

# Linesøya thinking a building as a living organism

LIPA. LINESØYA PASSIVE HOUSE. ANDRÉ ALMEIDA, CYRIL CHABAUD, MAFALDA MAURÍCIO. MAY 2010

## EXISTING BUILDING CHARACTER

The project focuses in trying to find and emphasize the main character of the existing building. Massive basement, floating house made of a vertical wooden cladding and rythmical structure are the elements creating this identity. Despite revealing an identity, this approach is avoiding a conservative way of thinking that would be keeping things how they are instead of how they could be.

site plan 1:500

fig.01  
existing building

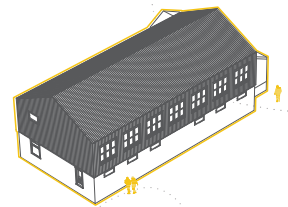


fig.02  
massive basement

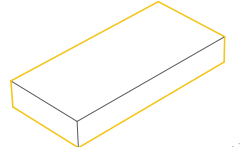


fig.03  
rythmic structure

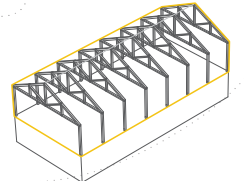
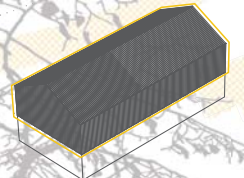


fig.04  
vertical wooden cladding  
floating house



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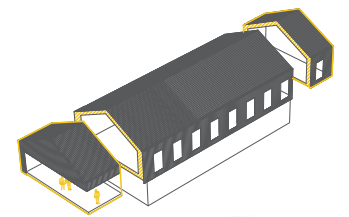
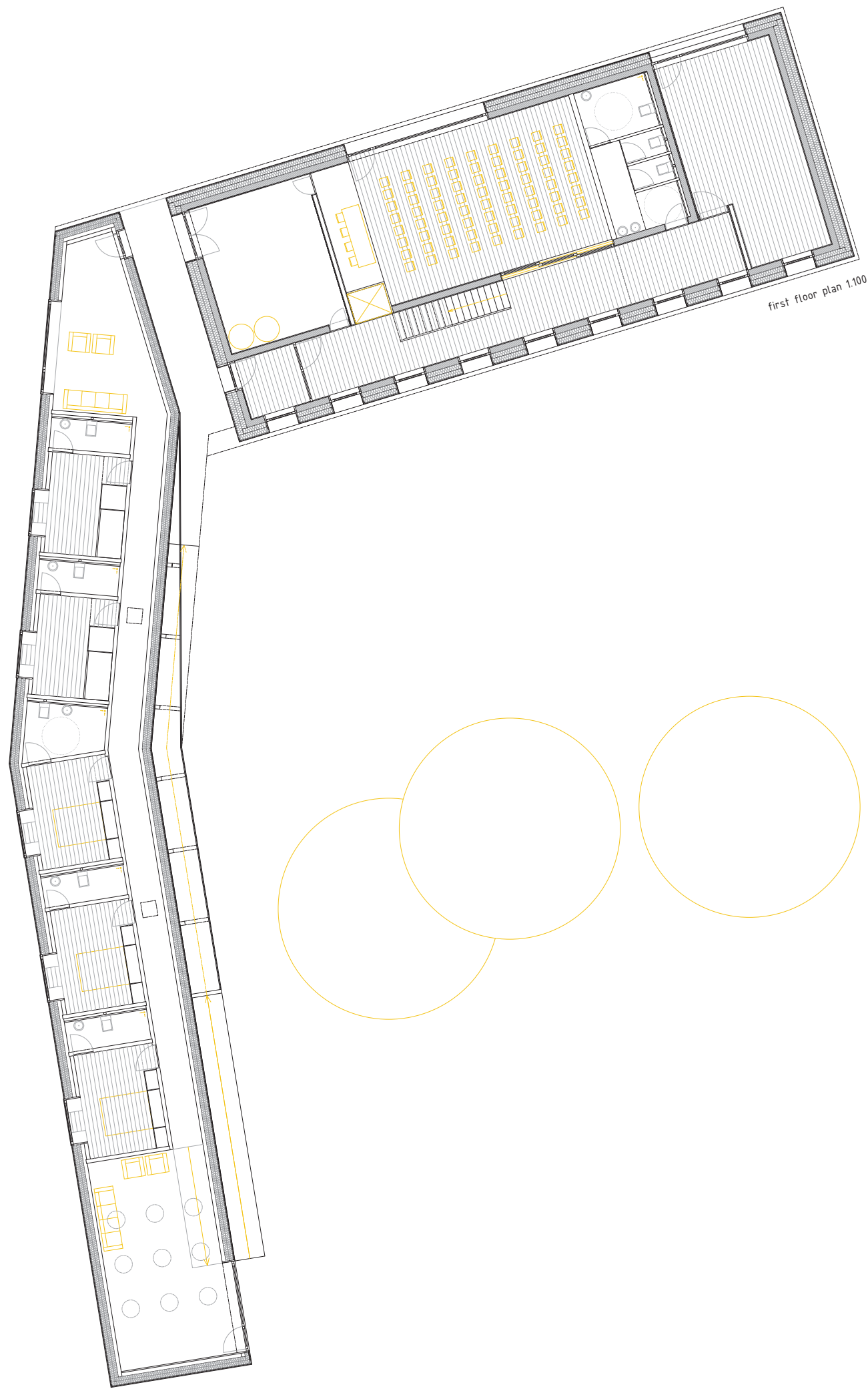


fig.05  
building extrusion (1)

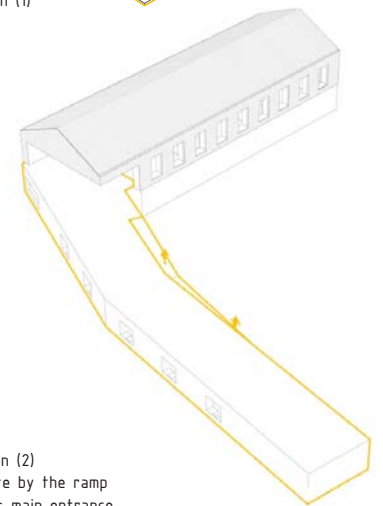
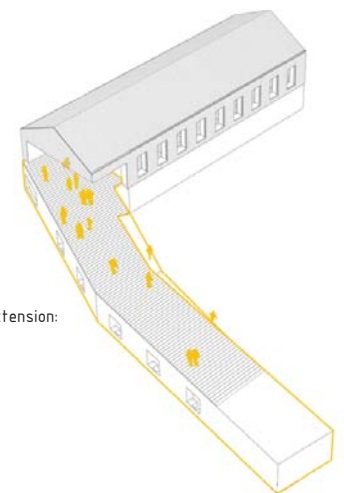


fig.06  
building extension (2)  
progressive route by the ramp  
fill the building's main entrance

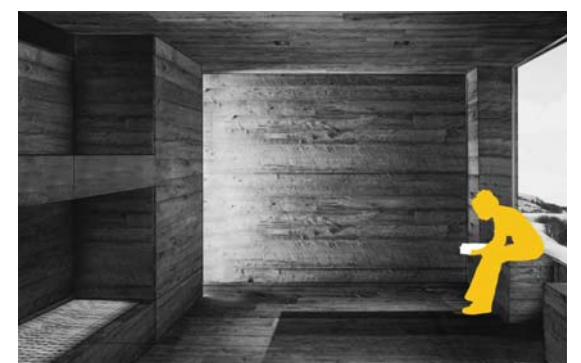


floating house:  
restaurant+  
office+  
private house

massive basement:  
conference room+  
gym+  
storage

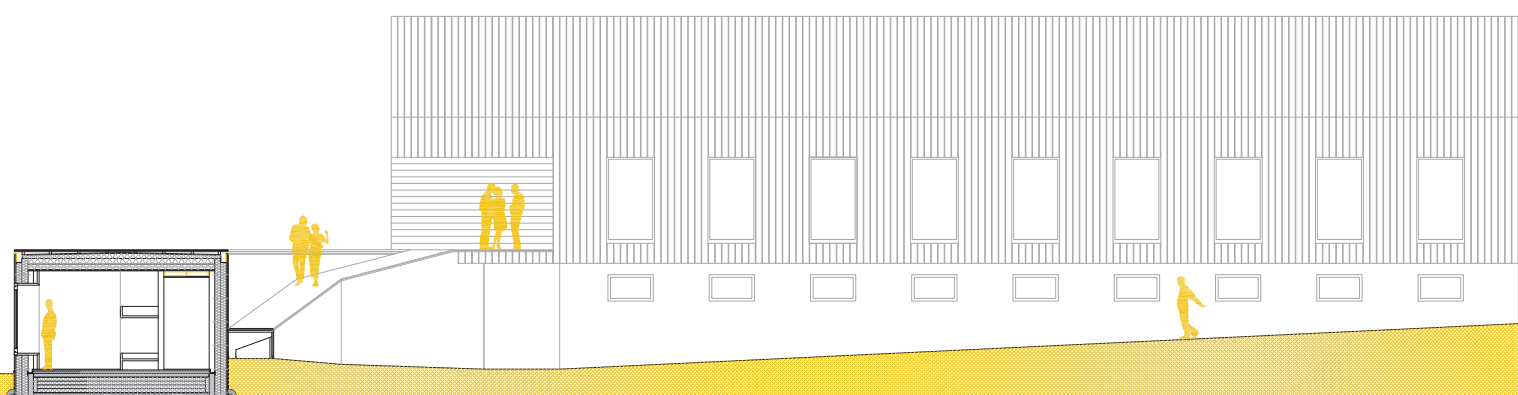
massive basement extension:  
hotel rooms+  
common room

fig.07  
wooden deck



**WOODEN CAVE**

the hostel is like a cave, sculpted into wood. furnitures like beds and benches are also objects participating to this specific atmosphere.



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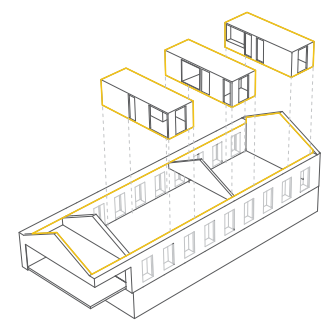
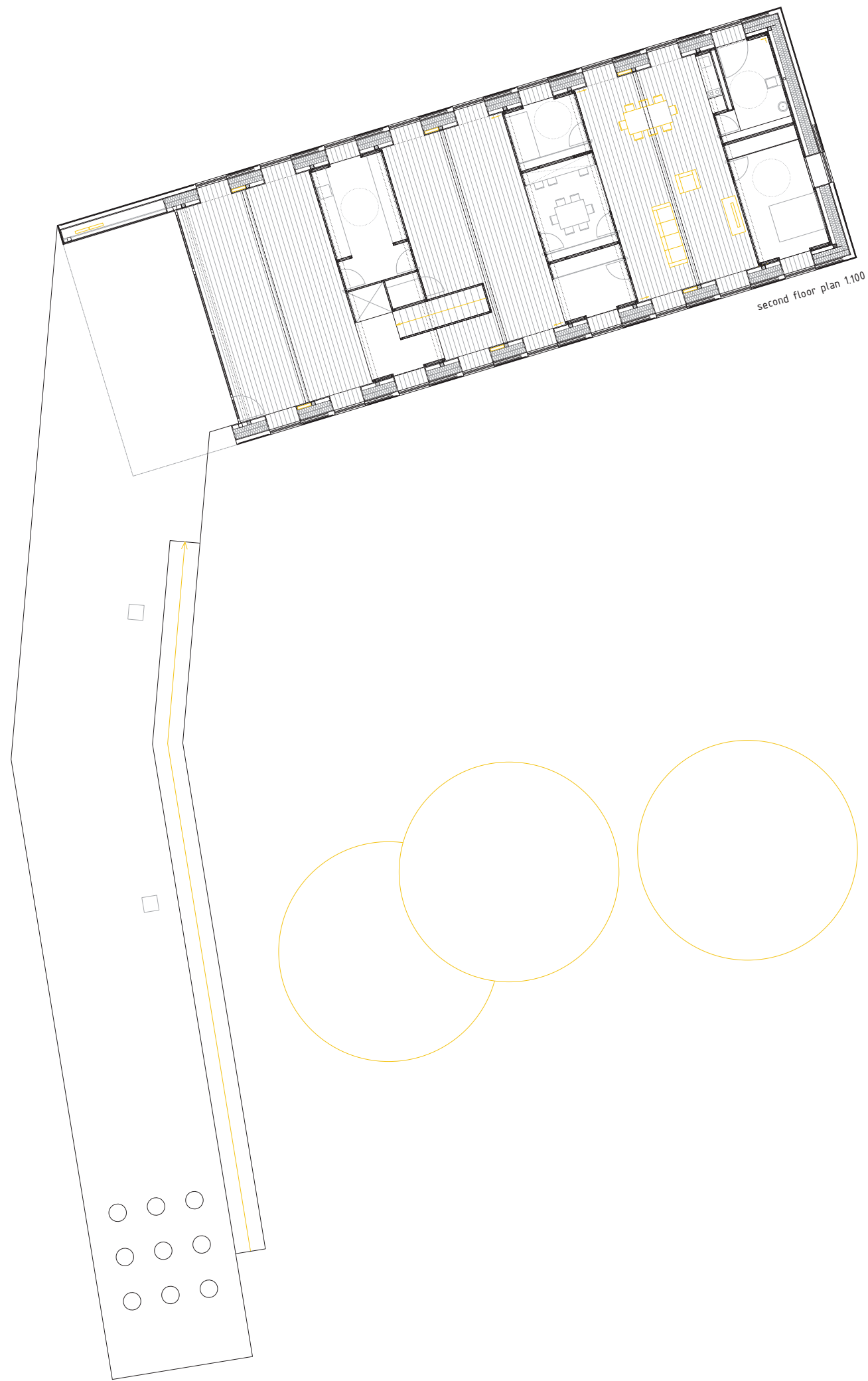


fig.08  
boxes inside a shell

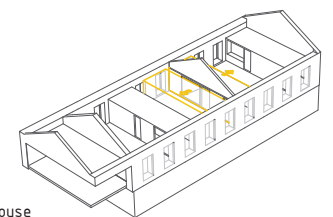
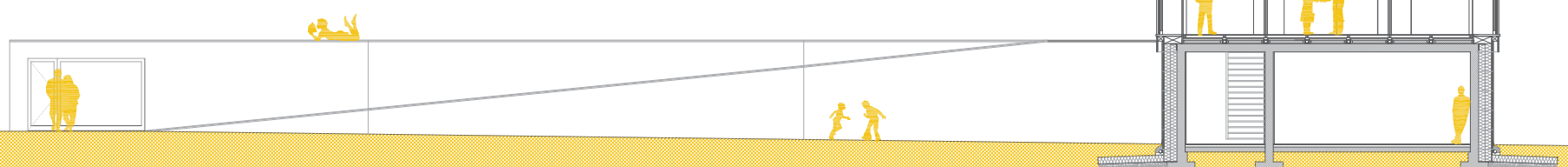


fig.09  
moving box  
from winter to summer house

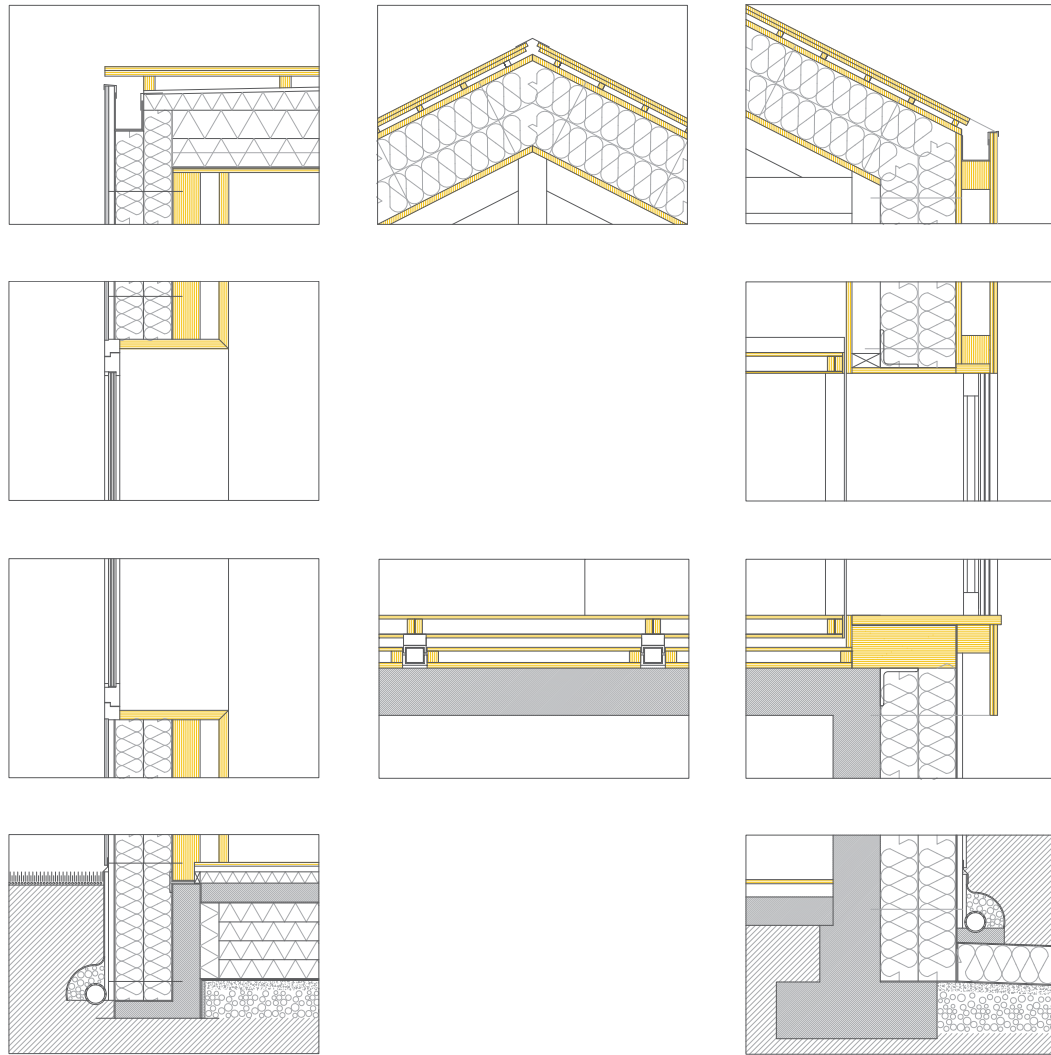
## INDOOR FLEXIBILITY

The central boxe, contening the office, is a soft transition between public and private area. this box is able to slide on rails according to seasons and uses, giving an indoor flexibility asset to the whole housse.



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#### wooden cave detail

roof construction:  
 wooden deck  
 deck structure  
 waterproof barrier  
 filtered insulation 3%  
 eps insulation 150+150mm  
 steel slab  
 vapour barrier  
 wooden ceiling

wall construction:  
 cement 20mm  
 higroscopical panel 30mm  
 windproof barrier  
 rockwool 300mm  
 vapour barrier  
 solid wood wall

floor construction:  
 wooden pavement 20mm  
 pavement structure 30mm  
 eps insulation  
 cement slab  
 waterproof barrier  
 eps insulation 4x100mm  
 filter mat  
 sand 100mm  
 gravel 150mm  
 compacted soil

#### passive house detail

roof construction:  
 wooden cladding  
 wooden joist  
 windproof barrier  
 rockwool insulation 20+20mm  
 vapour barrier  
 wooden structure  
 interior wooden cladding

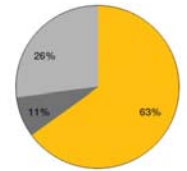
#### AIR TIGHT AND SUPER INSULATED ENVELOPE

The project focuses on materials rather than sophisticated high-tech systems. The thick high performance wall leads to a passive house as long as window U value stays under 0.6 W/(m<sup>2</sup>.K)

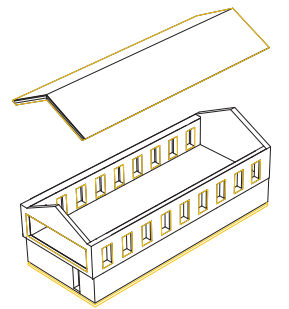
Super insulation and high level of detail are the way to reach energy issues.

fig.10  
 global U-value

■ walls+roof 0.08 W/(m<sup>2</sup>.K)  
 ■ window 0.6 W/(m<sup>2</sup>.K)  
 ■ floor 0.15 W/(m<sup>2</sup>.K)



window 0.6 W/(m<sup>2</sup>.K) > Global U value = 0.1554



#### MULTI-LAYER FAÇADE

A multi layer facade: window, shading system and opaque layer create a project matching with season and weather.

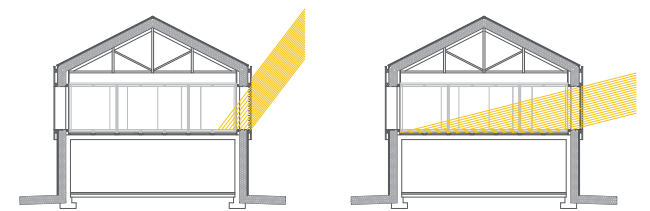


fig.11  
 summer and winter sun - shading system

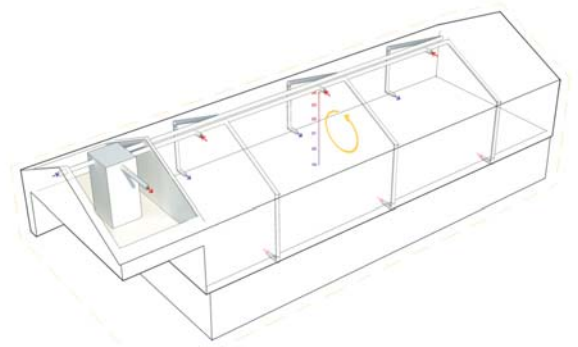


fig.12  
 ventilation system

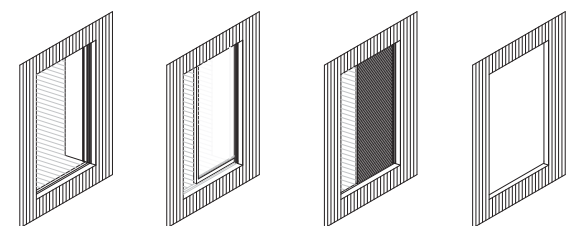


fig.13  
 totally opened, glass layer, shading layer, opaque layer

