

# Synopsis

Varis



## General project data

Name of building project: Varis

### Address data:

Name of developer: --  
 Street of project, house no.: --  
 ZIP or Post code, Town/City: --  
 Climatic region: LT-Vilnius  
 Planning phase: --  
 Planning serial number: --  
 Comment on planning: --

## Areas summary

	Comp. A	Comp. B	Comp. C	Total
<b>Treated floor area:</b>	117.92 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	117.92 m <sup>2</sup>
<b>Envelope areas:</b>				
Exterior walls:	136.92 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	136.92 m <sup>2</sup>
Exterior walls to ground:	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>
Roof area / top floor ceiling:	143.80 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	143.80 m <sup>2</sup>
Cellar ceiling / floor slab:	117.90 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	117.90 m <sup>2</sup>
<b>Window/doors:</b>				
Windows facing east:	3.61 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	11.06 m <sup>2</sup>
Windows facing south:	11.06 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	11.06 m <sup>2</sup>
Windows facing west:	2.41 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	2.41 m <sup>2</sup>
Windows facing north:	3.61 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	3.61 m <sup>2</sup>
Horizontal window area:	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>
Exterior door:	9.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	9.00 m <sup>2</sup>
<b>Total of all building envelope areas:</b>	<b>428.31 m<sup>2</sup></b>	<b>0.00 m<sup>2</sup></b>	<b>0.00 m<sup>2</sup></b>	<b>428.31 m<sup>2</sup></b>

## Summary of constructional U-values

	AF 1 (m <sup>2</sup> )	U-value 1 (W/m <sup>2</sup> K)	AF 2 (m <sup>2</sup> )	U-value 2 (W/m <sup>2</sup> K)	AF 3 (m <sup>2</sup> )	U-value 3 (W/m <sup>2</sup> K)	Mean U-value (W/m <sup>2</sup> K)
<b>EW - AA:</b>	136.92	0.10	0.00	0.00	0.00	0.00	<b>0.100</b>
<b>EW - G:</b>	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>
<b>RA / TFC:</b>	143.80	0.09	0.00	0.00	0.00	0.00	<b>0.090</b>
<b>CC / FF:</b>	123.10	0.10	0.00	0.00	0.00	0.00	<b>0.100</b>

## Summary of glazing U-values

U-value for easterly orientation:	0.49	W/m <sup>2</sup> K
U-value for southerly orientation:	0.49	W/m <sup>2</sup> K
U-value for westerly orientation:	0.49	W/m <sup>2</sup> K
U-value for northerly orientation:	0.49	W/m <sup>2</sup> K
Mean U-value:	0.49	W/m <sup>2</sup> K

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## Summary of window frame/exterior door U-values

U-value for easterly orientation:	0.65	W/m <sup>2</sup> K
U-value for southerly orientation:	0.65	W/m <sup>2</sup> K
U-value for westerly orientation:	0.65	W/m <sup>2</sup> K
U-value for nrtherly orientation:	0.65	W/m <sup>2</sup> K
Mean U-value:	0.65	W/m <sup>2</sup> K
U-value exterior door:	0.65	W/m <sup>2</sup> K

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## Thermal bridge-free:

Yes:

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## Airtightness:

Yes:

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## Ventilation system:

Effective Heat Recovery Efficiency: 20.00 Percent

## Calculations:

### Heat Losses:

1. Transmission Heat Losses per m <sup>2</sup> and year:	40.79 kWh/(m <sup>2</sup> a)
2. Ventilation Heat Losses per m <sup>2</sup> and year:	8.74 kWh/(m <sup>2</sup> a)
3. Total Heat Losses per m <sup>2</sup> and year:	49.53 kWh/(m <sup>2</sup> a)

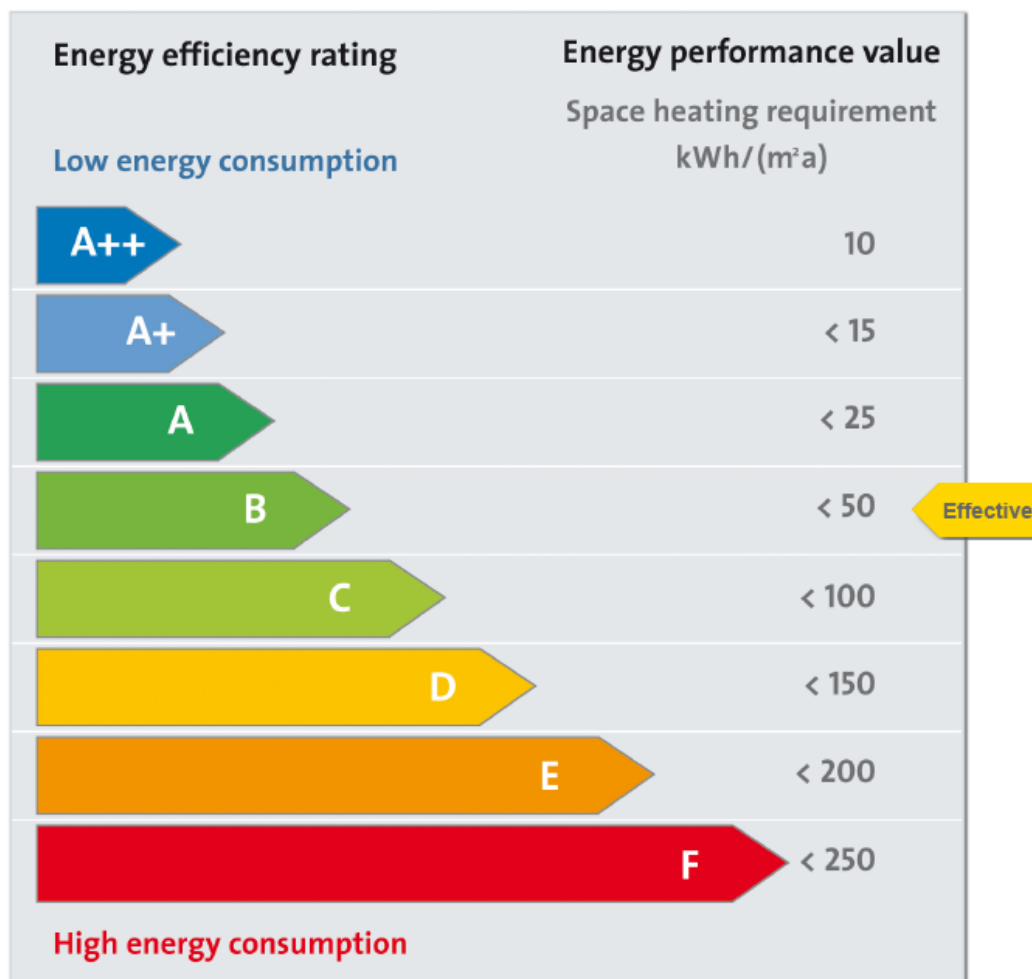
### Heat Gains:

4. Internal Heat Gains per m <sup>2</sup> and year:	11.34 kWh/(m <sup>2</sup> a)
5. Available Solar Heat Gains per m <sup>2</sup> and year:	11.41 kWh/(m <sup>2</sup> a)
6. Total Heat Gains (Free Heat) per m <sup>2</sup> and year:	22.50 kWh/(m <sup>2</sup> a)

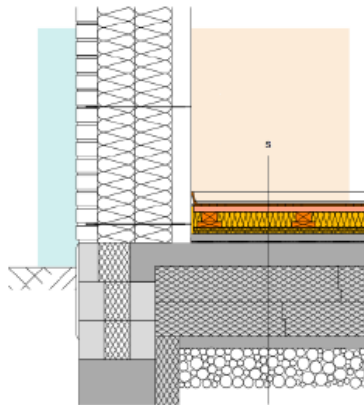
Annual Heat Demand (kWh/m<sup>2</sup>): 3188.40 kWh/m<sup>2</sup>

Specific Annual Heat Demand (kWh/m<sup>2</sup>): 27.04 kWh/(m<sup>2</sup>a)

Specific Annual Heat Demand < 15 kWh/(m<sup>2</sup>a) achieved: NO



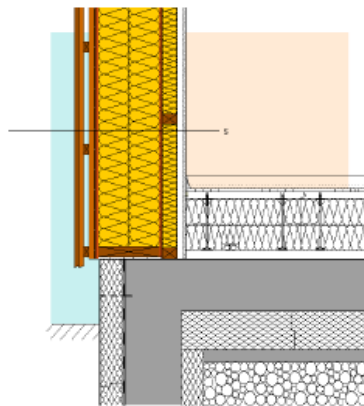
## Selected constructions



### Wood floor above ground

#### Composition S in cm

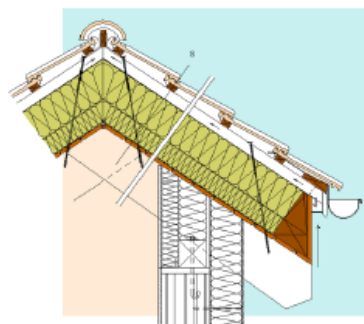
- 1,5 Parquet
- 2,5 Timber floor
- 0,02 Vapour barrier
- ▶ 5,0 ISOVER lightweight glass wool between wooden rafters 5/8 cm Floating layer
- ▶ 3,0 ISOVER impact sound insulation board 30
- 4,0 Protective concrete
- Seperating layer
- 0,05 Seperating layer (water barrier)
- 12,0 Sub-concrete
- Seperating layer
- ▶ 18,0 XPS-Extruded Polystyrene foam board
- ▶ 18,0 XPS-Extruded Polystyrene foam board Protective concrete
- Round gravel



### Holzriegelwand mit I-Holzwerkstoff-Träger

#### Aufbau S in cm

- 1,5 Rigips Feuerschutzplatte RF 15 (Gipsplatte DF 15)
- 3,0 Montigelattung 3/5
- 8,0 ISOVER Duo-Komfort DUO-KOM 035 8 zwischen Staffeln 5/8 ISOVER VARIO KM Duplex Systempaket
- 1,2 Holzspanplatte P5, 12 mm
- 16,0 ISOVER Uniroll-Komfort UNI-KOM 035 16 zwischen I-Trägern
- 16,0 ISOVER Uniroll-Komfort UNI-KOM 035 16 zwischen I-Trägern
- 1,6 Holzspanplatte P5, 16 mm
- Tyvek Soft, diffusionsoffenes Spinnvlies
- 3,0 Hinterlüftung
- 3,0 Unterkonstruktion
- 2,4 Sturzschalung
- 2,4 Sturzschalung



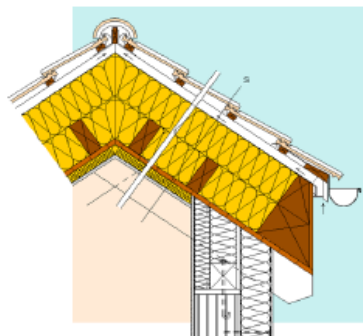
### Above rafter insulation

#### Composition S in cm

- 3,0 Roof covering
- 3,0 Roof lathing 3/5
- 5,0 Counter battens min. 5/8, screwed on rafters
- Layer of vapour diffusion-permeable spunbonded web
- ▶ 18,0 ISOVER stone wool with mechanical strenght
- ▶ 10,0 ISOVER stone wool with mechanical strenght
- Water vapour barrier - Climatic membrane, ISOVER VARIO KM Duplex
- 1,9 Wooden paneling (tongue and groove)

## Selected constructions - continuation

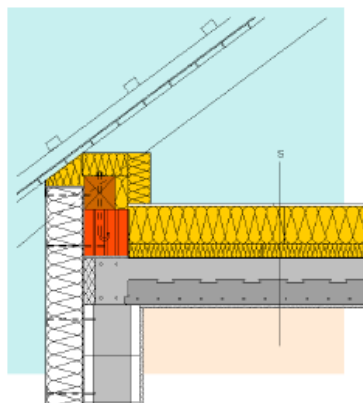
### Above rafter insulation - timber structure insulation between rafters





#### Composition S in cm

- 3,0 Roof covering
- 3,0 Roof lathing 3/5
- 5,0 Counter battens min. 5/5 - ventilation area  
Layer of vapour diffusion-permeable  
spunbonded web
- ▶ 20,0 ISOVER lightweight glass wool  
between battens
- ▶ 20,0 ISOVER lightweight glass wool  
between battens  
Water vapour barrier -  
Climatic membrane, ISOVER VARIO KM Duplex
- 2,4 Under roof - rough formwork
- ▶ 5,0 ISOVER lightweight glass wool  
between rafters
- 1,5 Plaster board -  
fire protection board

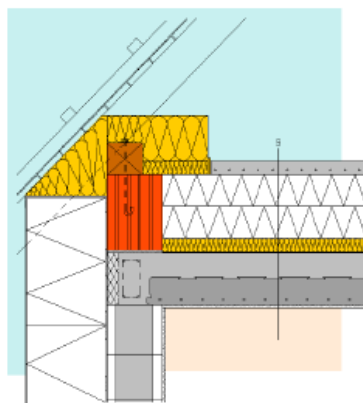
### Insulation on top roof ceiling, suitable for walking on






#### Composition S in cm

- 1,0 Fiber reinforced plaster board and  
 ISOVER rigid glass wool insulation panel as  
combi-product
-  ISOVER impact sound insulation board 60
- 0,02 Vapour barrier
- 20,0 Reinforced concrete prefab ceiling with concrete top  
course
- 1,5 Interior plaster

### Floating floor on top roof ceiling



#### Composition S in cm

- 6,0 Cement screed reinforced
- 0,02 Water separation layer
-  EPS-W 20 (expanded polystyrene)
-  EPS-W 20 (expanded polystyrene)
-  ISOVER impact sound insulation board 60
- 0,02 Vapour barrier
- 23,0 Concrete ceiling with concrete layer on top
- 1,5 Interior plaster