varies between one and seven, with an average of 3.64 days. Interest in the possibility of testing the new house before to buy it is a lot higher in the field of potential home buyers. Surveys at other show house parks state a willingness of over 70 % of the interviewed people to use test-living. More than 1.000 people attended the opening ceremony with special guests like European Commissioner a.D. Dr. Franz Fischler. Also the fact the test-living costs money is no problem because the people accept that information and the services at Sonnenplatz Großschönau are more than worth the money. Only 5 % of interviewed people have called that test-living should be free of charge.

5 Conclusions

A strict factual discussion about the advantages of a passive house seems to be to weak to overcome prejudices of many potential buyers. The customer sticks often to traditions and previous made experiences. The decision for or against a special house is a decision which a normal person makes only once in a lifetime. Therefore the readiness to assume risk isn't very high of the average home buyer. Single positive experiences with the technology are often not noticed, but the media is taking up the topic more and more. The idea of testing a passive house for more than just an hour and to actually live there for some days to feel and touch the components and the concept itself seems to go down well within the target group. This concept has the potential to significantly increase the dissemination of the passive house concept across Europe.

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