Arhitektuuribüroo

# Asustuse taastamine Kesse külas

X-GIS. Maa-amet. Kõik õigused kaitstud.

Thus coyneth and sypperseth the land called Curland, from the backhouens into Domesnest Where you are a leyne of
Domesnest
Der wonde
Backhouen
Domdangen
Domesnest
Blowes berch
THE:SEA
Coastes round
about the Ile called Osel
With a part of Curland be-
ginning from Daghercort into
the Wind cast as the Countre doth
shewe his situation
that Ways
CVR
LAND
Angere
Lepsewere
Dersweng
Dalen
Daghercort
Hamsfoore
Hamsfiord
Aberdorch
THE YLAND
OF
OESEL
Wyck
Osel
English leagues 20 in a degree
Spanish leagues 17½ in a degree
Dutch leagues 15 in a degree
Dr. Moon sands
Dwaal grondem
Dwaal grondem
The stragh of Ryghe
Ruinen
Pater noster
THE RYGSCHE SEA
THE RYGSCHE BOTTOM
East
South
West
North

Suursäär
Nuka säär
Abaja lauter
Kesse pank
Kesselaiu maastikukaitseala
Kesse
(Kesselaiu)
Kesselaid
(Kessulaid)
Rõuge lauter

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03-Jun-07 14:43

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# Ühistöö

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Standard
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VLB-434
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Makita
Architektenbüro

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Mitte ainult elekter

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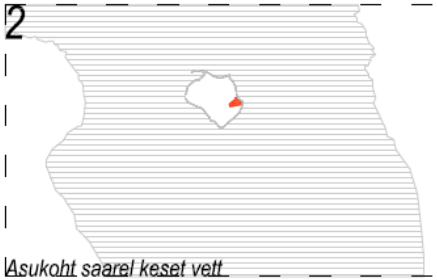
1

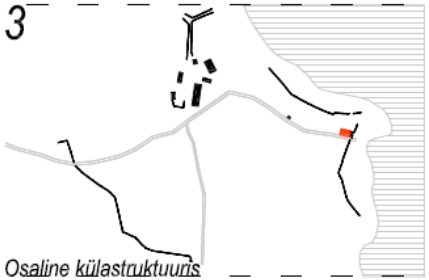
Saun - PH PROTOTÜÜP
Kesselaid

2



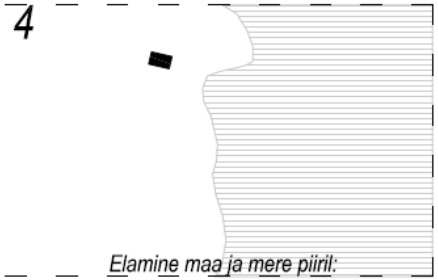
Asukoht saarel keset vett

3



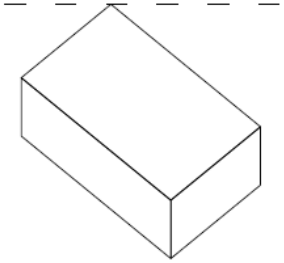
Osaline külastruktuuris

4



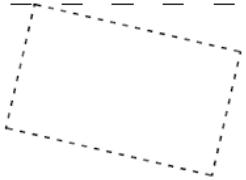
Elamine maa ja mere piiril:

5

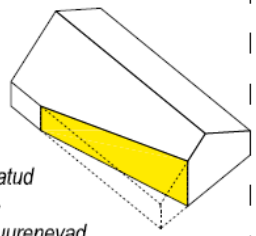


Sauna ase

5.1

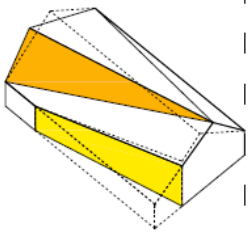


7



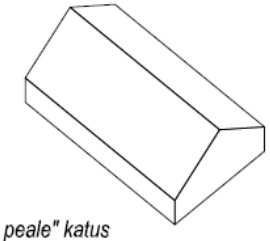
Lõunafassaad keeratud
lõunasuunaga ristisi -
pind ja kasutegur suurenevad

8



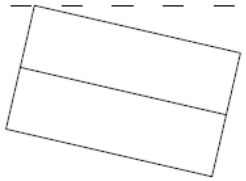
Katusepainutus

6

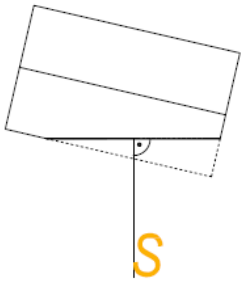


Arhetüüp / "kindla peale" katus

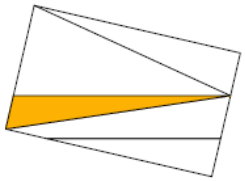
6.1



7.1

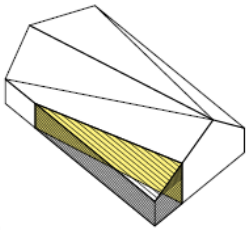



8.1



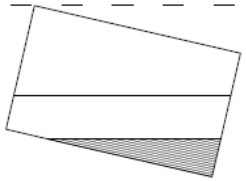
Osa katusest lõunasuunaga ristisi

9

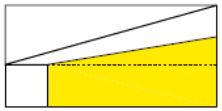


Äralõigatud nurk -
sisekliimareguleerija

9.2

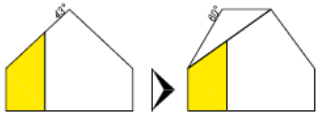


7.2



pinna kasv(normaal): 31,25m² >40,34 m² =+29%

8.2




Osa katusest 43° asemel 60°

Arhitektuuribüroo

VARJUALA 1
VARJUALA 2
VARJUALA 3
VARJUALA 4

AVATUD SULETUD AVATUD SULETUD AVATUD SULETUD

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111012_KESTE-INDREKU MAJA.xlsx - Excel (Product Activation Failed)

FILE | HOME | INSERT | PAGE LAYOUT | FORMULAS | DATA | REVIEW | VIEW | ADD-INS

Indrek Allmann

Z12

## Summary

| Group No. | Area Group | Temp Zone | Area | Unit | Comments | Building Element Overview | Average U-Value (W/(m²K)) |
|---|---|---|---|---|---|---|---|
| 1 | Treated Floor Area | | 127,10 | m² | Living area or useful area within the thermal envelope | | |
| 2 | North Windows | A | 6,21 | m² | Results are from the Windows worksheet | North Windows | 1,884 |
| 3 | East Windows | A | 21,60 | m² | | East Windows | 1,872 |
| 4 | South Windows | A | 11,60 | m² | | South Windows | 1,907 |
| 5 | West Windows | A | 10,40 | m² | | West Windows | 1,933 |
| 6 | Horizontal Windows | A | 0,00 | m² | | Horizontal Windows | |
| 7 | Exterior Door | A | 0,00 | m² | Please subtract area of door from respective building element | Exterior Door | |
| 8 | Exterior Wall - Ambient | A | 117,24 | m² | Window areas are subtracted from the individual areas specified in the "Windows" worksheet | Exterior Wall - Ambient | 0,195 |
| 9 | Exterior Wall - Ground | B | 0,00 | m² | Temperature Zone "A" is ambient air | Exterior Wall - Ground | |
| 10 | Roof/Ceiling - Ambient | A | 105,28 | m² | Temperature zone "B" is the ground | Roof/Ceiling - Ambient | 0,163 |
| 11 | Floor Slab | B | 88,88 | m² | | Floor Slab | 0,202 |
| 12 | | | 0,00 | m² | Temperature zones "A", "B", "P" and "X" may be used. NOT "I" | | |
| 13 | | | 0,00 | m² | Temperature zones "A", "B", "P" and "X" may be used. NOT "I" | Factor for X | |
| 14 | | X | 0,00 | m² | Temperature zone "X". Please provide user-defined reduction factor (0 < f < 1) | 1,04 | |
| | | | | | | Thermal Bridge Overview | W (W/(mK)) |
| 15 | Thermal Bridges Ambient | A | 126,00 | m | Units in m | Thermal Bridges Ambient | 0,025 |
| 16 | Perimeter Thermal Bridges | P | 100,94 | m | Units in m, temperature zone "P" is perimeter (see Ground worksheet) | Perimeter Thermal Bridges | 0,075 |
| 17 | Thermal Bridges Floor Slab | B | 0,00 | m | Units in m | Thermal Bridges Floor Slab | |
| 18 | Partition Wall to Neighbour | I | 0,00 | m² | Not heat loaded, only considered for the heat load calculation | Partition Wall to Neighbour | |
| Total Thermal Envelope | | | 374,56 | m² | | Average Therm. Envelope | 0,231 |

| U-Value (W/(m²K)) | Temperature Weighting Factor f | Weighted U-Value f * U * A (W/K) | Fraction of Transmission Heat Losses |
|---|---|---|---|
| 6,7 | 1,000 | 6,7 | 5% |
| 23,2 | 1,000 | 23,2 | 20% |
| 11,1 | 1,000 | 11,1 | 10% |
| 12,0 | 1,000 | 12,0 | 10% |
| 0,0 | 1,000 | 0,0 | |
| 0,0 | 1,000 | 0,0 | |
| 22,9 | 1,000 | 22,9 | 20% |
| 0,0 | 0,671 | 0,0 | |
| 16,7 | 1,000 | 16,7 | 17% |
| 18,0 | 0,671 | 12,1 | 10% |
| 0,0 | 1,000 | 0,0 | |
| 0,0 | 1,000 | 0,0 | |
| 0,0 | 0,750 | 0,0 | |
| W (W/K) | f | f*W (W/K) | Fraction |
| 3,4 | 1,000 | 3,4 | 3% |
| 7,6 | 0,671 | 5,1 | 4% |
| 0,0 | 0,671 | 0,0 | |
| 0,0 | | | |
| 116,7 | Envelope | 116,3 | 100% |

## Area Input

| Area No. | Building Element Description | Group No. | Assigned to Group | Quantity | a [m] | b [m] | User Defined [m²] | User Sub-Station [m²] | Subtraction Window Areas [m²] | Area [m²] | Selection of the Corresponding Building Element Assembly | No. | U-Value (W/(m²K)) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Treated Floor Area | 1 | Treated Floor Area | | | | | | | 0,0 | | | |
| | North Windows | 2 | North Windows | | | | | | | 6,2 | From Windows sheet | | 1,884 |
| | East Windows | 3 | East Windows | | | | | | | 21,6 | From Windows sheet | | 1,872 |
| | South Windows | 4 | South Windows | | | | | | | 11,1 | From Windows sheet | | 1,907 |
| | West Windows | 5 | West Windows | | | | | | | 10,4 | From Windows sheet | | 1,933 |
| | Horizontal Windows | 6 | Horizontal Windows | | | | | | | 0,0 | From Windows sheet | | 0,000 |
| | Exterior Door | 7 | Exterior Door | | | | | | | | U-Value Exterior Door | | |
| 1 | EXTW | 10 | Roof/Ceiling - Ambient | 2 | 1,00 | 42,64 | | | 1,1 | 123,9 | [illegible] | 1 | 0,163 |
| 2 | JONAEEW | 8 | Exterior Wall - Ambient | 1 | 1,00 | 42,38 | | | 11,1 | 31,3 | [illegible] | 1 | 0,195 |
| 3 | KOGAEEW | 8 | Exterior Wall - Ambient | 1 | 1,00 | 42,38 | | | 4,3 | 38,2 | [illegible] | 1 | 0,195 |
| 4 | LÕUEEW | 8 | Exterior Wall - Ambient | 1 | 1,00 | 18,37 | | | 7,8 | 10,5 | [illegible] | 1 | 0,195 |
| 5 | IDAEEW | 8 | Exterior Wall - Ambient | 1 | 1,00 | 18,37 | | | 10,1 | 18,2 | [illegible] | 1 | 0,195 |
| 6 | | | | | | | | | | | | | |
| 7 | PÕRAND | 11 | Floor Slab | 1 | 1,00 | 88,88 | | | | 88,1 | [illegible] | 1 | 0,202 |
| 8 | | | | | | | | | | | | | |
| 9 | THERM. ENVELOPE TFA | 1 | Treated Floor Area | 1 | 127,10 | 1,00 | | | | 127,1 | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |

Please complete in Windows worksheet only!

## Additional Inputs for Radiation Balance

| Exterior Absorptivity | Exterior Emissivity | Deviation from North | Angle of Inclination from the Horizontal | Reduction Factor Shading |
|---|---|---|---|---|
| These columns serve for considering the radiation balance of exterior, opaque surfaces. Inputs only for those surfaces which are adjacent to ambient air. For consideration of heating in Central European climates no input is required. | | | | |
| 0,80 | 0,90 | 180 | 90 | 0,70 |
| 0,80 | 0,90 | 135 | 90 | 0,70 |
| 0,80 | 0,90 | 180 | 90 | 0,70 |
| 0,80 | 0,90 | 225 | 90 | 0,70 |
| 0,80 | 0,90 | 135 | 90 | 0,70 |
| 0,80 | 0,90 | 11 | 90 | 0,70 |

| U-Value (W/(m²K)) | Temperature Weighting Factor f | Weighted U-Value f * U * A (W/K) | Fraction of Transmission Heat Losses |
|---|---|---|---|
| 6,7 | 1,000 | 6,741 | 5% |
| 23,2 | 1,000 | 23,250 | 20% |
| 11,1 | 1,000 | 11,120 | 10% |
| 12,0 | 1,000 | 11,888 | 10% |
| 0,0 | 1,000 | 0,000 | |
| 0,0 | 1,000 | 0,000 | |
| 16,7 | 1,000 | 16,707 | 17% |
| 6,1 | 1,000 | 6,118 | 5% |
| 7,1 | 1,000 | 7,063 | 6% |
| 6,8 | 1,000 | 6,858 | 5% |
| 3,6 | 1,000 | 3,724 | 3% |
| 0,0 | 1,000 | 0,000 | |
| 18,0 | 0,671 | 12,081 | 10% |
| 0,0 | 1,000 | 0,000 | |
| 0,0 | 1,000 | 0,000 | |
| 0,0 | 1,000 | 0,000 | |
| 0,0 | 1,000 | 0,000 | |
| 0,0 | 1,000 | 0,000 | |
| 0,0 | 1,000 | 0,000 | |
| 0,0 | 1,000 | 0,000 | |
| 0,0 | 1,000 | 0,000 | |
| 0,0 | 1,000 | 0,000 | |
| 0,0 | 1,000 | 0,000 | |

Brief instructions | Verification | Areas | U-List | U-Values | Ground | Windows | WinType | Shading | Ventilation | Annual Heat Demand | Monthly Method | Heating Load | Summer | Shading-S | SummVent | Co ...

READY

Arhitektuuribüroo

# 1

100113_KESSE
muudatuste mõju valitud algmudelile

| | A (100113) | 35 kWh/m2a | A>B | | B>C | |
|---|---|---|---|---|---|---|
| sisetemp. | +20 | | +25 | 59 kWh/m2a | | |
| | | | +15 | 16 kWh/m2a | | |
| | | | +10 | 4 kWh/m2a | | |
| | | | +7 | 1 kWh/m2a | | |
| | | | +4 | 0 kWh/m2a | | |
| õhupidavus | 0,6 | | 0,2 | 31 kWh/m2a | | |
| | | | 1,5 | 45 kWh/m2a | | |
| | | | 3 | 63 kWh/m2a | | |
| | | | 4,5 | 82 kWh/m2a | | |
| | | | 6 | 100 kWh/m2a | | |
| akende olemasolu | jah | | ei | 53 kWh/m2a | ei (temp +4) | 5 kWh/m2a |
| ulualuse vari | ei | | jah (dec 75%) | 45 kWh/m2a | | |
| | | | jah (jun 20%) | 70 kWh/m2a | | |
| soojustus | K=500, S=350, P=300<br>K=0,08 / S=0,12 / P=0,13 | | katus/sein +5cm<br>K=0,08 / S=0,1/ P=0,11 | 32 kWh/m2a | | |
| | | | katus/sein +10cm<br>K=0,07 / S=0,09/ P=0,1 | 30 kWh/m2a | | |
| | | | katus/sein +20cm<br>K=0,06 / S=0,08/ P=0,07 | 26 kWh/m2a | | |
| | | | katus/sein -5cm<br>K=0,09 / S=0,13/ P=0,16 | 39 kWh/m2a | | |
| | | | katus/sein -10cm<br>K=0,1 / S=0,16/ P=0,19 | 44 kWh/m2a | | |

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# 2

100113_KESSE
Kasutusolukorrad

MUUTUJAD

| | | |
|---|---|---|
| SISETEMPERATUUR | +20 | +4 |
| ELANIKE OLEMASOLU | JAH | EI |
| RIBISTIKU ASEND | AVATUD | SULETUD |

OLUKORRAD

| | | | |
|---|---|---|---|
| 1 | ELANIKUD | +20 | AVATUD |
| 2 | ELANIKUD | +20 | SULETUD |
| 3 | TÜHI | +20 | SULETUD |
| 4 | TÜHI | +4 | SULETUD |

# 3

100113_KESSE
Optimaalne kombinatsioon kuude lõikes

| | | VARJU % | 30% | 45% | 60% | 70% | 80% | 85% | 80% | 70% | 60% | 45% | 30% | 20% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ÕHUPIDAVUS | SISETEMPERATUUR | | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
| 0,6 1/h | +4°C | | 2 | 0,7 | 0,1 | | | | | | | | 0 | |
| 0,6 1/h | +20°C | | | | | 3,9 | | | | | | 3,5 | | |
| 1,5 1/h | +20°C | | | | | | 1,6 | | | | 1,3 | | | |
| 3 1/h | +20°C | | | | | | | 0,1 | 0,1 | 0,2 | | | | |

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| | | | | |
|---|---|---|---|---|
| | komp | 1 | 8 000 | 8 000 |
| ne | komp | 1 | 23 000 | 23 000 |
| | komp | 1 | 160 000 | 160 000 |
| | komp | 1 | 40 000 | 40 000 |
| nsport Virtsu | komp | 1 | 261 000 | 261 000 |
| | komp | 1 | 58 000 | 58 000 |
| | | | | |
| **Maksumus ilma km'ita** | | | | **3 715 993** |
| Käibemaks 20% | | | | 743 199 |
| **Maksumus KOKKU:** | | | | **4 459 191** |

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# Talude taastamine

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Architectenbureau

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# Passive House Verification

Photo or Drawing

| | |
|---|---|
| Building: | KESSE-INDREKU MAJA |
| Location and Climate: | Tartu |
| Street: | |
| Postcode/City: | |
| Country: | ESTONIA |
| Building Type: | |
| Home Owner(s) / Client(s): | |
| Street: | |

No Standard Climate

| | | | | |
|---|---|---|---|---|
| Year of Construction: | 2011 | | | |
| Number of Dwelling Units: | | Interior Temperature: | 20,0 | °C |
| Enclosed Volume $V_e$: | 433,0 | $m^3$ | Internal Heat Gains: | 2,1 | $W/m^2$ |
| Number of Occupants: | 5,0 | | | |

Utilisation Pattern:

Type of Values Used:

Planned Number of: 5

Specific Demands with Reference to the Treated Floor Area

Treated Floor Area: 127,1 $m^2$

| | Applied: | Annual Method | PH Certificate: | Fulfilled? | Verification: |
|---|---|---|---|---|---|
| Specific Space Heat Demand: | 86 | kWh/($m^2$a) | 15 kWh/($m^2$a) | No | 85,7 |
| Pressurization Test Result: | 0,6 | $h^{-1}$ | 0,6 $h^{-1}$ | Yes | 89,1 |
| Specific Primary Energy Demand (DHW, Heating, Cooling, Auxiliary and Household Electricity) | 292 | kWh/($m^2$a) | 120 kWh/($m^2$a) | No | |
| Specific Primary Energy Demand (DHW, Heating and Auxiliary Electricity) | 245 | kWh/($m^2$a) | | | |

Brief Instructions | Verification | Areas | U-List | U-Values | Ground | Windows | WinType | Shading | Ventilation | Annual Heat Demand | Monthly Method | Heating Load | Summer | Shading-S | SummVent | Co ...

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DAEWOO
Arhitektuuribüroo

Arhitektuuriburoo

LAARMANN KRAANAD
540
JCB
Arhitektuuribüroo

JCB
Arhitektuuribüroo

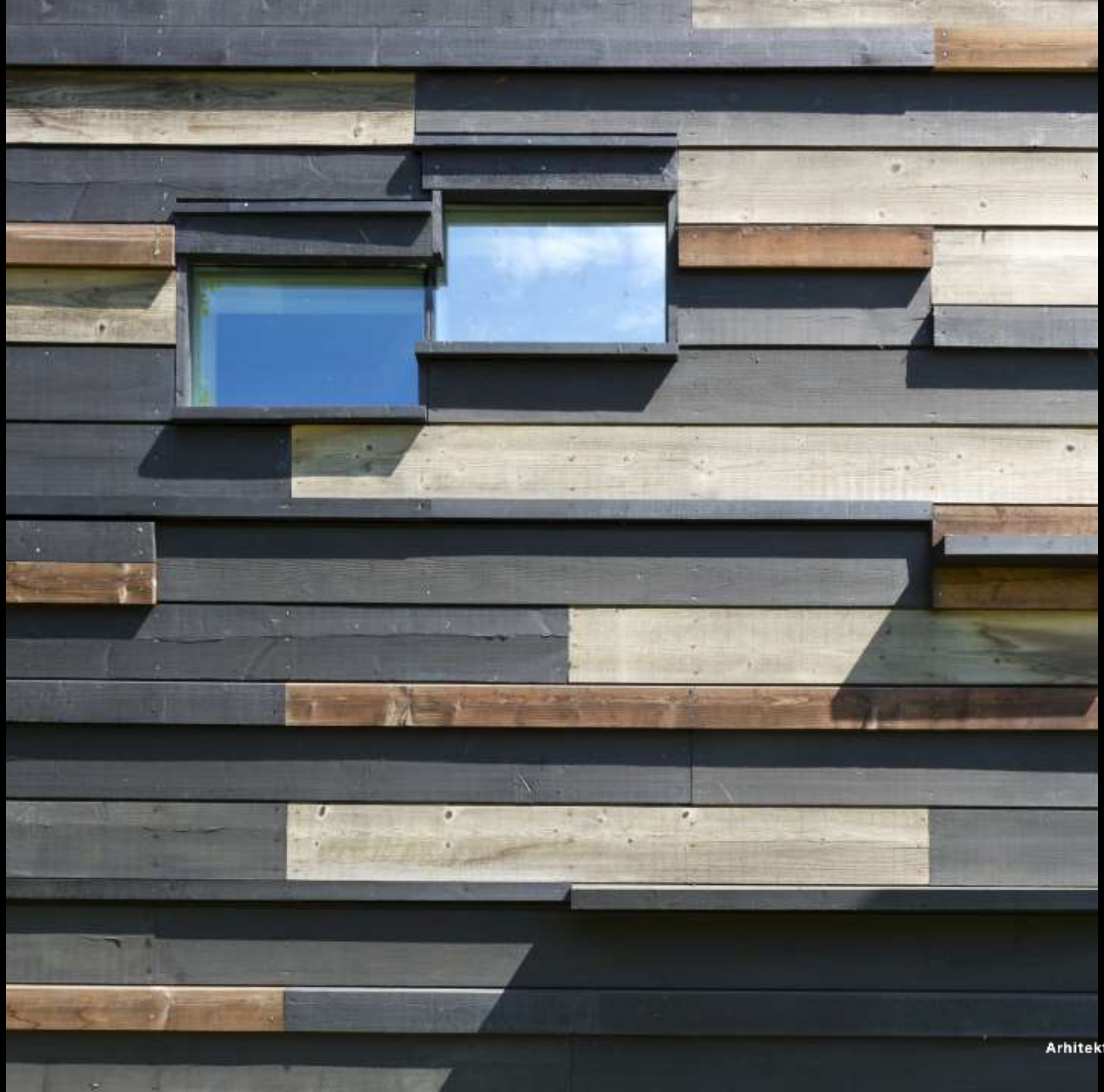
Arhitektuuribüroo

Architektur InFocus

Arhitektuuribüroo

Arhitektuuriburoo

Arhitektuuribüroo



Arhitektuuribüroo

Arhitektuuribüroo

# Lokaalvõrgu individuaalne laiendamine

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TUUMA SAAM
Arhitektuuribüroo

Arhitektuuribüroo

TOSHIBA
DAISEIKAI
SCHÜCO

iPad 18:49 96%

217.71.39.176

BMW ConnectedDrive | Carsharing von BMWi, MINI u... | BMW i3 | European Parliament | Sunny WebBox

# SunnyWebBox

Logout

## Plant / Devices

Home | WebBox | Plant

Devices | Detection | Settings

- WebBox
  - SENS0802:35232
  - SI4248_h:1256002231
  - SI5048EH:1260023643
  - WRTL1ECD:2100607859
  - WRTM0U88:2130216804

Refresh

Overview | Spot Values | Parameters

| SI4248_h: | | |
|---|---|---|
| Battery voltage | 49.7 | Vdc |
| Power | 47 | W |

**Security advice:** Password not secure

K1 - 150127963 | 1.53

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Refresh

Overview | Spot Values | Parameters

| SI5048EH:1260023643 | |
|---|---|
| Battery charge level | 93.1 % |
| Battery voltage | 54.5 V |
| Battery charge mode | Float |
| Power | -100 W |

**Security advice:** Password not secure | K1 - 150127963 | 1.53

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Refresh

Overview | Spot Values | Parameters

| WRTL1ECD:2100607859 | | |
|---|---|---|
| Power | 0 | W |
| Energy today | 6.834 | kWh |
| Energy total | 3177.415 | kWh |
| Operating mode | Warten | |

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Refresh

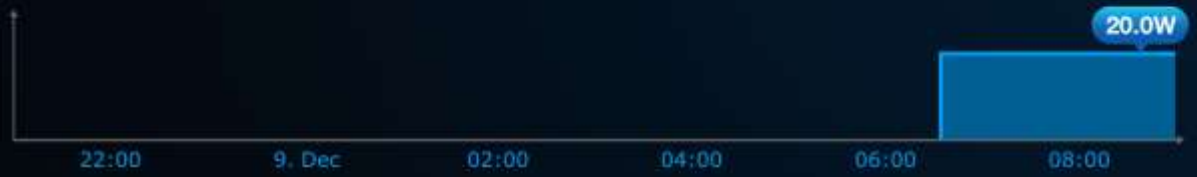
Overview | Spot Values | Parameters

| WRTM0U88:2130216804 | | |
|---|---|---|
| Power | 258 | W |
| Energy today | 6.853 | kWh |
| Energy total | 429.827 | kWh |
| Operating mode | Mpp | |

**Security advice:** Password not secure | K1 - 150127963 | 1.53

9:18
100%
0
16.62°C
1
Home
0
Arm
Monday
09.12.2013
21°C
Humidity: 49%
Wind Speed: 19km/h
09 18
20.0W
DEVICE
ventilaator
terrass
SP lüliti köök
HOME
16.62°C
Temperature
Ventilation
Humidity
OFF

| Devices | 0/6 | Sensors | 1/1 |
|---|---|---|---|
| Lights | 0/4 | Motion | - - |
| Switches | 0/2 | Doors | 1/1 |
| Roller blinds | 0/0 | Windows | -/- |
| Heating | -/- | Garage door | -/- |
| Ventilation | -/- | Main entrance | -/- |
| Armed zones | -/- | Users in the house | -/- |




| | |
|---|---|
| Last hour | 0.01 EUR |
| Last day | 0.05 EUR |
| Last week | 0.05 EUR |
| Last month | 63.72 EUR |

õue kaamera1

õue kaamera2

köögi kaamera

08:21:25 elutuba
elutoa temp. - 16°C

06:53:12 terrass
terrassi valgus - ON

06:45:37 elutuba
elutoa temp. - 17°C

05:07:10 elutuba
elutoa temp. - 17°C

03:44:05 elutuba
elutoa temp. - 18°C

9:19
100%
0
16.62°C
1
köök
0
Arm
SP lülti kook
soojuspump
Staatus
Väljas: 0W
Moodul:
Sisse
Välja
J18
20
22
23
30
Fan tava reziim
Staatus
Väljas: 0W

| Devices | 3/7 | Sensors | 1/1 |
|---|---|---|---|
| Lights | 1/4 | Motion | - - |
| Switches | 2/3 | Doors | 1/1 |
| Roller blinds | 0/0 | Windows | -/- |
| Heating | -/- | Garage door | -/- |
| Ventilation | -/- | Main entrance | -/- |
| Armed zones | -/- | Users in the house | -/- |

| | |
|---|---|
| Last hour | 0.04 EUR |
| Last day | 0.67 EUR |
| Last week | 8.91 EUR |
| Last month | 16.67 EUR |

õue kaamera1

õue kaamera2

köögi kaamera

22:58:21 elutuba
elutoa temp. - 22°C

22:18:02 köök
Boileri küttetenn -...

21:43:22 elutuba
elutoa temp. - 23°C

21:22:07 elutuba
elutoa temp. - 23°C

17:55:49 elutuba
elutoa temp. - 23°C

Ja mitte ainult…

Tänan!