

# Press Release

## Largest Passive House housing estate in Innsbruck exceeds expectations

Darmstadt, 12 August 2010. The “Lodenareal” by the Neuen Heimat Tirol Association in Innsbruck has a total of 354 apartments, making it the largest Passive House development in the world. The objective of this project was to create rental apartments with extremely low heating costs and a very high level of comfort. The initial results of a research project regarding the energy consumption, living comfort and user satisfaction in this innovative building are now available: the heating costs for an 80 m<sup>2</sup> apartment are just about €6 per month.



Since last autumn, the research project that was commissioned by the Austrian State of Tyrol had been investigating whether the new construction technology would live up to expectations. Anton Steixner, Minister for Environment and Energy and Deputy Governor, is impressed by the initial results. “The Passive House project has successfully passed the practical test. The low energy consumption and the high level of tenant satisfaction have exceeded our expectations. The measured results prove that the energy consumption of the model building is only a quarter of that in a comparable building constructed according to the current building standard.”

**Affordable housing with a high level of comfort** – this is a fact which is of particular interest for future tenants of Passive House buildings, as the heating costs for an 80 m<sup>2</sup> apartment amount to just about €6 per month, with an additional €6 required for domestic hot water. Electricity costs for the ventilation system are also surprisingly low, at around €4 per month.<sup>1</sup> Deputy Governor Anton Steixner is convinced, saying, “This innovative construction technology will relieve the household budget enormously while ensuring maximum comfort.”

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<sup>1</sup> Extrapolation based on measurements made during the last nine months.

### **Pleasant temperatures and high indoor air quality**

One of the main findings was that the extremely small energy consumption is not associated with impairment of comfort. Bruno Oberhuber of the Tyrolean Energy Agency explains, "A comfortable temperature of 24 °C was measurable inside even when the outdoor temperatures were -15 °C." The measurement of the air quality also provided convincing results: the limit values of 1500 ppm for carbon dioxide pollution were constantly complied in the bedrooms equipped with home ventilation. In comparison, apartments without ventilation systems were sometimes found to have values of over 4000 ppm. Bruno Oberhuber says that "it is amazing that the energy consumption remains constantly low, independent of the user behaviour".

### **High level of user satisfaction**

For Klaus Lugger, it is obvious that the Neue Heimat Tirol Association has "achieved its target of providing high-comfort, affordable housing". The Director of the Neue Heimat Tirol Association is particularly pleased with the results of the occupant survey. "The question regarding overall satisfaction was answered with 'very satisfied' or 'satisfied' by more than 90 % of the occupants; regarding the heating, 96 % were 'very satisfied' or 'satisfied'. The rating of the ventilation system with heat recovery, based on the school grading system, shows that about 80 % of the occupants graded it as 'very good' or 'good'. The results are convincing."

### **Motivation for the energy strategy in Tyrol**

The results have great implications for the country's energy strategy. The Minister for Environment and Energy, Anton Steixner states, "These results encourage us to formulate Tyrol's energy strategy objectives, as the demand for space heating is around 40 % of the total energy demand in Tyrol. Thus there is a great potential for savings here, which we need to pursue with high priority."

### **About the Research Project**

Since autumn 2009, measurements have been carried out within the framework of the research project "Lodenareal Passive House Housing Estate – Indoor air quality, losses due to building services, domestic electricity consumption in Passive House rental apartments", which was commissioned by the State of Tyrol and the Municipal Services of Innsbruck AG. Under the direction of the Energy Agency of Tyrol, a total of 18 apartments are being investigated in cooperation with the Building Physics Unit of the University of Innsbruck, the AEE Intec (Institute for Sustainable Technologies) and the IFZ – Inter-University Research Centre for energy consumption, indoor temperatures, indoor air quality etc. An important aspect of the research project is the possibility of optimisation for building services. The project will be concluded in 2011.

### **The Lodenareal**

The "Lodenareal" housing complex has already received several awards for its high standard of construction and building services. The Passive House residential building with a total useable area of 26000 m<sup>2</sup> is characterised by the highest level of insulation and the best quality glazing. The building also has ventilation with heat recovery. Two groundwater wells are used for pre-heating or pre-cooling the air. The remaining energy demand for heating and domestic hot water is met by the use of solar panels covering an area of 1000 m<sup>2</sup> as well as a pellet heating system.

### **Additional costs for the Passive House construction**

In response to questions by journalists, Lugger explained that the additional investments for achieving the Passive House Standard in new multi-storey buildings are currently about 5 % of the usual construction costs. Neue Heimat Tirol is therefore willing to apply this Standard in many other of its building projects, especially as this has been set as an important EU objective.

### **Tyrol at the forefront**

"With the findings presented here and through similar building projects, the Austrian State of Tyrol will be at the forefront in the development of energy efficient construction in the future," states Wolfgang Feist, Director of the Passive House Institute Darmstadt and Professor of Building Physics Unit at the University of Innsbruck. Dr Feist also specially praised the scientific quality of the measurements during the random inspection of the Lodenareal. "In the coming years, particularly through comparison with a reference complex, this will help to clarify important issues

relating to living comfort and healthy housing, which are currently still the subject of debate.” Indeed, these are among the themes that have inspired 15<sup>th</sup> International Passive House Conference to be held in Innsbruck in May 2011, the Passive House Institute’s premier Passive House event, this coming year organized in concert with the University of Innsbruck.

### **About The International Passive House Association**

iPHA is an independent, objective network of Passive House stakeholders including architects, planners, scientists, suppliers, manufacturers, contractors and property developers. It works to promote the Passive House Standard and foster a greater public understanding of its significance. Encouraging the exchange of Passive House knowledge, iPHA communicates with the media, the general public and the entire range of construction professionals.

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