

First passive apartment house in the Czech Republic

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The passive apartment house will grow in Prague 4, close to the Kunratický Les forest park. It will be a nine-storied building with 42 housing units, with the layouts of 2 rooms + kitchenette to 4 rooms + kitchenette. In addition to environmental materials and a peripheral shell of an extremely high quality, the building also features a source of energy for room and water heating: recuperative units will be complemented with solar systems and waste heat supply from the Mělník power plant. "According to our calculations, the costs of heating will be at about a hundred crowns a month per flat," says J. Řežáb, JRD's Managing Director. Construction will commence in the first half of 2010, completion is scheduled for the following year.

Energy pioneers

"Even though we tried very hard, we didn't find a property developer that would, as a standard, offer energy class A buildings," says Jan Řežáb. In contrast, this property developer does not build residential buildings of a class other than A (the annual energy consumption for heating must not exceed 45kWh per square metre). This usually involves small projects with not more than tens of flats; as regards locations, the main territories are Dolní Měcholupy and Uhřetěves. The interest in low-energy housing is stable, according to the company's management, and economically rational. "We are basically selling at the same prices as our competitors in the same locations. The prices usually range between CZK 43 to 55 thousand per square metre, but without VAT," says Řežáb. However, the benefits of the significantly lower energy costs are huge - the company estimates the savings at CZK 10 to 15 thousand a year for a standard flat.

Property developers versus energy

Domestic property developers are going through tough times today (a short time ago, they even wrote an open letter to the government and the banking sector), but it is not so true of JRD. "We felt a decline in sales, but hopefully we're through," Řežáb says with reason. Last year the company finished projects with 58 flats in total, this year four other projects are underway with a total of 61 flats, and ten other projects are being prepared. The credit diet applied by the domestic banks today to basically all property development projects does not involve JRD. "We don't work with bank credits at all, we're able to finance our projects from our own resources," says Řežáb.

Řežáb does not expect any financial support from the Green Savings programme, either: "I think the intention of the programme's authors was to make sure the property developers cannot reach the subsidies, which is strange, to say the least, because residential and commercial projects are very frequent among property developers. Likewise, it is limited by the timeframe - the programme will be finished in 2012, and it is not virtually possible to go through with any project by that time." However, he basically evaluates the programme positively: "I think the technical parameters are set properly. And the programme is a turning point - for the first time ever, subsidies for a complex solution to the energy demands in construction are provided here."

However, JRD has (which is a bit paradox) objections to the support for the construction of passive houses, as stipulated in the programme. "It is slightly paradoxical that the economic return of the costs is slower than in case of low-energy buildings - this is due to the necessity to use expensive materials and technology," says Martin Svoboda, JRD's Director. According to him, meeting the consumption limit in a

passive house is too demanding in terms of equipment and finance. “It might be more efficient to apply stricter limits on new construction activities,” Svoboda points at the rather “soft” lower limit on energy consumption in new buildings, which is 120kWh per square metre today. And Řežáb adds: “An acceleration of energy-saving construction projects can be only provided through the pressure exercised by standards, in my opinion.”

According to expert estimates, our country currently has a thousand low-energy and passive buildings - usually family houses. However, this year’s “Rockhouse - Czech Low-Energy House” contest did not award the first prize because of the panel’s high demands.

Architects: energy savings do not bring limitations

In the long run, JRD has cooperated with the studio podlipný/sladký architekti. We talked with its two architects, who have many years of experience with energy-saving residential buildings, so unique in the Czech Republic - Luděk Podlipný and Martin Sladký - about some circumstances of this type of construction.

What limits an architect most in the design and proposal of low-energy and passive houses?

In the former case, an architect is not virtually limited by anything, as long as he can use top-quality building materials and window panes currently available on the market. The situation is a bit more complicated in case of passive houses. It is necessary to put more emphasis on the orientation and compact mass of the building and the quality of its details. And the share of glazed areas to the total façade area and the design of the façade screening are also very important here. Today, special building technology, i.e. the use of controlled ventilation with recuperation, solar water heating and so on, is already a must in a passive house.

As regards passive houses, is it possible that “energy-saving” is, to some extent, in conflict with other building qualities, mainly aesthetic?

The answer to this question is basically contained in the previous answer. We are concerned that in case of a passive house, the architect will have to fall back on his requirements in some cases. Compact mass, larger structural thickness, size verified by calculations and locations of window openings are more or less given, which goes against free architectural design. However, we don’t perceive them as absolutely principal limitations, but as part of the building specifications.

Does the market offer the necessary materials and technology for passive buildings?

The market already offers the materials and building elements, but the prices of some of them have to go down when they become more commonplace.

What do you personally see as the biggest obstacle to more extensive construction activities of this type?

As far as passive houses are concerned, we can say that the costs of their construction are hardly returnable today without state support and subsidies.

There are opinions that it is virtually impossible to build a “decent” passive apartment house.

We are only at the stage of designs and projects for passive apartment houses, yet the example of Western Europe shows that experienced architects and builders can produce valuable houses aesthetically and functionally - for example at the Vauban estate in Freiburg, Germany. After all, our design for JRD will be also passive.

