

Object name

**Oudenaarde, Working shed loft****Belgium****Object description**

This project deals with the renovation of an industrial shed into a single-family home for a family with two children. Initially the building served as the current owners' workshop, which eventually turned out to be too small and therefore had to be relocated. As a result they decided to turn the building into their home. Different lectures on passive construction aroused the owners' interest and eventually brought about the outset of a passive renovation. The existing volume was almost entirely preserved, but the building arrangement was completely modified. Furthermore, a considerable number of window openings was provided, allowing the house to have the advantage of sufficient day light.

A new continuous insulation shell was installed on the inside of the existing structure (box-in-box construction): the walls were insulated using the wooden frame on the inside of the construction, the existing roof was thoroughly insulated and a new, completely insulated, massive concrete floor was constructed. The box-in-box construction ensures the absence of thermal bridges.

**Fact sheet**

Loft house in Oudenaarde	
Treated Floor Area	281 m <sup>2</sup>
Number of apartments	-
Completion date	2007

**Energy standard [PHPP]**

Heat requirement / year	15 kWh/m <sup>2</sup> a
Heat load	11 W/m <sup>2</sup>
Primary energy requ.	kWh/m <sup>2</sup> a
Air-tightness (n <sub>50</sub> -value)	0,47 1/h
Building type	Timber frame

**U-value**

Exterior wall	0,10 W/m <sup>2</sup> K
Roof	0,09 W/m <sup>2</sup> K
Basement floor /	0,11 W/m <sup>2</sup> K
Floor slab	
Windows / average	0,76 W/m <sup>2</sup> K

**Specification ventilation system**

Central ventilation with heat recovery

**Heating installation**

Electrical heater on ventilation air

Construction costs (excl. finishing and installations)	392 Euro/m <sup>2</sup>
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**Building owner**

Van Dorpe

**Architect/Planner**

Dirk Baert

**Photo credits**

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