

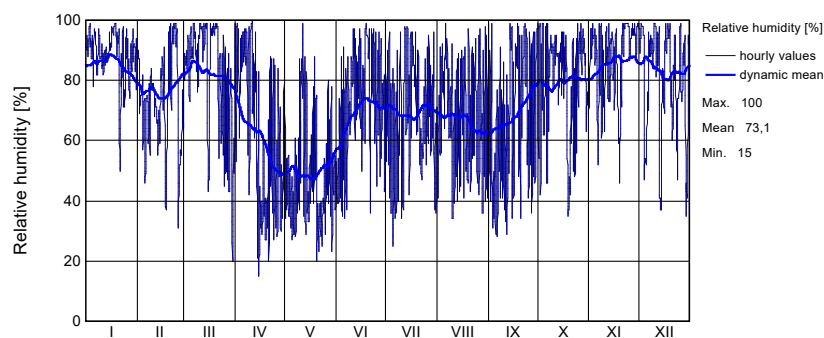
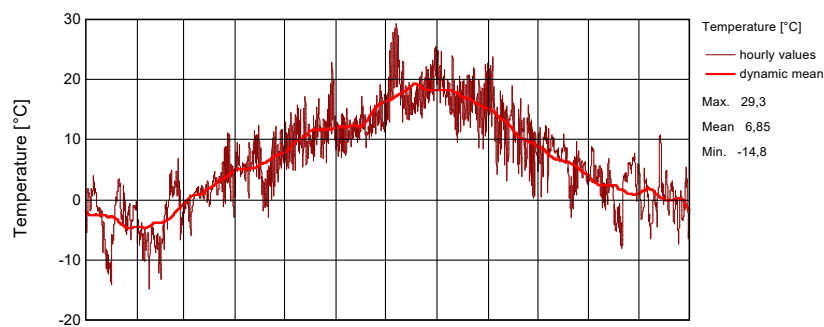
Project data

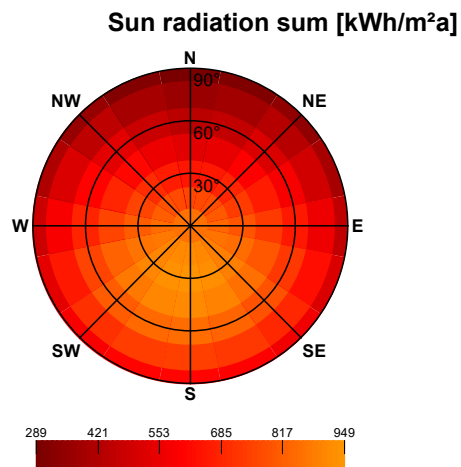
Client	
Surname & Name	
Locality	
Postal code	
Street	
Tel.	
e-mail	
Building	
Name/Type	
Locality	
Postal code	
Street	
Country	
Owner	
Surname & Name	
Locality	
Postal code	
Street	
Responsible	
Surname & Name	
Locality	
Postal code	
Street	
Tel.	
e-mail	
Date	21.5.2019

Climate

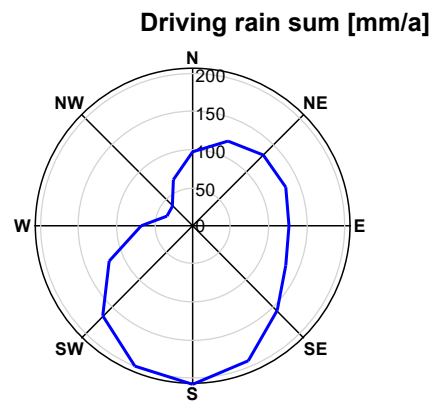
Case 1: Main climate

Oslo (NBI / NTNU)	
Latitude [°]	59,9
Longitude [°]	10,7
Height NN [m]	94
Time zone [Hours from UTC]	1
Additional data	
Albedo	User defined
Ground reflectance short	0,2
Ground reflectance long	0,1
Ground emission	0,9
Cloud index (only WET-file)	0,7
CO2-concentration [mg/m³]	350





Counterradiation sum [kWh/m²a]: 2641,4
Mean cloud index [-]: 0,67



Normal rain sum [mm/a]: 604,7
Mean wind speed [m/s]: 2,71

Conditioned zones

Case 1/Zone 1: General data

Name	Soverom Sør
Geometry	
Gross volume (User defined) [m³]	
Net volume (User defined) [m³]	19,53
Floor area (From visualized geometry) [m²]	7,268
Other parameters	
Initial temperature [°C]	20
Initial rel. humidity [%]	55
Initial CO2-concentration [ppmv]	400
Distribution of solar gains on interior surfaces	Proportional to area
Solar radiation direct to interior air [-]	0,1

Case 1/Zone 1: Design conditions

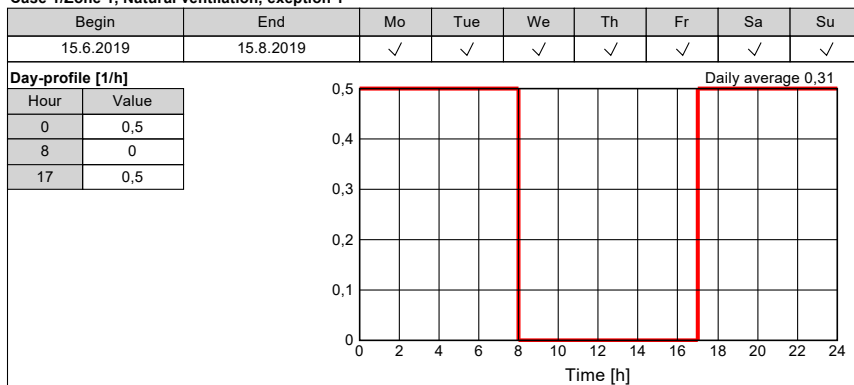
Max. temperature (cooling) [°C]	26
Min. relative humidity (humidification) [%]	20
Max. relative humidity (dehumidification) [%]	50
Max. CO2-concentration [ppmv]	900
Natural ventilation [1/h]	0
Mechanical ventilation [m³/h]	38
Infiltration ACH [1/h]	0.03

Case 1/Zone 1, Minimal temperature

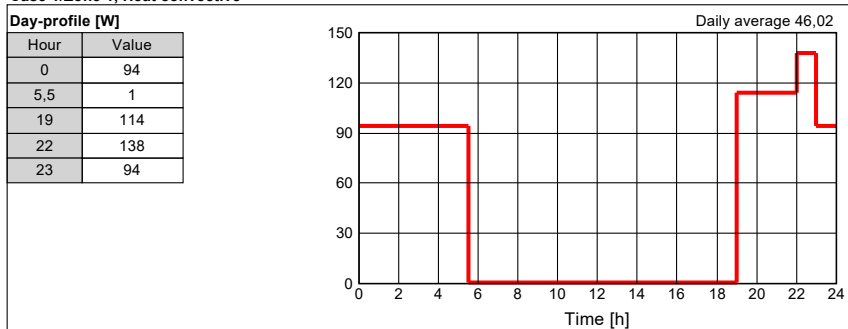
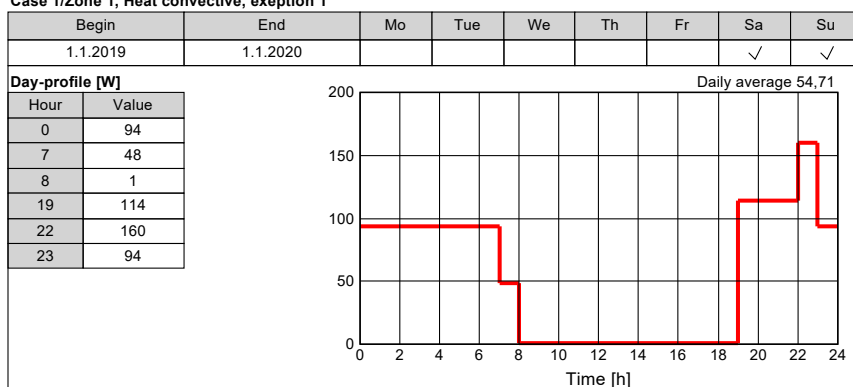
Day-profile [°C]

Hour	Value
0	19
8	21
23	19



Case 1/Zone 1, Natural ventilation, exeption 1

Case 1/Zone 1: Loads/Occupancy

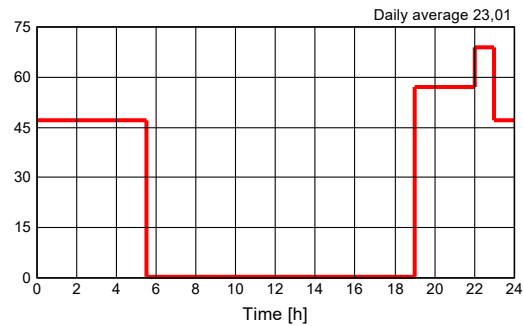
Clothing [clo]	0,7
Air velocity [m/s]	0,1

Case 1/Zone 1, Heat convective

Case 1/Zone 1, Heat convective, exeption 1


Case 1/Zone 1, Heat radiant

Day-profile [W]

Hour	Value
0	47
5,5	0,5
19	57
22	69
23	47

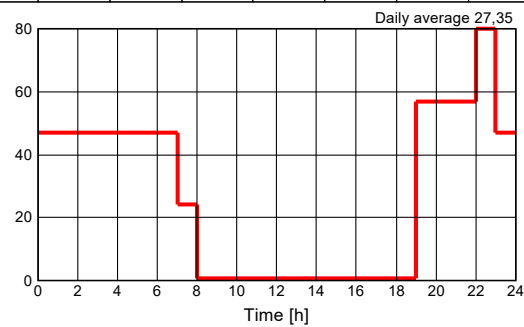


Case 1/Zone 1, Heat radiant, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

Day-profile [W]

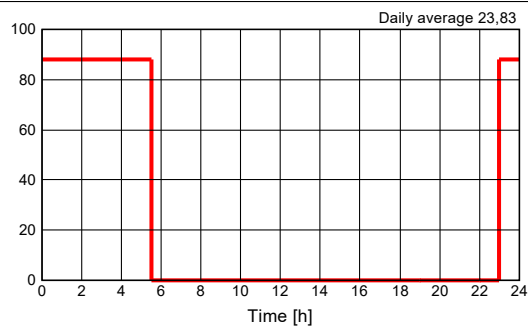
Hour	Value
0	47
7	24
8	0,5
19	57
22	80
23	47



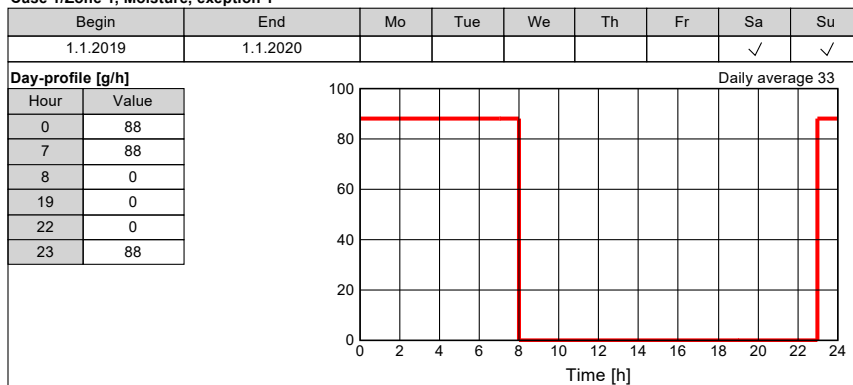
Case 1/Zone 1, Moisture

Day-profile [g/h]

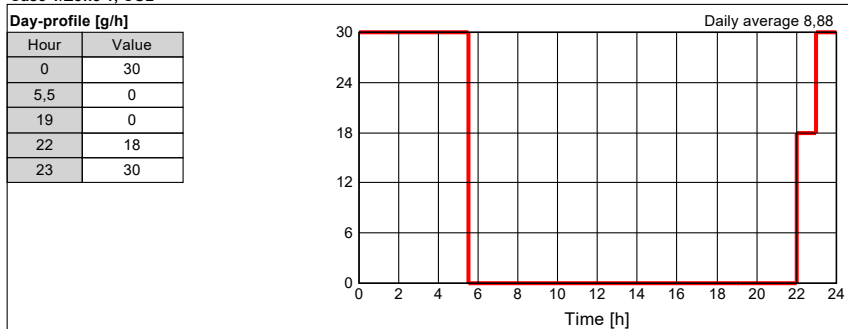
Hour	Value
0	88
5,5	0
19	0
22	0
23	88



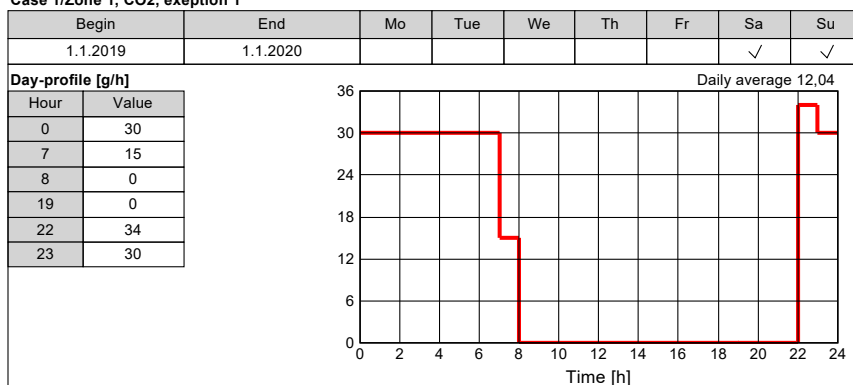
Case 1/Zone 1, Moisture, exeption 1



Case 1/Zone 1, CO2



Case 1/Zone 1, CO2, exeption 1



Case 1/Zone 1, Human activity

Day-profile [met]

Hour	Value
0	0,8
5,5	0
19	0
22	1
23	0,8



Case 1/Zone 1, Human activity, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

Day-profile [met]

Hour	Value
0	0,8
7	0,8
8	0
19	1
22	1
23	0,8



Case 1/Zone 1, Clothing, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

0,7 clo

Case 1/Zone 1, Air velocity, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

0,1 m/s

Case 1/Zone 1: Visualized components

Case 1/Zone 1/Component 1: General data

Name	Yttervegg soverom sør
Type	Opaque
Interior side	Zone 1: Soverom Sør
Outer side	Outer air
Assembly	Assembly (Id.1): Lightweight timber framed wall
U [W/m²K]	0,186
Geometry	
Area [m²]	4,3
Inclination [°]	90
Orientation	South-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,094
Height above ground (User defined) [m]	

Case 1/Zone 1/Component 2: General data

Name	Vindu Sov Sør
Type	Transparent
Interior side	Zone 1: Soverom Sør
Outer side	Outer air
Window type	Window type (Id 1): Example 1
Solar protection	Solar protection (Id 1): New
Uw - installed [W/m²K]	0,79
Geometry	
Area [m²]	0,7
Inclination [°]	90
Orientation	South-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,016
Height above ground (User defined) [m]	

Case 1/Zone 1/Component 3: General data

Name	Vegg mellom leilighet
Type	Opaque
Interior side	Zone 1: Soverom Sør
Outer side	Space with the same interior conditions
Assembly	Assembly (Id.2): Vegg mellom leilighet
U [W/m²K]	0,2123
Geometry	
Area [m²]	11,3
Inclination [°]	90
Orientation	North-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,249
Height above ground (User defined) [m]	

Case 1/Zone 1/Component 4: General data

Name	Himling
Type	Opaque
Interior side	Zone 1: Soverom Sør
Outer side	Space with the same interior conditions
Assembly	Assembly (Id.7): Himling
U [W/m²K]	0,53
Geometry	
Area [m²]	7,3
Inclination [°]	0
Orientation	Horizontal (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	5,5
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,1
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,161
Height above ground (User defined) [m]	

Case 1/Zone 1/Component 5: General data

Name	Gulv
Type	Opaque
Interior side	Zone 1: Soverom Sør
Outer side	Ground
Assembly	Assembly (Id.5): Gulv
U [W/m²K]	0,0714
Geometry	
Area [m²]	7,3
Inclination [°]	180
Orientation	Horizontal (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	99999
Heat transfer coefficient radiant, extern [W/m²K]	0
Heat transfer coefficient convective, intern [W/m²K]	2,5
Heat transfer coefficient radiant, intern [W/m²K]	3,38235
Rse / Rsi (According to component type) [-]	0 / 0,17
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,161
Height above ground (User defined) [m]	

Case 1/Zone 1/Component 6: General data

Name	Dør mellom sov sør og stue
Type	Opening
Interior side	Zone 1: Soverom Sør
Outer side	Zone 4: Stue/ Kjøkken
Geometry	
Area [m²]	1,9
Inclination [°]	90
Orientation	South-West (100 %)

Case 1/Zone 1/Component 7: General data

Name	Vegg mellom sov sør og stue
Type	Opaque
Interior side	Zone 1: Soverom Sør
Outer side	Zone 4: Stue/ Kjøkken
Assembly	Assembly (Id.3): Vegg mellom sov sør og stue
U [W/m²K]	0,4515
Geometry	
Area [m²]	7,6
Inclination [°]	90
Orientation	South-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,169
Solar radiation on second interior surface [-]	0,05
Height above ground (User defined) [m]	

Case 1/Zone 1/Component 8: General data

Name	Vegg mellom sov sør og bad
Type	Opaque
Interior side	Zone 1: Soverom Sør
Outer side	Zone 2: Bad
Assembly	Assembly (Id.4): Lightweight timber framed wall
U [W/m²K]	0,2257
Geometry	
Area [m²]	2,2
Inclination [°]	90
Orientation	North-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,049
Solar radiation on second interior surface [-]	0,057
Height above ground (User defined) [m]	

Case 1/Zone 1/Component 9: General data

Name	Vegg mellom sov sør og bad
Type	Opaque
Interior side	Zone 1: Soverom Sør
Outer side	Zone 2: Bad
Assembly	Assembly (Id.4): Lightweight timber framed wall
U [W/m²K]	0,2257
Geometry	
Area [m²]	2,8
Inclination [°]	90
Orientation	North-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,062
Solar radiation on second interior surface [-]	0,072
Height above ground (User defined) [m]	

Case 1/Zone 1/Component 10: General data

Name	Vegg massivtre mellom sov sør og bad
Type	Opaque
Interior side	Zone 1: Soverom Sør
Outer side	Zone 2: Bad
Assembly	Assembly (Id.10): Vegg massivtre mellom sov sør og bad
U [W/m²K]	0,781
Geometry	
Area [m²]	1,8
Inclination [°]	90
Orientation	South-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,04
Solar radiation on second interior surface [-]	0,046
Height above ground (User defined) [m]	

Case 1/Zone 2: General data

Name	Bad
Geometry	
Gross volume (User defined) [m³]	
Net volume (User defined) [m³]	13,66
Floor area (From visualized geometry) [m²]	5,479
Other parameters	
Initial temperature [°C]	20
Initial rel. humidity [%]	55
Initial CO2-concentration [ppmv]	400
Distribution of solar gains on interior surfaces	Proportional to area
Solar radiation direct to interior air [-]	0,1

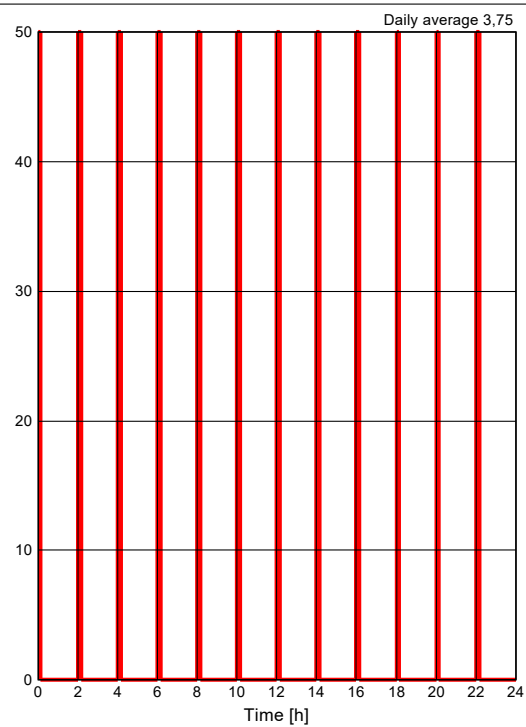
Case 1/Zone 2: Design conditions

Min. temperature (heating) [°C]	20
Max. temperature (cooling) [°C]	27
Min. relative humidity (humidification) [%]	20
Max. relative humidity (dehumidification) [%]	50
Max. CO2-concentration [ppmv]	3000
Natural ventilation [1/h]	0
Infiltration ACH [1/h]	0,00

Case 1/Zone 2, Mechanical ventilation

Day-profile [m³/h]

Hour	Value
0	50
00.15	0
02	50
02.15	0
04.00	50
04.15	0
06.00	50
06.15	0
08.00	50
08.15	0
10.00	50
10.15	0
12	50
12.15	0
14	50
14.15	0
16	50
16.15	0
18	50
18.15	0
20	50
20.15	0
22	50
22.15	0



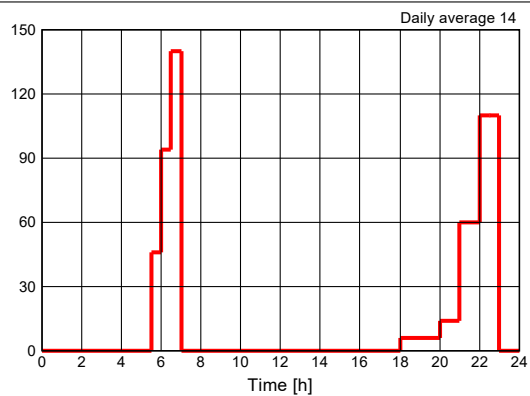
Case 1/Zone 2: Loads/Occupancy

Clothing [clo]	0,7
Air velocity [m/s]	0,1

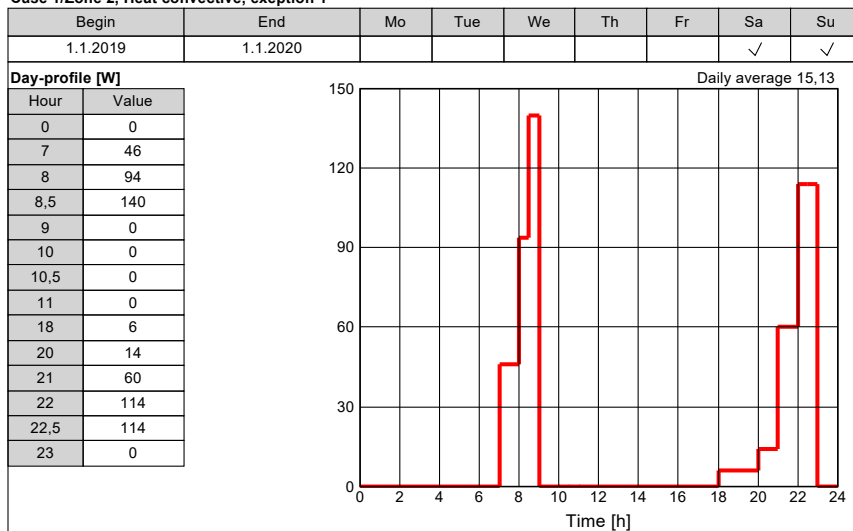
Case 1/Zone 2, Heat convective

Day-profile [W]

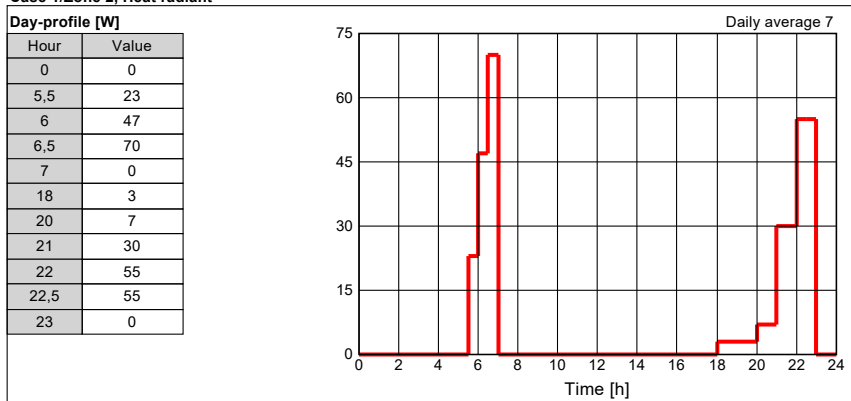
Hour	Value
0	0
5,5	46
6	94
6,5	140
7	0
18	6
20	14
21	60
22	110
22,5	110
23	0



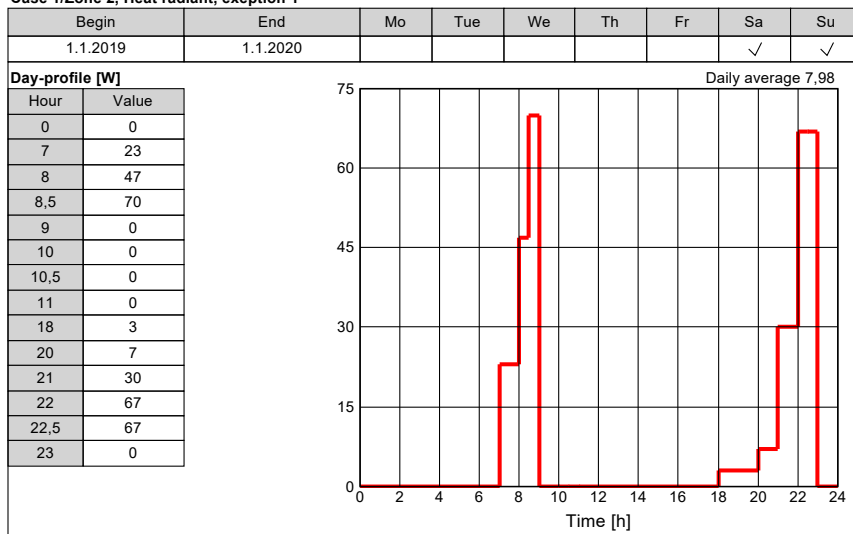
Case 1/Zone 2, Heat convective, exeption 1



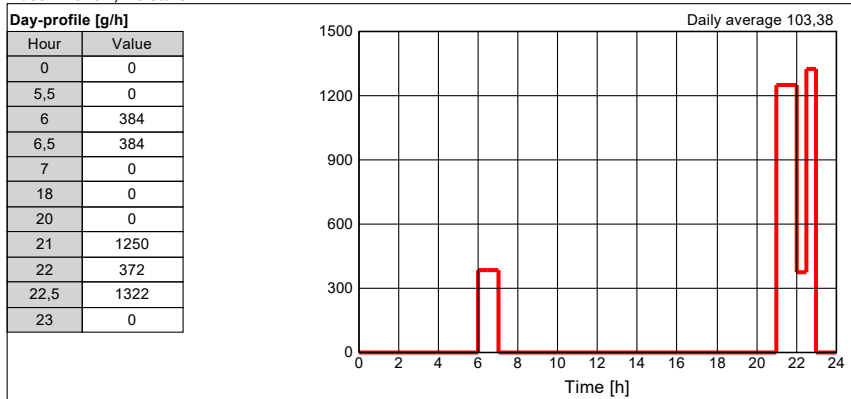
Case 1/Zone 2, Heat radiant



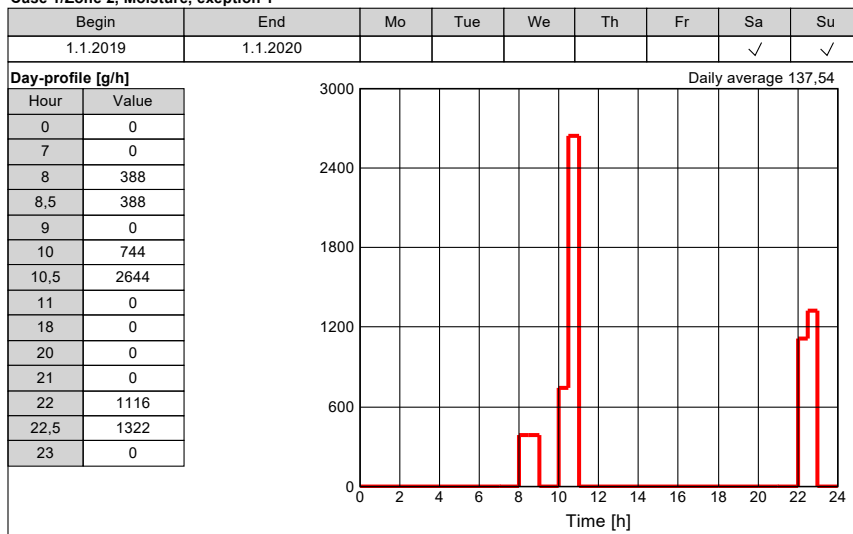
Case 1/Zone 2, Heat radiant, exeption 1



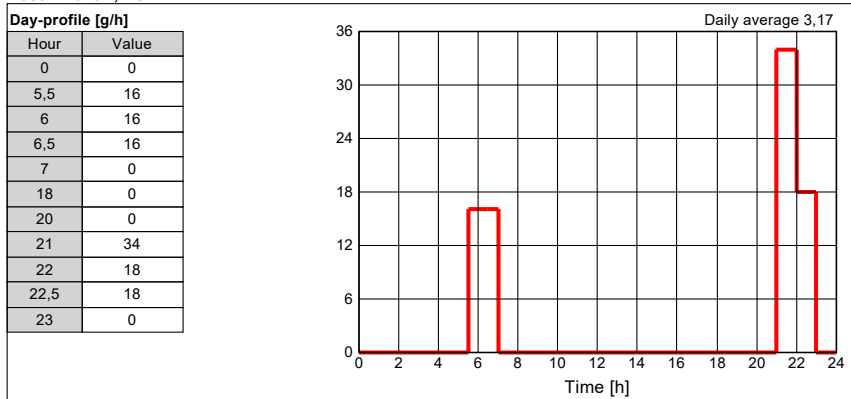
Case 1/Zone 2, Moisture



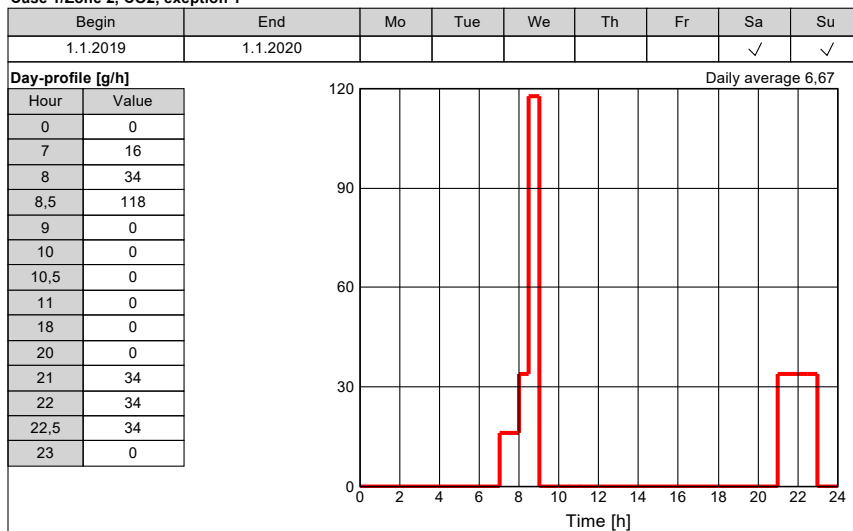
Case 1/Zone 2, Moisture, exeption 1



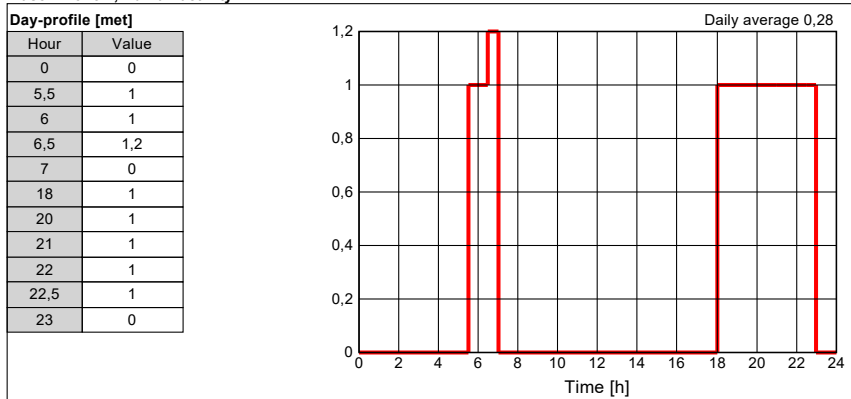
Case 1/Zone 2, CO2

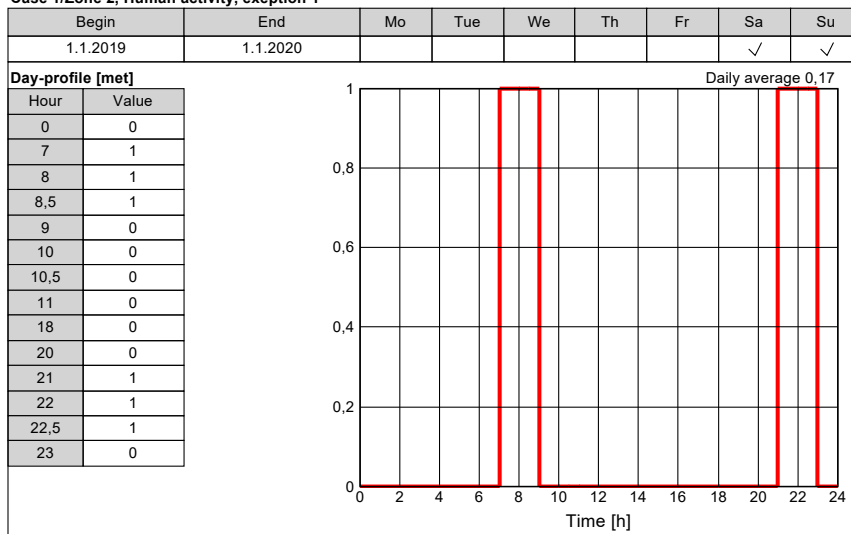


Case 1/Zone 2, CO2, exeption 1



Case 1/Zone 2, Human activity



Case 1/Zone 2, Human activity, exeption 1

Case 1/Zone 2, Clothing, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

0,7 clo

Case 1/Zone 2, Air velocity, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

0,1 m/s

Case 1/Zone 2: Visualized components

Case 1/Zone 2/Component 1: General data

Name	Vegg bad mot sov nord
Type	Opaque
Interior side	Zone 2: Bad
Outer side	Zone 3: Soverom nord
Assembly	Assembly (Id.4): Lightweight timber framed wall
U [W/m²K]	0,2257
Geometry	
Area [m²]	5,5
Inclination [°]	90
Orientation	South-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,141
Solar radiation on second interior surface [-]	0,1
Height above ground (User defined) [m]	

Case 1/Zone 2/Component 2: General data

Name	Vegg mellom leilighet
Type	Opaque
Interior side	Zone 2: Bad
Outer side	Space with the same interior conditions
Assembly	Assembly (Id.8): Vegg mellom leilighet
U [W/m²K]	0,2123
Geometry	
Area [m²]	6,7
Inclination [°]	90
Orientation	North-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,172
Height above ground (User defined) [m]	

Case 1/Zone 2/Component 3: General data

Name	Himling
Type	Opaque
Interior side	Zone 2: Bad
Outer side	Space with the same interior conditions
Assembly	Assembly (Id.7): Himling
U [W/m²K]	0,53
Geometry	
Area [m²]	5,5
Inclination [°]	0
Orientation	Horizontal (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	5,5
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,1
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,141
Height above ground (User defined) [m]	

Case 1/Zone 2/Component 4: General data

Name	Gulv
Type	Opaque
Interior side	Zone 2: Bad
Outer side	Ground
Assembly	Assembly (Id.5): Gulv
U [W/m²K]	0,0714
Geometry	
Area [m²]	5,5
Inclination [°]	180
Orientation	Horizontal (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	99999
Heat transfer coefficient radiant, extern [W/m²K]	0
Heat transfer coefficient convective, intern [W/m²K]	2,5
Heat transfer coefficient radiant, intern [W/m²K]	3,38235
Rse / Rsi (According to component type) [-]	0 / 0,17
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,141
Height above ground (User defined) [m]	

Case 1/Zone 2/Component 5: General data

Name	Dør bad mot stue
Type	Opaque
Interior side	Zone 2: Bad
Outer side	Zone 4: Stue/ Kjøkken
Assembly	Assembly (Id.9): Dører
U [W/m²K]	1,2262
Geometry	
Area [m²]	1,9
Inclination [°]	90
Orientation	North-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,048
Solar radiation on second interior surface [-]	0,012
Height above ground (User defined) [m]	

Case 1/Zone 2/Component 6: General data

Name	vegg bad mot stue
Type	Opaque
Interior side	Zone 2: Bad
Outer side	Zone 4: Stue/ Kjøkken
Assembly	Assembly (Id.10): Vegg massivtre mellom sov sør og bad
U [W/m²K]	0,781
Geometry	
Area [m²]	2,6
Inclination [°]	90
Orientation	South-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,067
Solar radiation on second interior surface [-]	0,017
Height above ground (User defined) [m]	

Case 1/Zone 2/Component 7: General data

Name	vegg bad mot stue
Type	Opaque
Interior side	Zone 2: Bad
Outer side	Zone 4: Stue/ Kjøkken
Assembly	Assembly (Id.10): Vegg massivtre mellom sov sør og bad
U [W/m²K]	0,781
Geometry	
Area [m²]	0,5
Inclination [°]	90
Orientation	North-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,013
Solar radiation on second interior surface [-]	0,003
Height above ground (User defined) [m]	

Case 1/Zone 2/Component 8: General data

Name	vegg bad mot stue
Type	Opaque
Interior side	Zone 2: Bad
Outer side	Zone 4: Stue/ Kjøkken
Assembly	Assembly (Id.10): Vegg massivtre mellom sov sør og bad
U [W/m²K]	0,781
Geometry	
Area [m²]	4
Inclination [°]	90
Orientation	North-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,104
Solar radiation on second interior surface [-]	0,027
Height above ground (User defined) [m]	

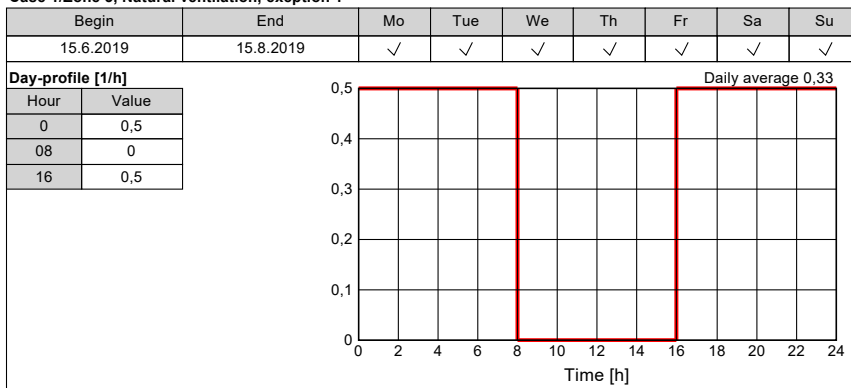
Case 1/Zone 3: General data

Name	Soverom nord
Geometry	
Gross volume (User defined) [m³]	
Net volume (User defined) [m³]	31,36
Floor area (From visualized geometry) [m²]	9,731
Other parameters	
Initial temperature [°C]	20
Initial rel. humidity [%]	55
Initial CO2-concentration [ppmv]	400
Distribution of solar gains on interior surfaces	Proportional to area
Solar radiation direct to interior air [-]	0,1

Case 1/Zone 3: Design conditions

Min. temperature (heating) [°C]	20
Max. temperature (cooling) [°C]	27
Min. relative humidity (humidification) [%]	20
Max. relative humidity (dehumidification) [%]	50
Max. CO2-concentration [ppmv]	3000
Natural ventilation [1/h]	0
Mechanical ventilation [m³/h]	38
Infiltration ACH [1/h]	0,03

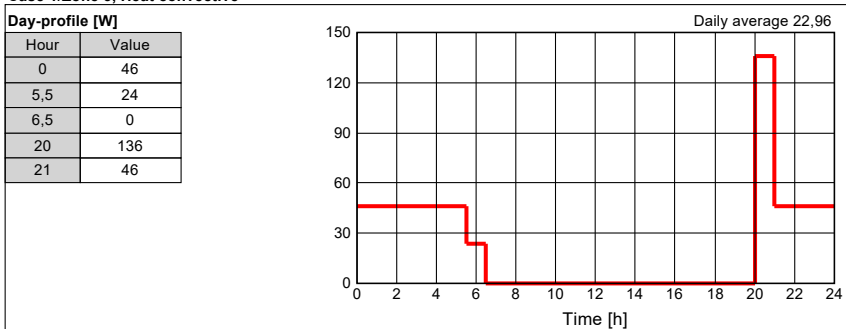
Case 1/Zone 3, Natural ventilation, exeption 1



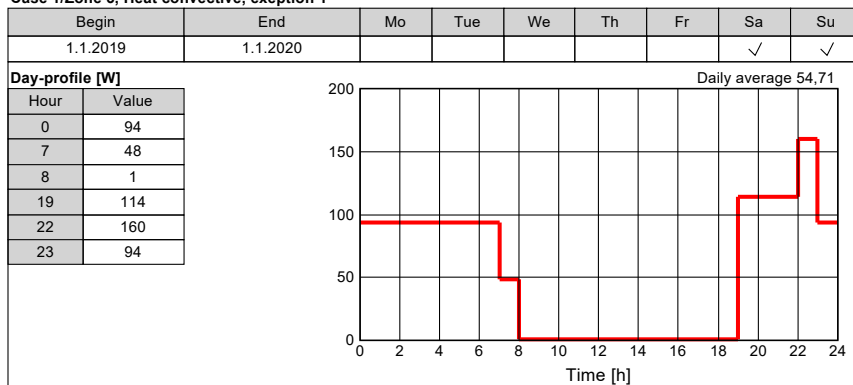
Case 1/Zone 3: Loads/Occupancy

Clothing [clo]	0,7
Air velocity [m/s]	0,1

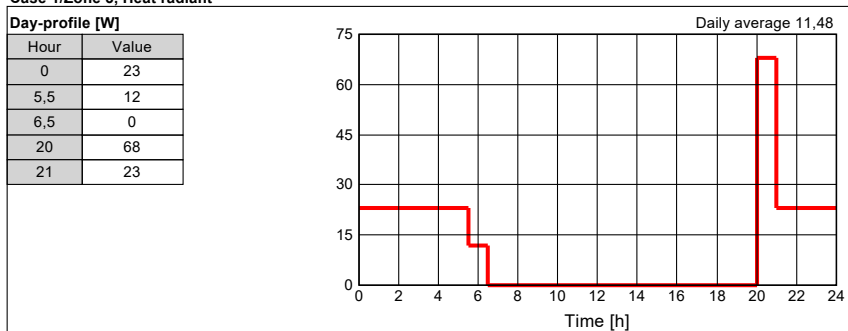
Case 1/Zone 3, Heat convective



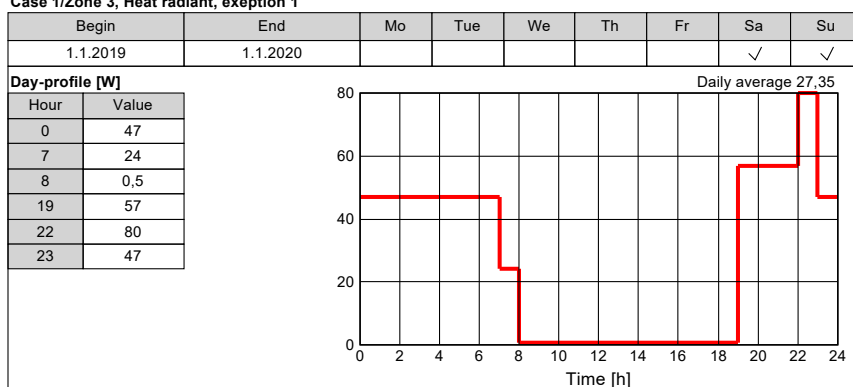
Case 1/Zone 3, Heat convective, exeption 1



Case 1/Zone 3, Heat radiant



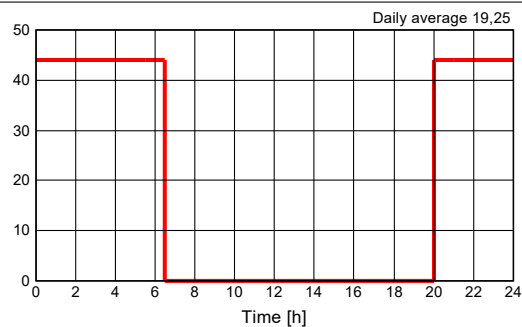
Case 1/Zone 3, Heat radiant, exeption 1



Case 1/Zone 3, Moisture

Day-profile [g/h]

Hour	Value
0	44
5,5	44
6,5	0
20	44
21	44

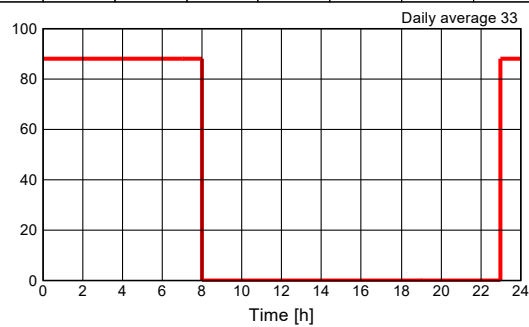


Case 1/Zone 3, Moisture, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

Day-profile [g/h]

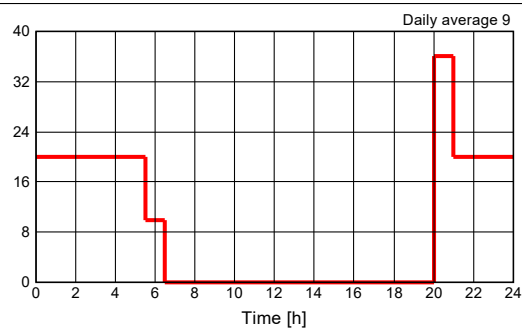
Hour	Value
0	88
7	88
8	0
19	0
22	0
23	88

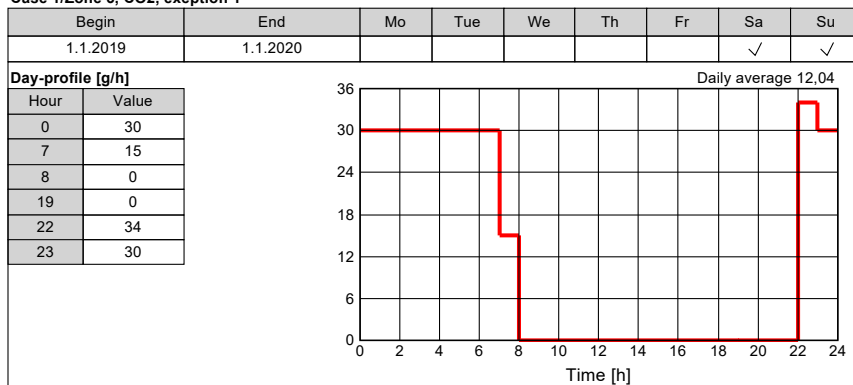
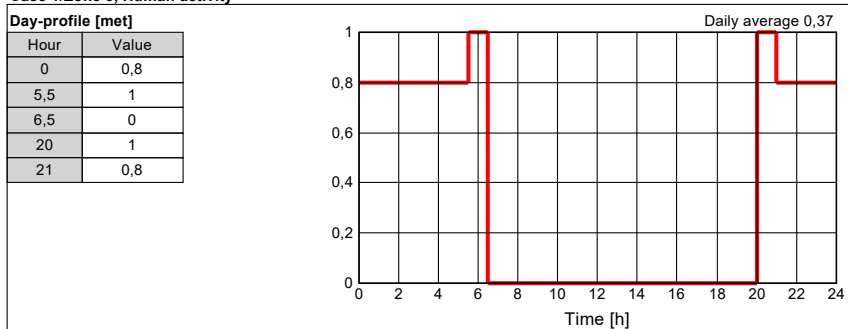
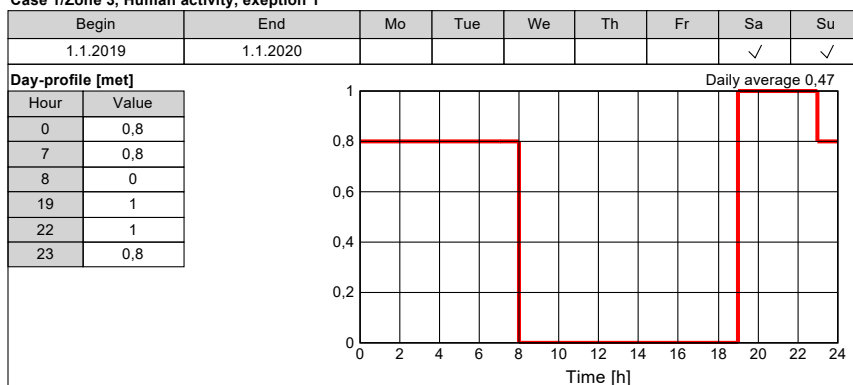


Case 1/Zone 3, CO2

Day-profile [g/h]

Hour	Value
0	20
5,5	10
6,5	0
20	36
21	20



Case 1/Zone 3, CO2, exeption 1

Case 1/Zone 3, Human activity

Case 1/Zone 3, Human activity, exeption 1

Case 1/Zone 3, Clothing, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

0,7 clo

Case 1/Zone 3, Air velocity, exception 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓
0,1 m/s								

Case 1/Zone 3: Visualized components

Case 1/Zone 3/Component 1: General data

Name	Vegg mellom sov nord og stue
Type	Opaque
Interior side	Zone 3: Soverom nord
Outer side	Zone 4: Stue/ Kjøkken
Assembly	Assembly (Id.3): Vegg mellom sov sør og stue
U [W/m²K]	0,4515
Geometry	
Area [m²]	10,1
Inclination [°]	90
Orientation	South-East (7 %), South-West (93 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,185
Solar radiation on second interior surface [-]	0,067
Height above ground (User defined) [m]	

Case 1/Zone 3/Component 2: General data

Name	Vegg mellom leilighet
Type	Opaque
Interior side	Zone 3: Soverom nord
Outer side	Space with the same interior conditions
Assembly	Assembly (Id.2): Vegg mellom leilighet
U [W/m²K]	0,2123
Geometry	
Area [m²]	11,5
Inclination [°]	90
Orientation	North-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,209
Height above ground (User defined) [m]	

Case 1/Zone 3/Component 3: General data

Name	Yttervegg soverom nord
Type	Opaque
Interior side	Zone 3: Soverom nord
Outer side	Outer air
Assembly	Assembly (Id.1): Lightweight timber framed wall
U [W/m²K]	0,186
Geometry	
Area [m²]	5,2
Inclination [°]	90
Orientation	North-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,095
Height above ground (User defined) [m]	

Case 1/Zone 3/Component 4: General data

Name	Vindu yttervegg soverom nord
Type	Transparent
Interior side	Zone 3: Soverom nord
Outer side	Outer air
Window type	Window type (Id 1): Example 1
Solar protection	
Uw - installed [W/m²K]	0,79
Geometry	
Area [m²]	1
Inclination [°]	90
Orientation	North-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,019
Height above ground (User defined) [m]	

Case 1/Zone 3/Component 5: General data

Name	Himling
Type	Opaque
Interior side	Zone 3: Soverom nord
Outer side	Space with the same interior conditions
Assembly	Assembly (Id.7): Himling
U [W/m²K]	0,53
Geometry	
Area [m²]	9,7
Inclination [°]	0
Orientation	Horizontal (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	5,5
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,1
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,177
Height above ground (User defined) [m]	

Case 1/Zone 3/Component 6: General data

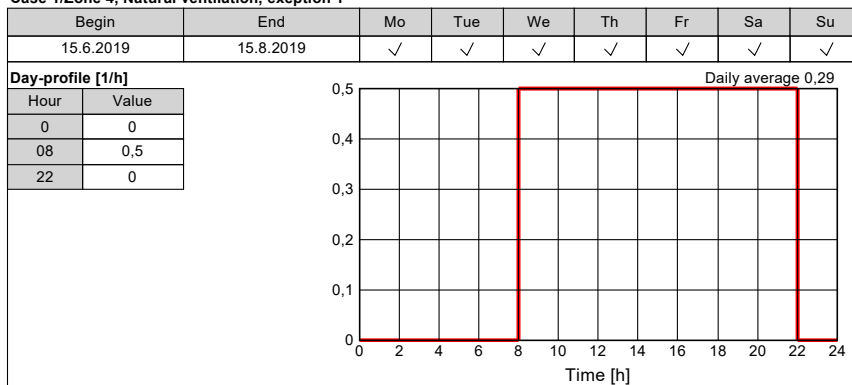
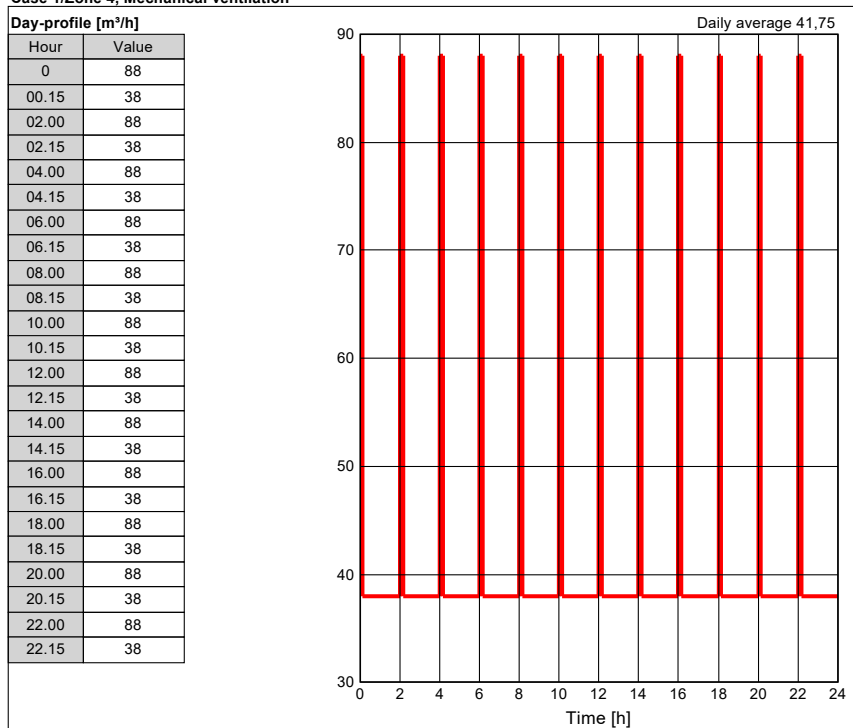
Name	Gulv
Type	Opaque
Interior side	Zone 3: Soverom nord
Outer side	Ground
Assembly	Assembly (Id.5): Gulv
U [W/m²K]	0,0714
Geometry	
Area [m²]	9,7
Inclination [°]	180
Orientation	Horizontal (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	99999
Heat transfer coefficient radiant, extern [W/m²K]	0
Heat transfer coefficient convective, intern [W/m²K]	2,5
Heat transfer coefficient radiant, intern [W/m²K]	3,38235
Rse / Rsi (According to component type) [-]	0 / 0,17
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,177
Height above ground (User defined) [m]	

Case 1/Zone 4: General data

Name	Stue/ Kjøkken
Geometry	
Gross volume (User defined) [m³]	
Net volume (User defined) [m³]	83,6
Floor area (From visualized geometry) [m²]	33,399
Other parameters	
Initial temperature [°C]	20
Initial rel. humidity [%]	55
Initial CO2-concentration [ppmv]	400
Distribution of solar gains on interior surfaces	Proportional to area
Solar radiation direct to interior air [-]	0,1

Case 1/Zone 4: Design conditions

Min. temperature (heating) [°C]	20
Max. temperature (cooling) [°C]	27
Min. relative humidity (humidification) [%]	20
Max. relative humidity (dehumidification) [%]	50
Max. CO2-concentration [ppmv]	3000
Natural ventilation [1/h]	0
Infiltration ACH [1/h]	0,03

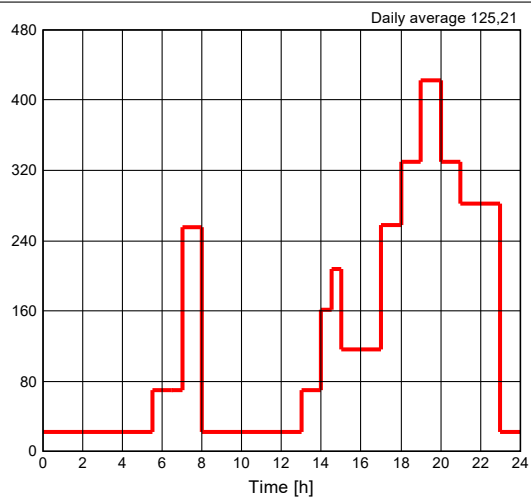
Case 1/Zone 4, Natural ventilation, exeption 1

Case 1/Zone 4, Mechanical ventilation

Case 1/Zone 4: Loads/Occupancy

v	Clothing [clo]	0,7
	Air velocity [m/s]	0,1

Case 1/Zone 4, Heat convective

Day-profile [W]

Hour	Value
0	22
5,5	70
6,5	70
7	256
8	22
13	70
14	162
14,5	208
15	116
17	258
18	330
19	422
20	330
21	282
23	22

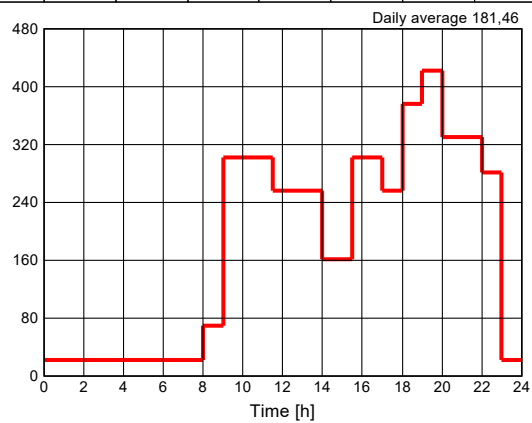


Case 1/Zone 4, Heat convective, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

Day-profile [W]

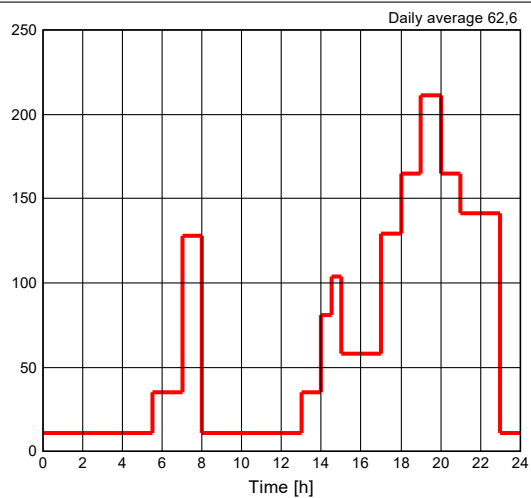
Hour	Value
0	22
8	70
9	302
11,5	256
14	162
15,5	302
17	256
18	376
19	422
20	330
22	282
23	22



Case 1/Zone 4, Heat radiant

Day-profile [W]

Hour	Value
0	11
5,5	35
6,5	35
7	128
8	11
13	35
14	81
14,5	104
15	58
17	129
18	165
19	211
20	165
21	141
23	11

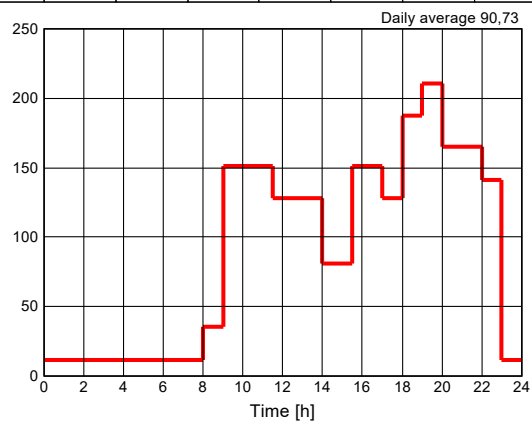


Case 1/Zone 4, Heat radiant, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

Day-profile [W]

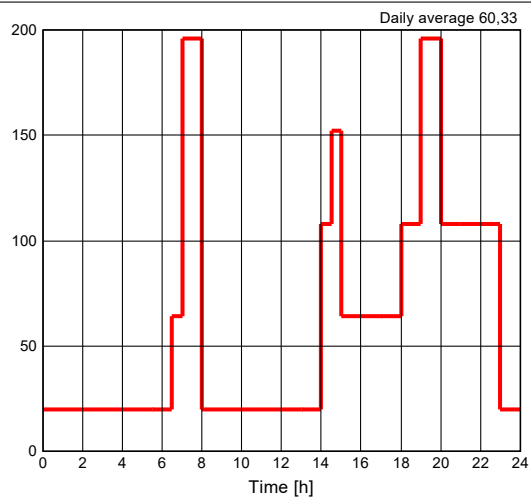
Hour	Value
0	11
8	35
9	151
11,5	128
14	81
15,5	151
17	128
18	188
19	211
20	165
22	141
23	11



Case 1/Zone 4, Moisture

Day-profile [g/h]

Hour	Value
0	20
5,5	20
6,5	64
7	196
8	20
13	20
14	108
14,5	152
15	64
17	64
18	108
19	196
20	108
21	108
23	20

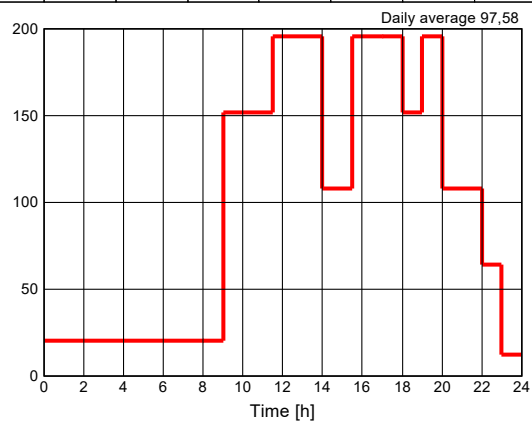


Case 1/Zone 4, Moisture, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

Day-profile [g/h]

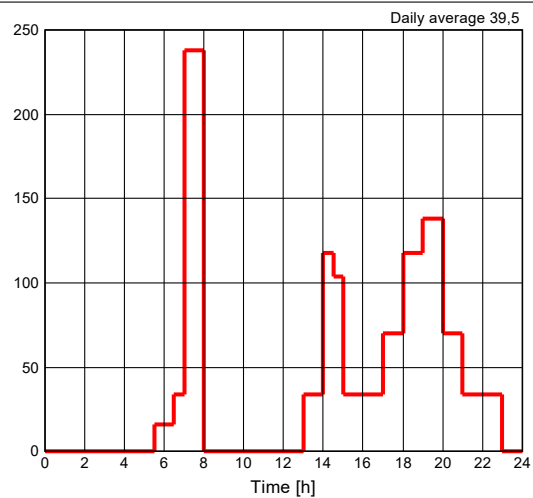
Hour	Value
0	20
8	20
9	152
11,5	196
14	108
15,5	196
17	196
18	152
19	196
20	108
22	64
23	12



Case 1/Zone 4, CO2

Day-profile [g/h]

Hour	Value
0	0
5,5	16
6,5	34
7	238
8	0
13	34
14	118
14,5	104
15	34
17	70
18	118
19	138
20	70
21	34
23	0

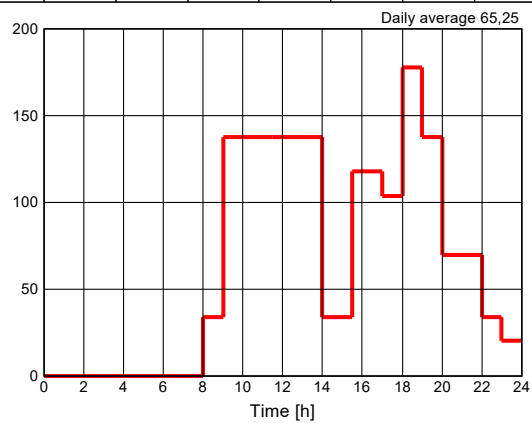


Case 1/Zone 4, CO2, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

Day-profile [g/h]

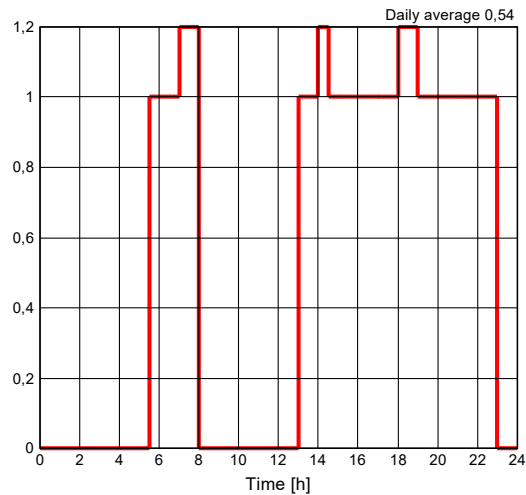
Hour	Value
0	0
8	34
9	138
11,5	138
14	34
15,5	118
17	104
18	178
19	138
20	70
22	34
23	20



Case 1/Zone 4, Human activity

Day-profile [met]

Hour	Value
0	0
5,5	1
6,5	1
7	1,2
8	0
13	1
14	1,2
14,5	1
15	1
17	1
18	1,2
19	1
20	1
21	1
23	0

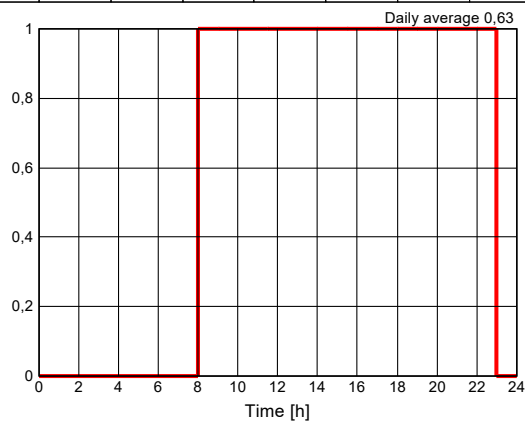


Case 1/Zone 4, Human activity, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓

Day-profile [met]

Hour	Value
0	0
8	1
9	1
11,5	1
14	1
15,5	1
17	1
18	1
19	1
20	1
22	1
23	0



Case 1/Zone 4, Clothing, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓
0,7 clo								

Case 1/Zone 4, Air velocity, exeption 1

Begin	End	Mo	Tue	We	Th	Fr	Sa	Su
1.1.2019	1.1.2020						✓	✓
0,1 m/s								

Case 1/Zone 4/Component 1: General data

Name	Vegg mellom leiligheter
Type	Opaque
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Space with the same interior conditions
Assembly	Assembly (Id.2): Vegg mellom leilighet
U [W/m²K]	0,2123
Geometry	
Area [m²]	16,3
Inclination [°]	90
Orientation	South-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,108
Height above ground (User defined) [m]	

Case 1/Zone 4/Component 2: General data

Name	Gulv
Type	Opaque
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Ground
Assembly	Assembly (Id.5): Gulv
U [W/m²K]	0,0714
Geometry	
Area [m²]	33,4
Inclination [°]	180
Orientation	Horizontal (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	99999
Heat transfer coefficient radiant, extern [W/m²K]	0
Heat transfer coefficient convective, intern [W/m²K]	2,5
Heat transfer coefficient radiant, intern [W/m²K]	3,38235
Rse / Rsi (According to component type) [-]	0 / 0,17
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,22
Height above ground (User defined) [m]	

Case 1/Zone 4/Component 3: General data

Name	Himling
Type	Opaque
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Space with the same interior conditions
Assembly	Assembly (Id.7): Himling
U [W/m²K]	0,53
Geometry	
Area [m²]	33,4
Inclination [°]	0
Orientation	Horizontal (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	5,5
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,1
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,22
Height above ground (User defined) [m]	

Case 1/Zone 4/Component 4: General data

Name	Vegg mellom stue og bod
Type	Opaque
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Attached zone 1
Assembly	Assembly (Id.3): Vegg mellom sov sør og stue
U [W/m²K]	0,4515
Geometry	
Area [m²]	15,3
Inclination [°]	90
Orientation	South-East (26 %), North-East (48 %), North-West (26 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,101
Height above ground (User defined) [m]	

Case 1/Zone 4/Component 5: General data

Name	Vegg mellom stue og soverom nord
Type	Opaque
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Zone 3: Soverom nord
Assembly	Assembly (Id.3): Vegg mellom sov sør og stue
U [W/m²K]	0,4515
Geometry	
Area [m²]	2,1
Inclination [°]	90
Orientation	South-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	3,19231
Heat transfer coefficient radiant, extern [W/m²K]	4,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,13 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,014
Solar radiation on second interior surface [-]	0,038
Height above ground (User defined) [m]	

Case 1/Zone 4/Component 6: General data

Name	Vindu yttervegg sør
Type	Transparent
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Outer air
Window type	Window type (Id 1): Example 1
Solar protection	Solar protection (Id 2): New
Uw - installed [W/m²K]	0,79
Geometry	
Area [m²]	2,8
Inclination [°]	90
Orientation	South-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,019

Case 1/Zone 4/Component 7: General data

Name	Yttervegg
Type	Opaque
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Outer air
Assembly	Assembly (Id.1): Lightweight timber framed wall
U [W/m²K]	0,186
Geometry	
Area [m²]	2,2
Inclination [°]	90
Orientation	South-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,014
Height above ground (User defined) [m]	

Case 1/Zone 4/Component 8: General data

Name	Yttervegg
Type	Opaque
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Outer air
Assembly	Assembly (Id.1): Lightweight timber framed wall
U [W/m²K]	0,186
Geometry	
Area [m²]	5,9
Inclination [°]	90
Orientation	South-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,039
Height above ground (User defined) [m]	

Case 1/Zone 4/Component 9: General data

Name	Yttervegg
Type	Opaque
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Outer air
Assembly	Assembly (Id.1): Lightweight timber framed wall
U [W/m²K]	0,186
Geometry	
Area [m²]	2,5
Inclination [°]	90
Orientation	South-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,016
Height above ground (User defined) [m]	

Case 1/Zone 4/Component 10: General data

Name	Yttervegg
Type	Opaque
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Outer air
Assembly	Assembly (Id.1): Lightweight timber framed wall
U [W/m²K]	0,186
Geometry	
Area [m²]	3,4
Inclination [°]	90
Orientation	North-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,022
Height above ground (User defined) [m]	

Case 1/Zone 4/Component 11: General data

Name	Yttervegg
Type	Opaque
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Outer air
Assembly	Assembly (Id.1): Lightweight timber framed wall
U [W/m²K]	0,186
Geometry	
Area [m²]	2,1
Inclination [°]	90
Orientation	South-East (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Absorption / Emission (User defined) [-]	0,4 / 0,9
Sd-value - outer (No coating) [m]	----
Sd-value - outer (No coating) [m]	----
Rain load R1 / R2 (No rain load) [-]	0 / 0
Rain absorption (No rain absorption) [-]	0
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,014
Height above ground (User defined) [m]	

Case 1/Zone 4/Component 12: General data

Name	Vindu stue nord
Type	Transparent
Interior side	Zone 4: Stue/ Kjøkken
Outer side	Outer air
Window type	Window type (Id 1): Example 1
Solar protection	Solar protection (Id 3): New
Uw - installed [W/m²K]	0,79
Geometry	
Area [m²]	5,8
Inclination [°]	90
Orientation	North-West (100 %)
Surface	
Heat transfer coefficient convective, extern [W/m²K]	18,5
Heat transfer coefficient radiant, extern [W/m²K]	6,5
Heat transfer coefficient convective, intern [W/m²K]	3,19231
Heat transfer coefficient radiant, intern [W/m²K]	4,5
Rse / Rsi (According to component type) [-]	0,04 / 0,13
Shading factor constant [-]	1
Solar radiation on interior surface [-]	0,038
Height above ground (User defined) [m]	

Assemblies/window types/solar protection

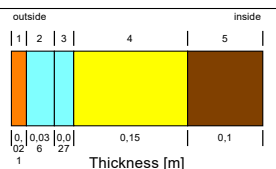
Assembly (Id.1): Lightweight timber framed wall

Homogenous layers

Thermal resistance: 5,206 m²K/W (without R_{si}, R_{se})

Heat transfer coefficient (U-value): 0,186 W/m²K

Thickness: 0,334 m



Nr.	Material/Layer (from outside to inside)	ρ [kg/m³]	c [J/kgK]	λ [W/mK]	Thickness [m]	Color
1	Scandinavian spruce transverse direction II	390	1600	0,13	0,021	Orange
2	Air Layer 40 mm	1,3	1000	0,23	0,036	Cyan
3	Air Layer 40 mm	1,3	1000	0,23	0,027	Cyan
4	Mineral Wool (heat cond.: 0,04 W/mK)	60	850	0,04	0,15	Yellow
5	Stora Enso CLT	410	1300	0,098	0,1	Brown

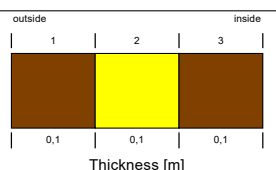
Assembly (Id.2): Vegg mellom leilighet

Homogenous layers

Thermal resistance: 4,541 m²K/W (without R_{si}, R_{se})

Heat transfer coefficient (U-value): 0,212 W/m²K

Thickness: 0,3 m



Nr.	Material/Layer (from outside to inside)	ρ [kg/m³]	c [J/kgK]	λ [W/mK]	Thickness [m]	Color
1	Stora Enso CLT	410	1300	0,098	0,1	Brown
2	Mineral Wool (heat cond.: 0,04 W/mK)	60	850	0,04	0,1	Yellow
3	Stora Enso CLT	410	1300	0,098	0,1	Brown

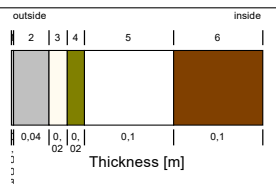
Assembly (Id.7): Himling

Homogenous layers

Thermal resistance: 1,747 m²K/W (without R_{si}, R_{se})

Heat transfer coefficient (U-value): 0,53 W/m²K

Thickness: 0,283 m



Nr.	Material/Layer (from outside to inside)	ρ [kg/m³]	c [J/kgK]	λ [W/mK]	Thickness [m]	Color
1	Linoleum nach DIN 18171	1000	1500	0,17	0,003	
2	Cement Paste w/c 0,6	1413	1000	1,7	0,04	
3	Cement Plaster (stucco, A-value: 0.51 kg/m²h0.5)	2000	850	1,2	0,02	
4	Wood-Fibre Insulation Board	155	1400	0,042	0,02	
5	Shingle	2000	1840	0,52	0,1	
6	Stora Enso CLT	410	1300	0,098	0,1	

Assembly (Id.5): Gulv

Homogenous layers	outside	1	2	3	4	6	inside
Thermal resistance: 13,828 m²K/W (without R _{si} , R _{se})							
Heat transfer coefficient (U-value): 0,071 W/m²K							
Thickness: 0,655 m		0,1	0,1	0,250	0,1	0,1	
		Thickness [m]					

Nr.	Material/Layer (from outside to inside)	ρ [kg/m³]	c [J/kgK]	λ [W/mK]	Thickness [m]	Color
1	EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	30	1500	0,04	0,1	
2	EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	30	1500	0,04	0,1	
3	EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	30	1500	0,04	0,25	
4	EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	30	1500	0,04	0,1	
5	PE-Membrane 0,2 mm (sd = 87 m)	130	2200	1,65	0,002	
6	Concrete w/c 0,5	2308	850	1,7	0,1	
7	Linoleum nach DIN 18171	1000	1500	0,17	0,003	

Assembly (Id.3): Vegg mellom sov sør og stue

Homogenous layers	outside	1	2	3	inside
Thermal resistance: 1,955 m²K/W (without R _{si} , R _{se})					
Heat transfer coefficient (U-value): 0,451 W/m²K					
Thickness: 0,099 m		0,013	0,073	0,013	
		Thickness [m]			

Nr.	Material/Layer (from outside to inside)	ρ [kg/m³]	c [J/kgK]	λ [W/mK]	Thickness [m]	Color
1	Gypsum Plaster	1721	850	0,2	0,013	
2	Mineral Wool (heat cond.: 0,04 W/mK)	60	850	0,04	0,073	
3	Gypsum Plaster	1721	850	0,2	0,013	

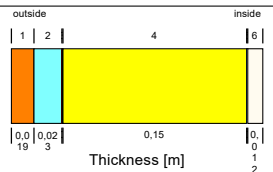
Assembly (Id.4): Lightweight timber framed wall

Homogenous layers

Thermal resistance: 4,17 m²K/W (without R_{si}, R_{se})

Heat transfer coefficient (U-value): 0,226 W/m²K

Thickness: 0,206 m



Nr.	Material/Layer (from outside to inside)	ρ [kg/m³]	c [J/kgK]	λ [W/mK]	Thickness [m]	Color
1	Spruce, radial	455	1400	0,09	0,019	Orange
2	Air Layer 25 mm	1,3	1000	0,155	0,023	Cyan
3	60 minute Building Paper	280	1500	12	0,001	Dark Red
4	Mineral Wool (heat cond.: 0,04 W/mK)	60	850	0,04	0,15	Yellow
5	PE-Membrane 0,15 mm (sd = 70 m)	130	2200	2,2	0,001	Blue
6	Gypsum Board	850	850	0,2	0,012	Beige

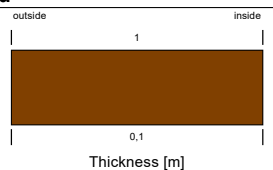
Assembly (Id.10): Vegg massivtre mellom sov sør og bad

Homogenous layers

Thermal resistance: 1,02 m²K/W (without R_{si}, R_{se})

Heat transfer coefficient (U-value): 0,781 W/m²K

Thickness: 0,1 m



Nr.	Material/Layer (from outside to inside)	ρ [kg/m³]	c [J/kgK]	λ [W/mK]	Thickness [m]	Color
1	Stora Enso CLT	410	1300	0,098	0,1	Brown

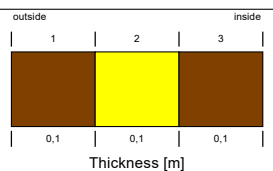
Assembly (Id.8): Vegg mellom leilighet

Homogenous layers

Thermal resistance: 4,541 m²K/W (without R_{si}, R_{se})

Heat transfer coefficient (U-value): 0,212 W/m²K

Thickness: 0,3 m



Nr.	Material/Layer (from outside to inside)	ρ [kg/m³]	c [J/kgK]	λ [W/mK]	Thickness [m]	Color
1	Stora Enso CLT	410	1300	0,098	0,1	Brown
2	Mineral Wool (heat cond.: 0,04 W/mK)	60	850	0,04	0,1	Yellow
3	Stora Enso CLT	410	1300	0,098	0,1	Brown

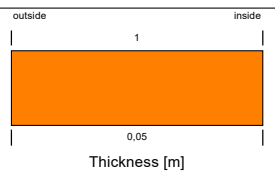
Assembly (Id.9): Dører

Homogenous layers

Thermal resistance: 0,556 m²K/W (without R_{si}, R_{se})

Heat transfer coefficient (U-value): 1,226 W/m²K

Thickness: 0,05 m



Nr.	Material/Layer (from outside to inside)	ρ [kg/m³]	c [J/kgK]	λ [W/mK]	Thickness [m]	Color
1	Softwood	400	1400	0,09	0,05	

Window type (Id 1): Example 1

U _w - installed [W/m²K]	0,79
Frame factor [-]	0,7
SHGC (short-wave radiation average) [-]	0,59
SHGC hemispherical [-]	0,59
Long wave radiation emissivity (mean glazing/frame) [-]	0,8

Solar protection (Id 1): New

Solar exposure for sunscreen device [-]	0,45
Thermal resistance solar protection [m²K/W]	0
Thermal resistance cavity [m²K/W]	0
Operation mode	Reduce overheating
Exclude weekends	No

Solar protection (Id 2): New

Solar exposure for sunscreen device [-]	0,45
Thermal resistance solar protection [m²K/W]	0
Thermal resistance cavity [m²K/W]	0
Operation mode	Reduce overheating
Exclude weekends	No

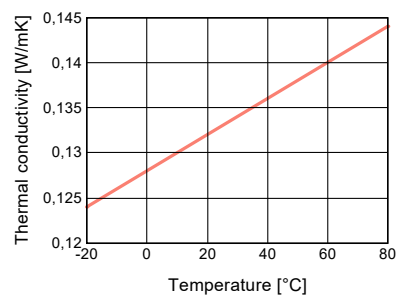
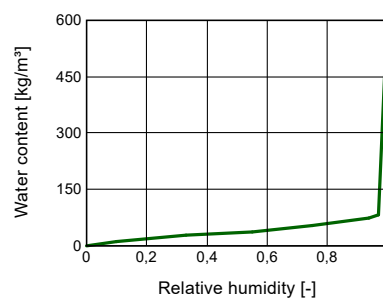
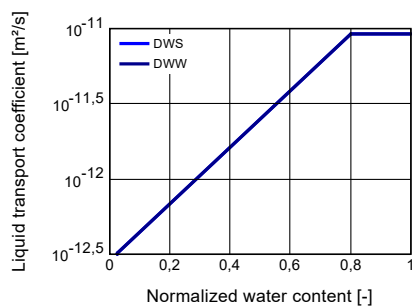
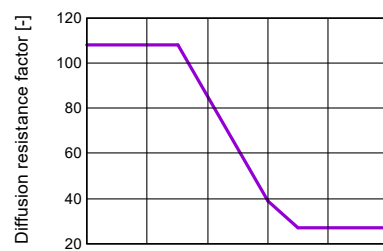
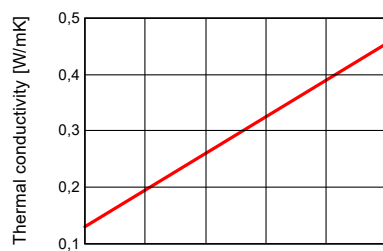
Solar protection (Id 3): New

Solar exposure for sunscreen device [-]	0,45
Thermal resistance solar protection [m²K/W]	0
Thermal resistance cavity [m²K/W]	0
Operation mode	Reduce overheating
Exclude weekends	No

Material data

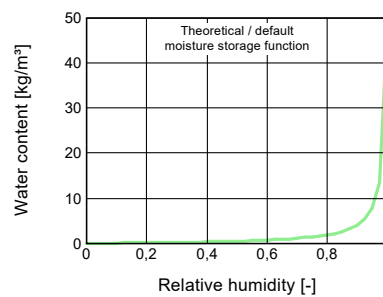
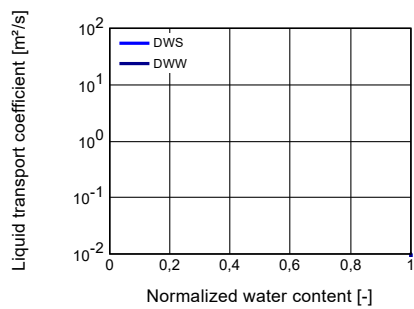
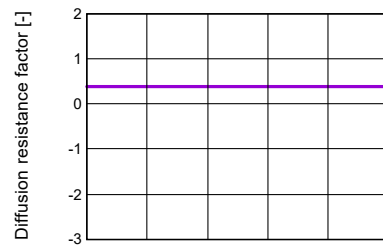
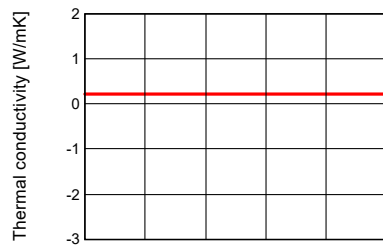
Material: Scandinavian spruce transverse direction II

Bulk density [kg/m³]	390	Typical built-in moisture [kg/m³]	0
Porosity	0,75	Thermal conductivity supplement [%/M.-%]	1,3
Specific heat capacity [J/kgK]	1600	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,13	Color	
Water vapor diffusion resistance factor	108		



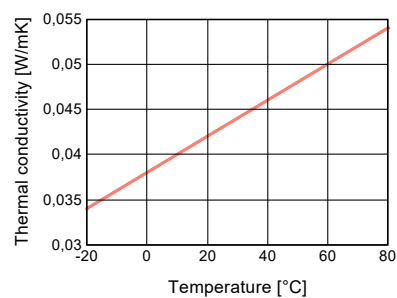
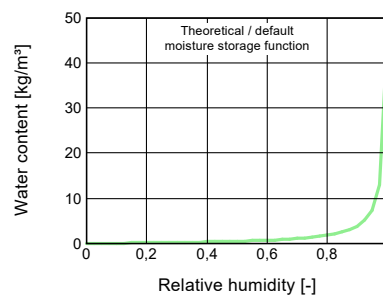
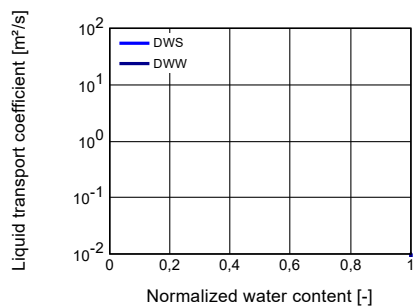
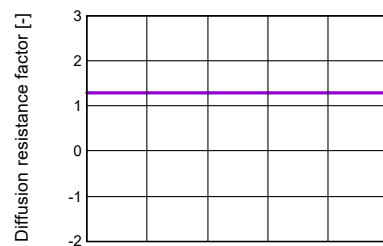
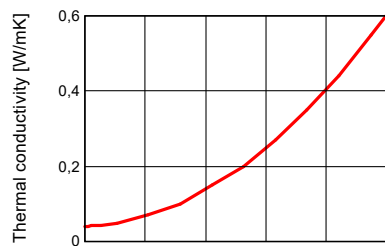
Material: Air Layer 40 mm

Bulk density [kg/m³]	1,3	Typical built-in moisture [kg/m³]	0
Porosity	0,999	Color	
Specific heat capacity [J/kgK]	1000		
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,23		
Water vapor diffusion resistance factor	0,38		



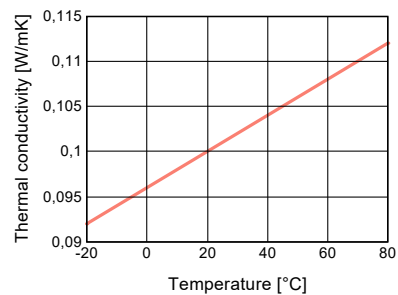
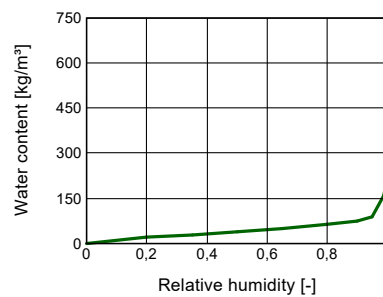
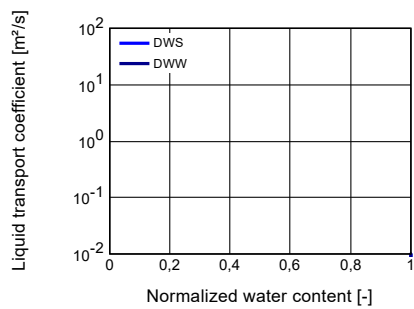
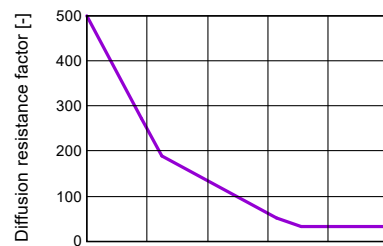
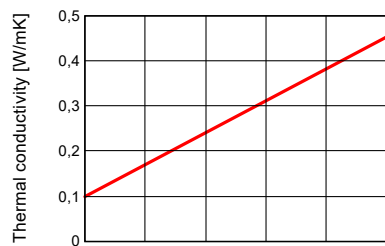
Material: Mineral Wool (heat cond.: 0,04 W/mK)

Bulk density [kg/m³]	60	Typical built-in moisture [kg/m³]	0
Porosity	0,95	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Specific heat capacity [J/kgK]	850	Color	
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,04		
Water vapor diffusion resistance factor	1,3		



Material: Stora Enso CLT

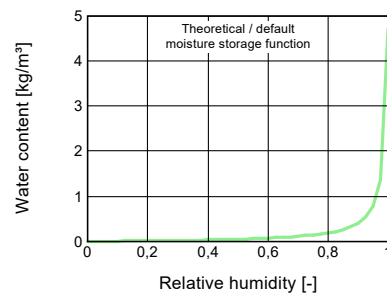
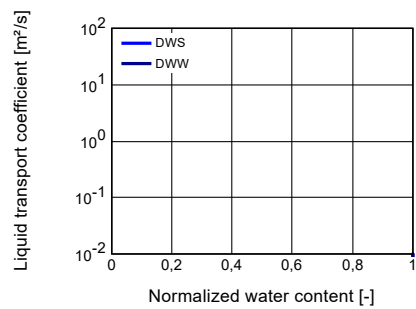
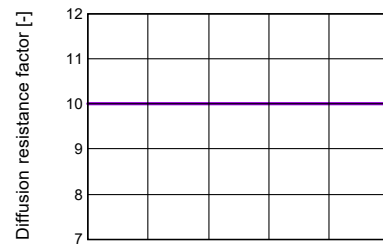
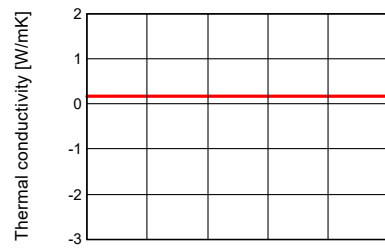
Bulk density [kg/m³]	410	Typical built-in moisture [kg/m³]	48
Porosity	0,74	Thermal conductivity supplement [%/M.-%]	2
Specific heat capacity [J/kgK]	1300	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,098	Color	
Water vapor diffusion resistance factor	500		



Material: Linoleum nach DIN 18171

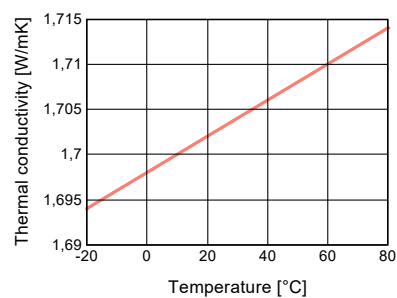
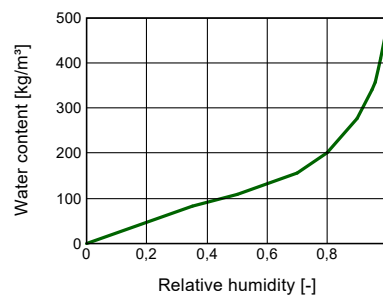
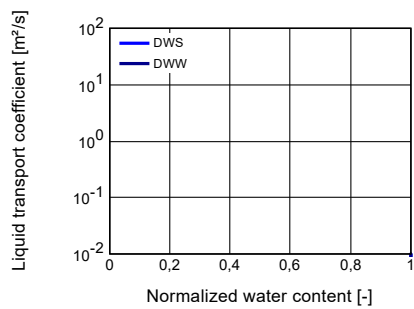
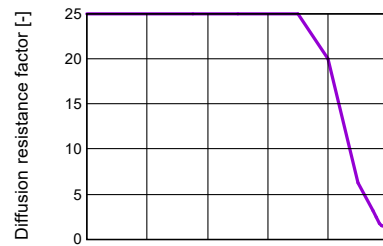
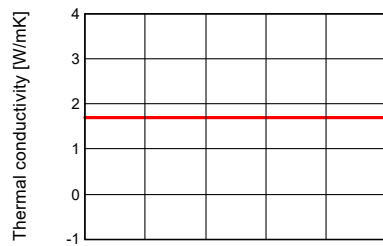
Bulk density [kg/m³]	1000
Porosity	0,1
Specific heat capacity [J/kgK]	1500
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,17
Water vapor diffusion resistance factor	10

Typical built-in moisture [kg/m³]	0
Color	



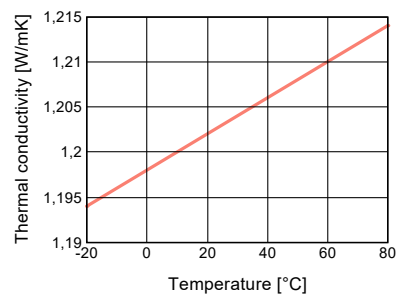
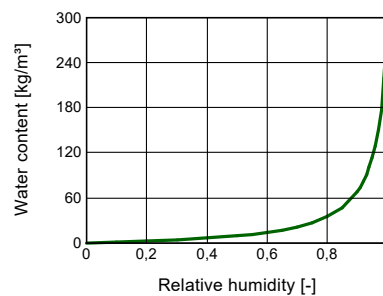
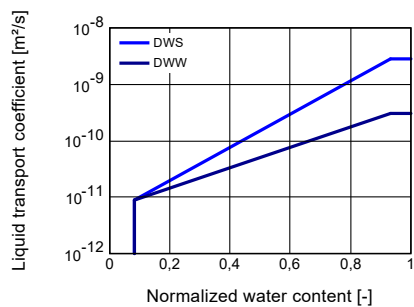
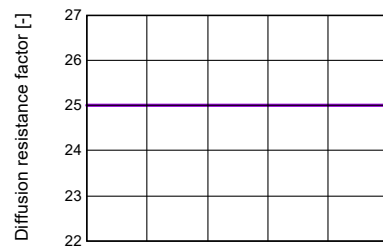
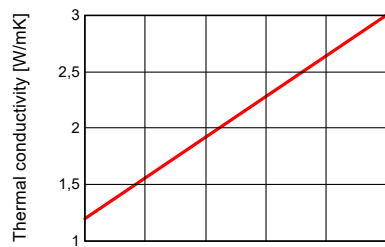
Material: Cement Paste w/c 0,6

Bulk density [kg/m³]	1413	Typical built-in moisture [kg/m³]	100
Porosity	0,48	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Specific heat capacity [J/kgK]	1000	Color	
Thermal conductivity, dry, 10 C/50 F [W/mK]	1,7		
Water vapor diffusion resistance factor	25		



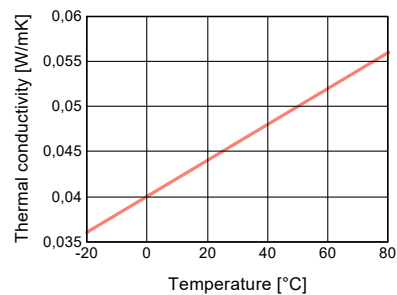
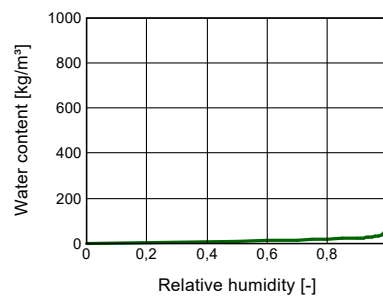
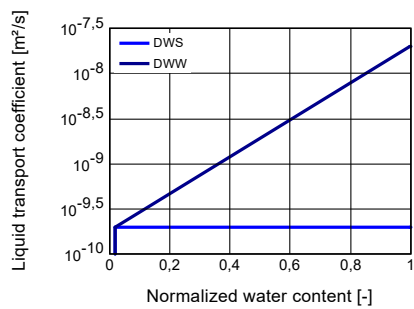
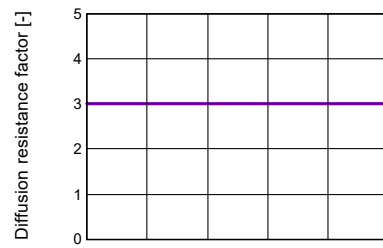
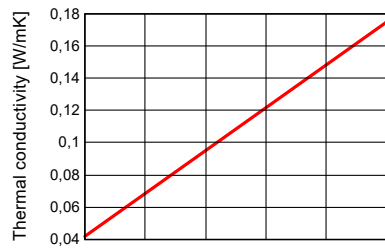
Material: Cement Plaster (stucco, A-value: 0.51 kg/m²h^{0.5})

Bulk density [kg/m ³]	2000	Typical built-in moisture [kg/m ³]	280
Porosity	0,3	Reference water content [kg/m ³]	35
Specific heat capacity [J/kgK]	850	Free water saturation [kg/m ³]	280
Thermal conductivity, dry, 10 C/50 F [W/mK]	1,2	Thermal conductivity supplement [%/M.-%]	10
Water vapor diffusion resistance factor	25	Temp-dep. thermal cond. supplement [W/mK ²]	0,0002
		Color	



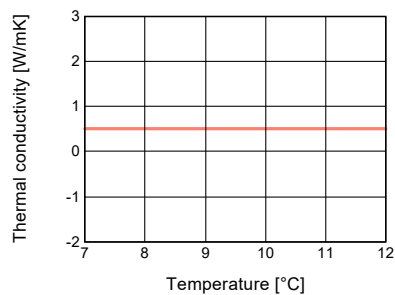
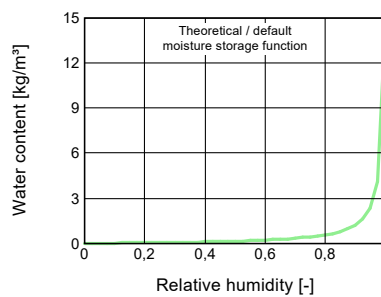
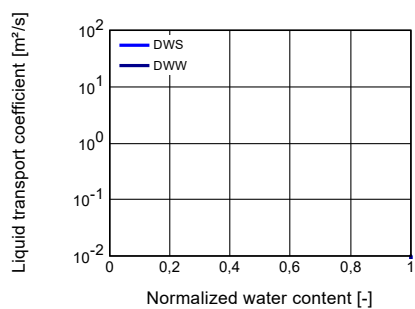
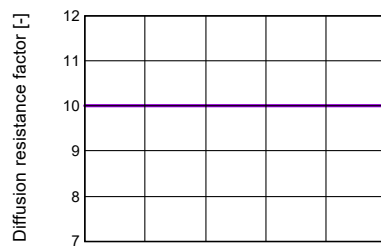
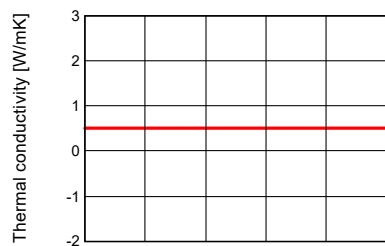
Material: Wood-Fibre Insulation Board

Bulk density [kg/m³]	155	Typical built-in moisture [kg/m³]	19
Porosity	0,981	Thermal conductivity supplement [%/M.-%]	0,5
Specific heat capacity [J/kgK]	1400	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,042	Color	
Water vapor diffusion resistance factor	3		



Material: Shingle

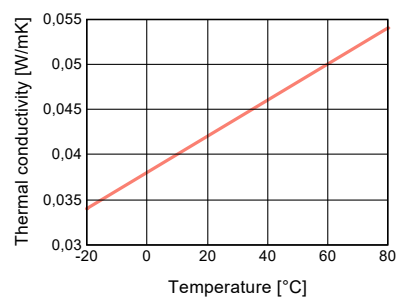
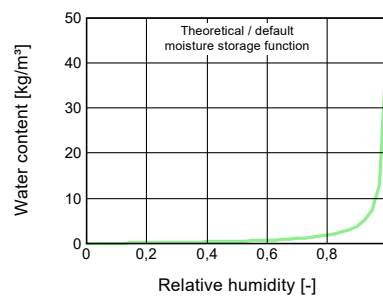
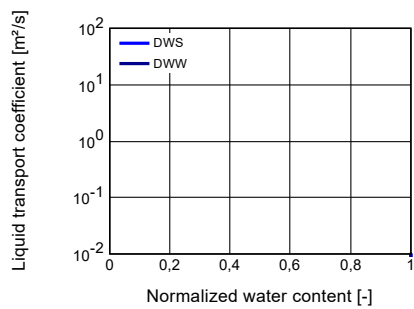
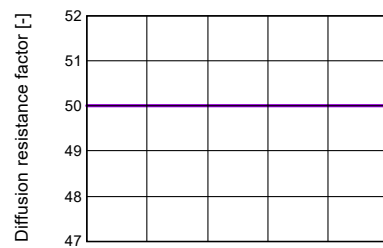
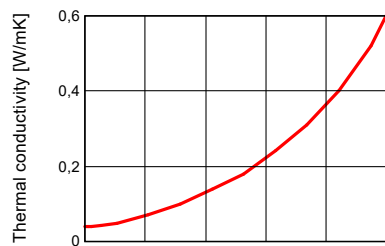
Bulk density [kg/m³]	2000	Typical built-in moisture [kg/m³]	0
Porosity	0,3	Color	
Specific heat capacity [J/kgK]	1840		
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,52		
Water vapor diffusion resistance factor	10		



Material: EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)

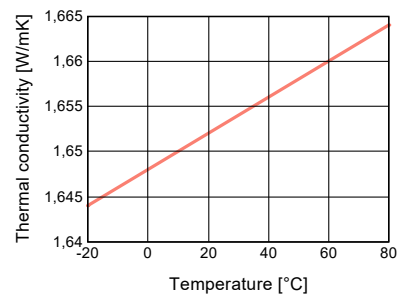
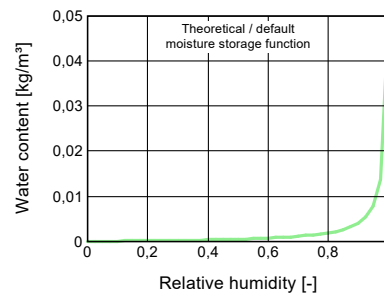
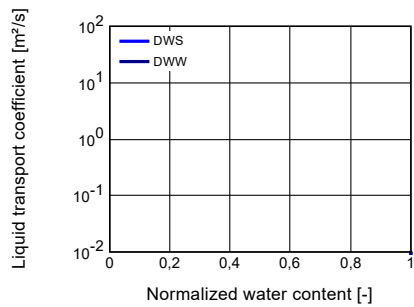
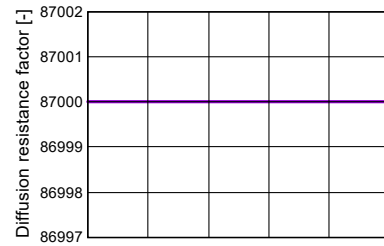
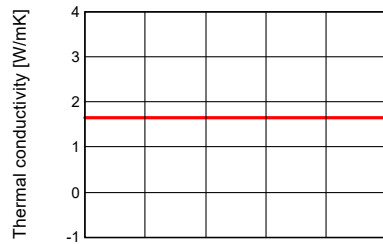
Bulk density [kg/m³]	30
Porosity	0,95
Specific heat capacity [J/kgK]	1500
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,04
Water vapor diffusion resistance factor	50

Typical built-in moisture [kg/m³]	0
Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Color	



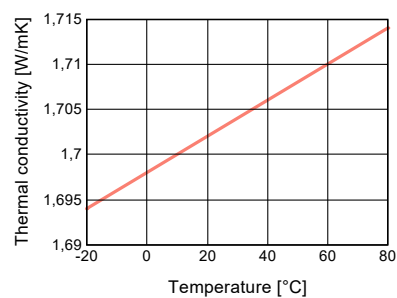
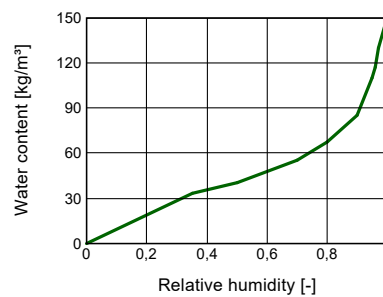
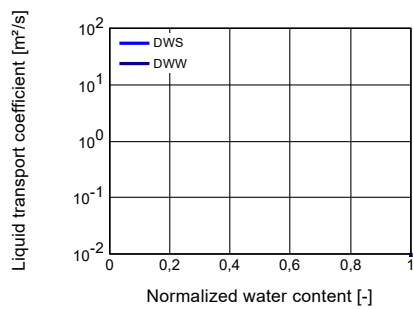
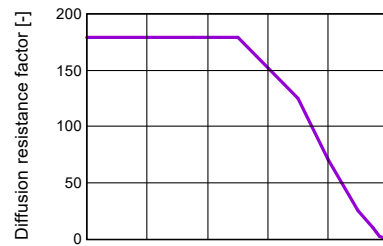
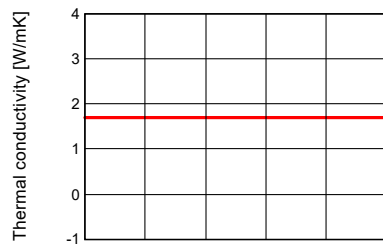
Material: PE-Membrane 0,2 mm (sd = 87 m)

Bulk density [kg/m³]	130	Typical built-in moisture [kg/m³]	0
Porosity	0,001	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Specific heat capacity [J/kgK]	2200	Color	
Thermal conductivity, dry, 10 C/50 F [W/mK]	1,65		
Water vapor diffusion resistance factor	87000		



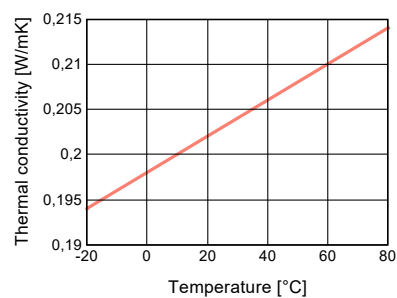
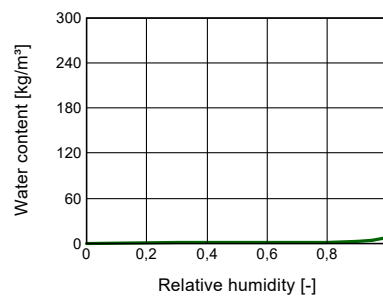
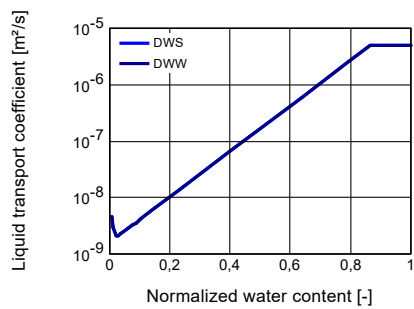
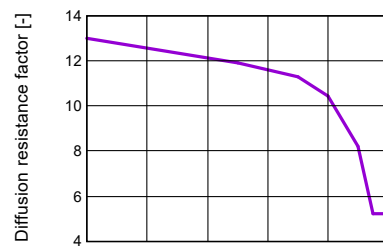
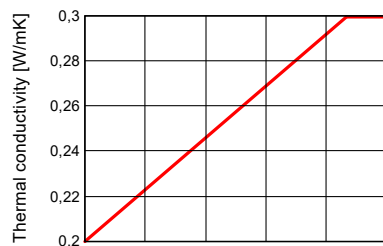
Material: Concrete w/c 0,5

Bulk density [kg/m³]	2308	Typical built-in moisture [kg/m³]	100
Porosity	0,15	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Specific heat capacity [J/kgK]	850	Color	
Thermal conductivity, dry, 10 C/50 F [W/mK]	1,7		
Water vapor diffusion resistance factor	179		



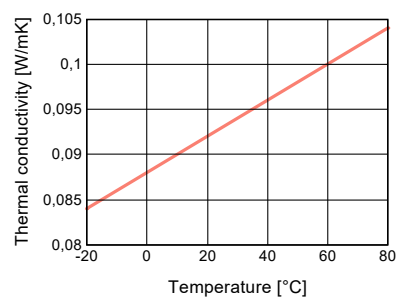
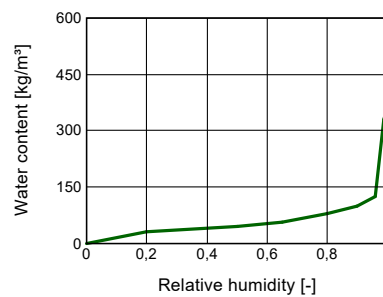
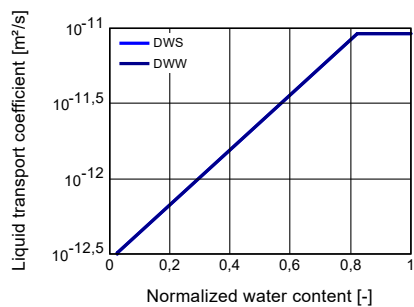
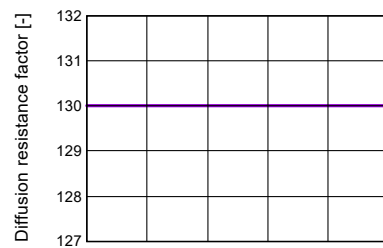
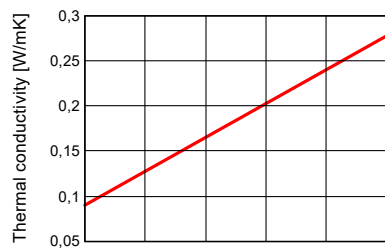
Material: Gypsum Plaster

Bulk density [kg/m³]	1721	Typical built-in moisture [kg/m³]	264,27
Porosity	0,305	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Specific heat capacity [J/kgK]	850	Color	
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,2		
Water vapor diffusion resistance factor	13		



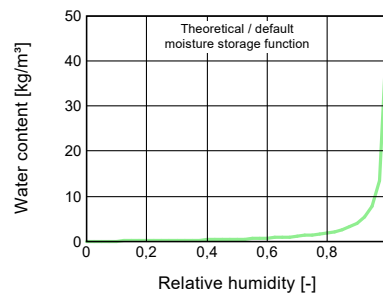
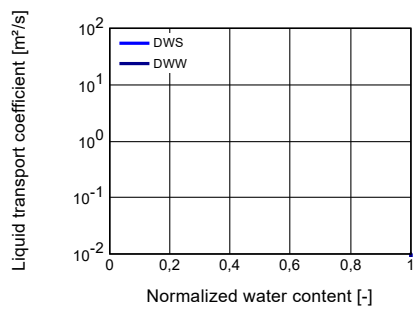
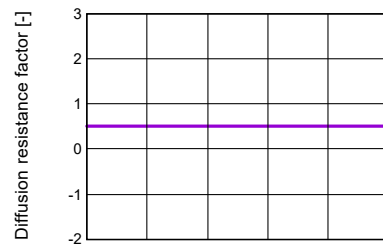
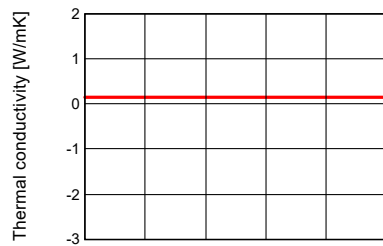
Material: Spruce, radial

Bulk density [kg/m³]	455	Typical built-in moisture [kg/m³]	80
Porosity	0,73	Thermal conductivity supplement [%/M.-%]	1,3
Specific heat capacity [J/kgK]	1400	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,09	Color	
Water vapor diffusion resistance factor	130		



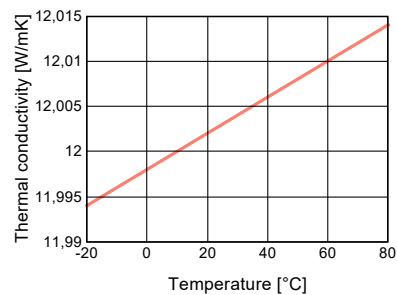
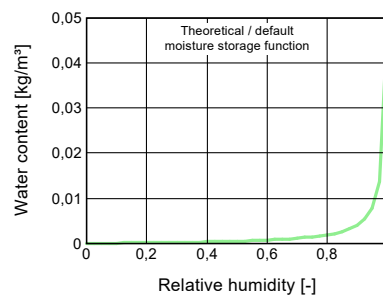
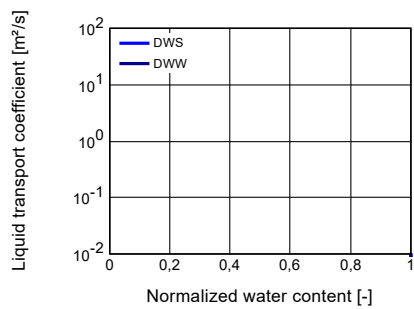
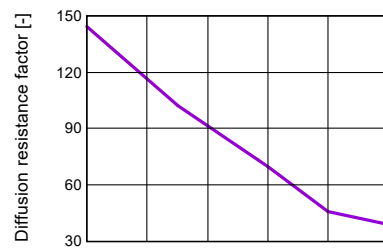
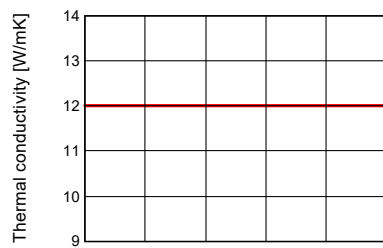
Material: Air Layer 25 mm

Bulk density [kg/m³]	1,3	Typical built-in moisture [kg/m³]	0,01
Porosity	0,999	Color	
Specific heat capacity [J/kgK]	1000		
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,155		
Water vapor diffusion resistance factor	0,51		



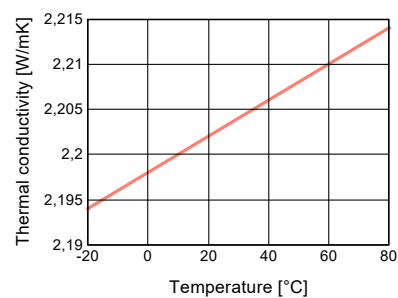
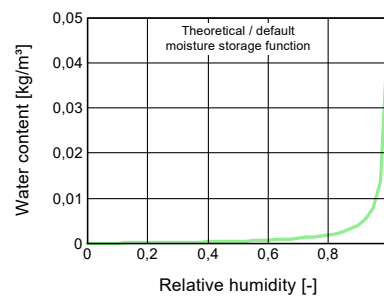
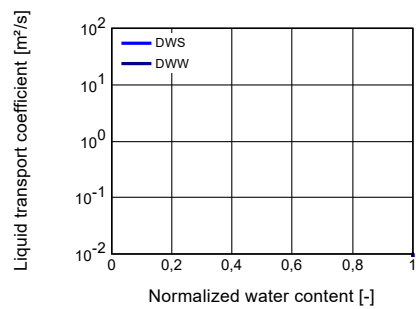
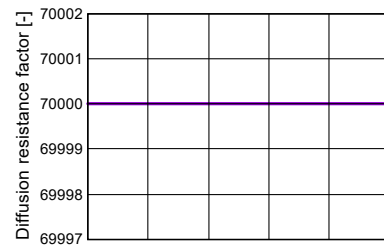
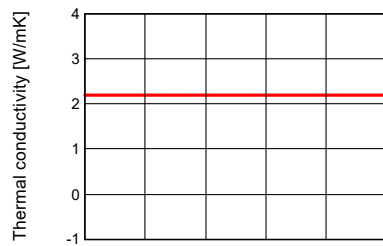
Material: 60 minute Building Paper

Bulk density [kg/m³]	280	Typical built-in moisture [kg/m³]	0
Porosity	0,001	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Specific heat capacity [J/kgK]	1500	Color	
Thermal conductivity, dry, 10 C/50 F [W/mK]	12		
Water vapor diffusion resistance factor	144		



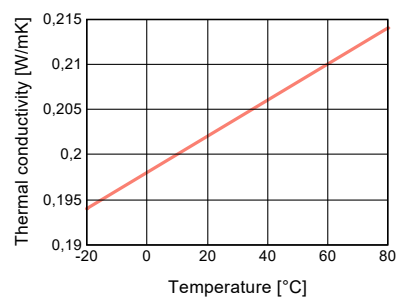
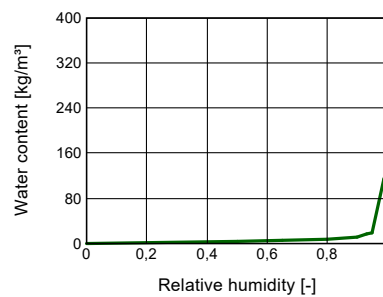
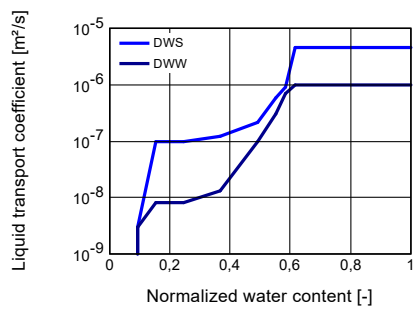
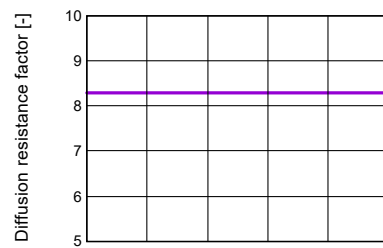
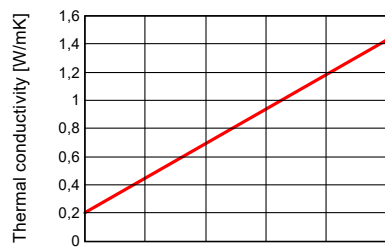
Material: PE-Membrane 0,15 mm (sd = 70 m)

Bulk density [kg/m³]	130	Typical built-in moisture [kg/m³]	0
Porosity	0,001	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Specific heat capacity [J/kgK]	2200	Color	
Thermal conductivity, dry, 10 C/50 F [W/mK]	2,2		
Water vapor diffusion resistance factor	70000		



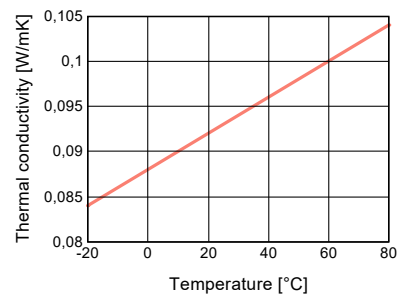
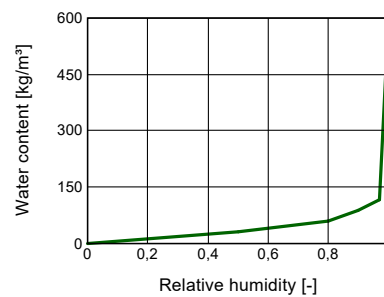
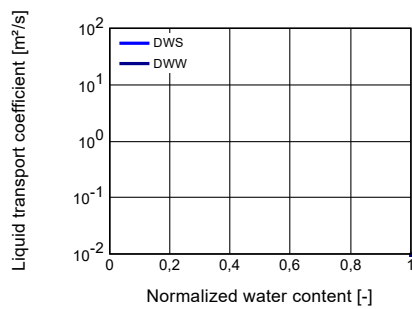
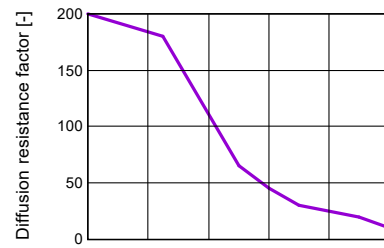
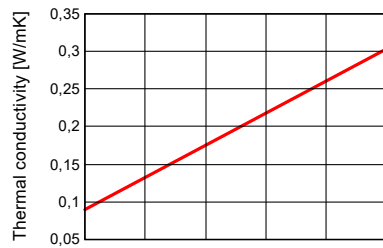
Material: Gypsum Board

Bulk density [kg/m³]	850	Typical built-in moisture [kg/m³]	6,3
Porosity	0,65	Thermal conductivity supplement [%/M.-%]	8
Specific heat capacity [J/kgK]	850	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,2	Color	
Water vapor diffusion resistance factor	8,3		



Material: Softwood

Bulk density [kg/m³]	400	Typical built-in moisture [kg/m³]	60
Porosity	0,73	Thermal conductivity supplement [%/M.-%]	1,3
Specific heat capacity [J/kgK]	1400	Temp-dep. thermal cond. supplement [W/mK²]	0,0002
Thermal conductivity, dry, 10 C/50 F [W/mK]	0,09	Color	
Water vapor diffusion resistance factor	200		



Results

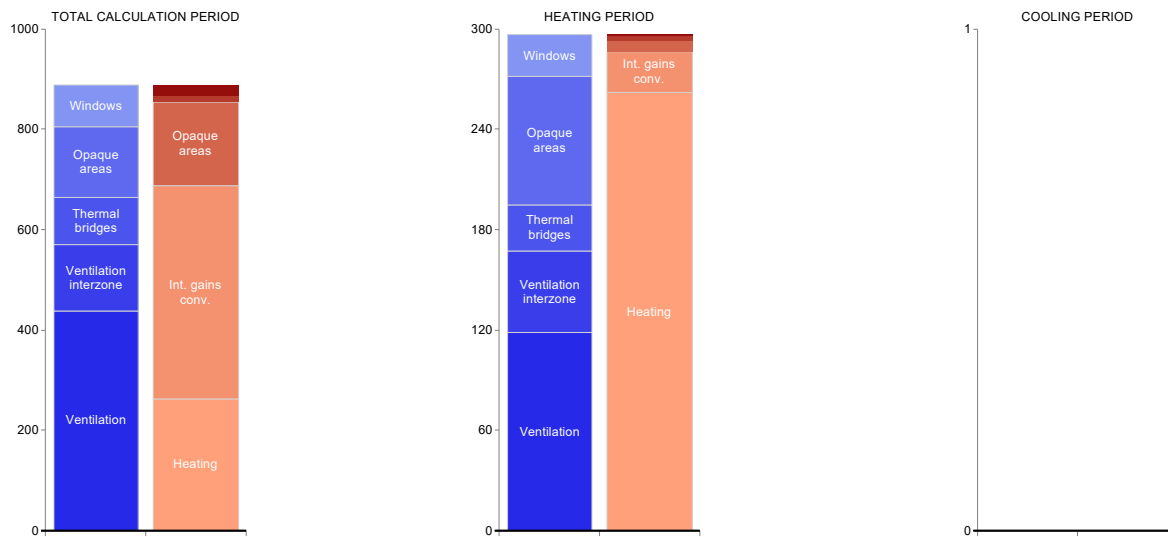
Heat gain/loss through components [kWh]

Nr.	Component group	Gain	Loss
1	Outer walls	4	501
2	Walls to unconditioned space	582	0
3	Floor on ground	246	515
4	Wall to conditioned zone	932	119
5	Ceiling to conditioned zone	456	53
6	Windows	1580	1154

Case 1/Zone 1: Main results

Speed setting			Value
Heating period [d]			87,9
Cooling period [d]			0
Heating demand [kWh]			261,9
Cooling demand [kWh]			0
Humidification demand [kg]			0
Dehumidification demand [kg]			0
Min/Max/Mean values			
Speed setting	Min	Max	Mean
Interior temperature [°C]	19	32,9	23,9
Interior relative humidity [%]	12,1	65,1	29,5
Heating load [kW]	0	0,5	0
Cooling load [kW]	0	0	0
Humidification [kg/h]	0	0	0
Dehumidification [kg/h]	0	0	0

ENERGY BALANCE / CONVECTIVE FLOWS kWh/a



Energy balance [kWh/a]

Speed setting	Total period	Heating period	Cooling period
Vent. interzone	20,8	0,3	0
Solar gains total	139,8	32,2	0
Solar gains convective	14	3,2	0
Opaque areas	166,4	6,8	0
Int. gains rad.	212,4	12,1	0
Int. gains conv.	424,8	24,1	0
Heating	261,9	261,9	0
Windows	83,4	25,1	0
Opaque areas	141,1	76,4	0
Thermal bridges	94	27,5	0
Ventilation interzone	132,9	48,9	0
Ventilation	436,8	118,5	0

Case 1/Zone 1: Quality of indoor environment in % of time in four categories (prEN 15251:2006)

Percentage	4	13	8	75
Thermal environment	I	II	III	IV
Percentage	92			8
Indoor air quality	I			II

Case 1/Zone 1: Heat gain/loss - Total calculation period [kWh]

Nr.	Component	Gain	Loss
1	Component 1: Yttervegg soverom sør	0	94
2	Component 2: Vindu Sov Sør	140	83
3	Component 3: Vegg mellom leilighet	81	16
4	Component 4: Himling	52	12
5	Component 5: Gulv	29	78
6	Component 7: Vegg mellom sov sør og stue	58	9
7	Component 8: Vegg mellom sov sør og bad	12	2
8	Component 9: Vegg mellom sov sør og bad	15	3
9	Component 10: Vegg massivtre mellom sov sør og bad	2	11

Case 1/Zone 1: Heat gain/loss - heating period [kWh]

Nr.	Component	Gain	Loss
1	Component 1: Yttervegg soverom sør	0	38
2	Component 2: Vindu Sov Sør	32	25
3	Component 3: Vegg mellom leilighet	6	9
4	Component 4: Himling	4	6
5	Component 5: Gulv	2	19
6	Component 7: Vegg mellom sov sør og stue	3	8
7	Component 8: Vegg mellom sov sør og bad	1	2
8	Component 9: Vegg mellom sov sør og bad	1	2
9	Component 10: Vegg massivtre mellom sov sør og bad	0	4

Case 1/Zone 1/Component 1: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Scandinavian spruce transverse direction II	2,1	-14,3 (0)	36,1 (0)	8,4
Air Layer 40 mm	3,6	-12,8 (0,119)	35,2 (0,119)	8,8
Air Layer 40 mm	2,7	-11,6 (0,119)	34,8 (0,119)	9,2
Mineral Wool (heat cond.: 0,04 W/mK)	15	-10,6 (0,119)	34,5 (0,119)	15,2
Stora Enso CLT	10	14,2 (0,119)	32,7 (10)	22,2
Water content [kg/m³]				
Scandinavian spruce transverse direction II	2,1	12,185 (0)	112,481 (1,981)	56,366
Air Layer 40 mm	3,6	0,724 (0,119)	20,627 (0,119)	3,641
Air Layer 40 mm	2,7	0,727 (2,581)	7,172 (0,119)	2,597
Mineral Wool (heat cond.: 0,04 W/mK)	15	0,137 (14,881)	5,026 (0,119)	0,731
Stora Enso CLT	10	13,775 (10)	63,014 (4,559)	38,853

Case 1/Zone 1/Component 1: U-effective [W/m²K] (theoretical value 0,186)

Orientation (area)	Total calc. time	Heating period	Cooling period
SE (A135°, 4,27 m²)	0,147	0,205	

Case 1/Zone 1/Component 1: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Total incident				
SE (A135°, 4,27 m²)	651565,4	0	669,8	74,4
Absorbed				
SE (A135°, 4,27 m²)	260626,2	0	267,9	29,8
Interior surface (including radiant source)				
SE (A135°, 4,27 m²)	2780,9	0	4,1	0,3

Case 1/Zone 1/Component 1, Shading factors (diffuse radiation)

SE (A135°, 4,27 m²)	1
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Case 1/Zone 1/Component 1, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
SE (A135°, 4,27 m²)	6	0	-1,79	0	1,62	-3,4	-3,41

Case 1/Zone 1/Component 2: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Total incident				
SE (A135°, 0,74 m²)	651565,4	0	669,8	74,4
Interior surface (including radiant source)				
SE (A135°, 0,74 m²)	2780,9	0	4,1	0,3

Case 1/Zone 1/Component 2, Shading factors (diffuse radiation)

SE (A135°, 0,74 m²)	1
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Case 1/Zone 1/Component 3: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Stora Enso CLT	10	18,8 (0,239)	32,7 (0)	23,9
Mineral Wool (heat cond.: 0,04 W/mK)	10	19,4 (9,893)	32,2 (0,107)	23,9
Stora Enso CLT	10	18,8 (9,761)	32,7 (10)	23,9
Water content [kg/m³]				
Stora Enso CLT	10	13,137 (0)	63,029 (9,893)	46,927
Mineral Wool (heat cond.: 0,04 W/mK)	10	0,681 (9,893)	1,792 (5,549)	1,159
Stora Enso CLT	10	13,137 (10)	63,029 (0,107)	46,927

Case 1/Zone 1/Component 3: U-effective [W/m²K] (theoretical value 0,212)

Orientation (area)	Total calc. time	Heating period	Cooling period
NE (A45°, 11,28 m²)			

Case 1/Zone 1/Component 3: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
NE (A45°, 11,28 m²)	2780,9	0	4,1	0,3

Case 1/Zone 1/Component 3, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
NE (A45°, 11,28 m²)	0	0	-2,41	0	2,45	-4,9	-4,86

Case 1/Zone 1/Component 4: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Linoleum nach DIN 18171	0,3	19 (0)	32,3 (0)	23,9
Cement Paste w/c 0,6	4	19 (0,101)	32,2 (0,101)	23,9
Cement Plaster (stucco, A-value: 0.51 kg/m²h0.5)	2	19,1 (0,101)	32,2 (0,101)	23,9
Wood-Fibre Insulation Board	2	19,2 (0,101)	32,1 (0,101)	23,9
Shingle	10	19,8 (0,101)	31,5 (0,101)	23,9
Stora Enso CLT	10	18,9 (9,778)	32,6 (10)	23,9
Water content [kg/m³]				
Linoleum nach DIN 18171	0,3	0,007 (0)	0,123 (0,24)	0,022
Cement Paste w/c 0,6	4	48,618 (0,101)	200,002 (3,899)	102,354
Cement Plaster (stucco, A-value: 0.51 kg/m²h0.5)	2	5,672 (0,101)	35,651 (1,899)	15,005
Wood-Fibre Insulation Board	2	6,14 (0,101)	19,2 (1,899)	11,32
Shingle	10	0,089 (0,101)	0,586 (0,101)	0,265
Stora Enso CLT	10	12,988 (10)	63,142 (0,101)	44,105

Case 1/Zone 1/Component 4: U-effective [W/m²K] (theoretical value 0,53)

Orientation (area)	Total calc. time	Heating period	Cooling period
horizontal (A0°, 7,27 m²)			

Case 1/Zone 1/Component 4: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
horizontal (A0°, 7,27 m²)	2780,9	0	4,1	0,3

Case 1/Zone 1/Component 4, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
horizontal (A0°, 7,27 m²)	0	0	-6,6	0	2,29	-8,89	-8,9

Case 1/Zone 1/Component 5: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	2 (0)	17,2 (9,766)	5,9
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	5,6 (0,234)	19,6 (9,766)	9,6
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	25	9 (0,234)	27 (24,766)	15,8
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	17,2 (0,234)	31,7 (9,766)	21,9
PE-Membrane 0,2 mm (sd = 87 m)	0,2	19,6 (0,033)	31,8 (0,167)	23,6
Concrete w/c 0,5	10	19,5 (9,766)	32 (9,766)	23,7
Linoleum nach DIN 18171	0,3	19,5 (0,3)	32 (0,3)	23,7
Water content [kg/m³]				
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	1,785 (9,266)	44,783 (0)	4,399
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	1,785 (5,51)	2,98 (0,234)	2,189
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	25	0,628 (24,766)	2,196 (0,234)	1,586
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	0,428 (9,766)	1,802 (0,234)	0,878
PE-Membrane 0,2 mm (sd = 87 m)	0,2	0,001 (0,033)	0,002 (0,033)	0,001
Concrete w/c 0,5	10	23,789 (9,766)	67,522 (0,234)	55,714
Linoleum nach DIN 18171	0,3	0,007 (0,3)	0,093 (0,06)	0,022

Case 1/Zone 1/Component 5: U-effective [W/m²K] (theoretical value 0,071)

Orientation (area)	Total calc. time	Heating period	Cooling period
horizontal (A0°, 7,27 m²)	0,039	0,063	

Case 1/Zone 1/Component 5: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
horizontal (A0°, 7,27 m²)	2780,9	0	4,1	0,3

Case 1/Zone 1/Component 5, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
horizontal (A0°, 7,27 m²)	0	0	0,11	0	1,8	-1,67	-1,69

Case 1/Zone 1/Component 7: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Gypsum Plaster	1,3	19,6 (1,265)	34,3 (0)	23,8
Mineral Wool (heat cond.: 0,04 W/mK)	7,3	18,5 (4,668)	34,1 (0,035)	23,9
Gypsum Plaster	1,3	18,8 (0,035)	33 (1,3)	24
Water content [kg/m³]				
Gypsum Plaster	1,3	0,256 (1,265)	1,701 (1,265)	0,55
Mineral Wool (heat cond.: 0,04 W/mK)	7,3	0,07 (7,265)	1,78 (3,809)	0,206
Gypsum Plaster	1,3	0,222 (1,3)	1,71 (0,035)	0,534

Case 1/Zone 1/Component 7: U-effective [W/m²K] (theoretical value 0,451)

Orientation (area)	Total calc. time	Heating period	Cooling period
SW (A225°, 7,63 m²)	-2,234	0,315	

Case 1/Zone 1/Component 7: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
SW (A225°, 7,63 m²)	2780,9	0	4,1	0,3

Case 1/Zone 1/Component 7, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
SW (A225°, 7,63 m²)	0	0,11	0,21	0	0,47	-0,15	-0,15

Case 1/Zone 1/Component 8: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Spruce, radial	1,9	18,9 (0)	31 (0)	22,7
Air Layer 25 mm	2,3	19,3 (0,074)	31 (2,226)	22,7
60 minute Building Paper	0,1	19,3 (0,017)	31 (0,083)	22,8
Mineral Wool (heat cond.: 0,04 W/mK)	15	18,8 (14,926)	32,8 (14,926)	23,3
PE-Membrane 0,15 mm (sd = 70 m)	0,1	18,8 (0,083)	32,8 (0,083)	23,9
Gypsum Board	1,2	18,8 (0,372)	32,9 (1,2)	23,9
Water content [kg/m³]				
Spruce, radial	1,9	36,479 (0)	81,952 (1,826)	46,642
Air Layer 25 mm	2,3	0,356 (2,226)	2,028 (0,074)	0,681
60 minute Building Paper	0,1	0 (0,083)	0,002 (0,083)	0,001
Mineral Wool (heat cond.: 0,04 W/mK)	15	0,292 (14,926)	1,93 (0,074)	0,601
PE-Membrane 0,15 mm (sd = 70 m)	0,1	0 (0,083)	0,002 (0,017)	0
Gypsum Board	1,2	0,879 (1,2)	6,12 (0,074)	2,117

Case 1/Zone 1/Component 8: U-effective [W/m²K] (theoretical value 0,226)

Orientation (area)	Total calc. time	Heating period	Cooling period
NW (A315°, 2,2 m²)	-0,392	0,154	

Case 1/Zone 1/Component 8: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
NW (A315°, 2,2 m²)	2780,9	0	4,1	0,3

Case 1/Zone 1/Component 8, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap.	diff.	cap.	diff.	water	moisture

Case 1/Zone 1/Component 9: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Spruce, radial	1,9	18,9 (0)	31 (0)	22,7
Air Layer 25 mm	2,3	19,3 (0,074)	31 (2,226)	22,7
60 minute Building Paper	0,1	19,3 (0,017)	31 (0,083)	22,8
Mineral Wool (heat cond.: 0,04 W/mK)	15	18,8 (14,926)	32,8 (14,926)	23,3
PE-Membrane 0,15 mm (sd = 70 m)	0,1	18,8 (0,083)	32,8 (0,083)	23,9
Gypsum Board	1,2	18,8 (0,372)	32,9 (1,2)	23,9
Water content [kg/m³]				
Spruce, radial	1,9	36,479 (0)	81,952 (1,826)	46,642
Air Layer 25 mm	2,3	0,356 (2,226)	2,028 (0,074)	0,681
60 minute Building Paper	0,1	0 (0,083)	0,002 (0,083)	0,001
Mineral Wool (heat cond.: 0,04 W/mK)	15	0,292 (14,926)	1,93 (0,074)	0,601
PE-Membrane 0,15 mm (sd = 70 m)	0,1	0 (0,083)	0,002 (0,017)	0
Gypsum Board	1,2	0,879 (1,2)	6,12 (0,074)	2,117

Case 1/Zone 1/Component 9: U-effective [W/m²K] (theoretical value 0,226)

Orientation (area)	Total calc. time	Heating period	Cooling period
NW (A315°, 2,8 m²)	-0,392	0,154	

Case 1/Zone 1/Component 9: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
NW (A315°, 2,8 m²)	2780,9	0	4,1	0,3

Case 1/Zone 1/Component 9, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
NW (A315°, 2,8 m²)	0	-0,01	-0,91	0	0,1	-1,05	-1,02

Case 1/Zone 1/Component 10: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Stora Enso CLT	10	18,8 (9,768)	32,6 (10)	23,3
Water content [kg/m³]				
Stora Enso CLT	10	13,148 (10)	63,003 (5,776)	38,76

Case 1/Zone 1/Component 10: U-effective [W/m²K] (theoretical value 0,781)

Orientation (area)	Total calc. time	Heating period	Cooling period
SW (A225°, 1,79 m²)	0,407	0,989	

Case 1/Zone 1/Component 10: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
SW (A225°, 1,79 m²)	2780,9	0	4,1	0,3

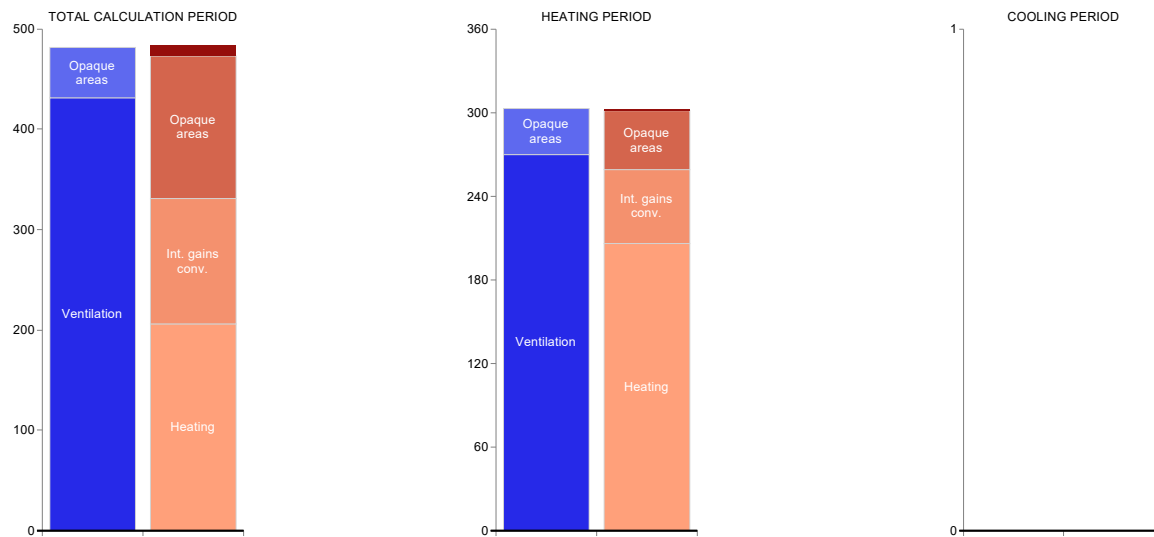
Case 1/Zone 1/Component 10, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
SW (A225°, 1,79 m²)	0	0	-1,36	0	1,77	-3,13	-3,12

Case 1/Zone 2: Main results

Speed setting			Value
Heating period [d]			141
Cooling period [d]			0
Heating demand [kWh]			206
Cooling demand [kWh]			0
Humidification demand [kg]			0
Dehumidification demand [kg]			638
Min/Max/Mean values			
Speed setting	Min	Max	Mean
Interior temperature [°C]	20	31	22,6
Interior relative humidity [%]	32,4	55	44,3
Heating load [kW]	0	0,7	0
Cooling load [kW]	0	0	0
Humidification [kg/h]	0	0	0
Dehumidification [kg/h]	-1,7	0	-0,1

ENERGY BALANCE / CONVECTIVE FLOWS kWh/a



Energy balance [kWh/a]

Speed setting	Total period	Heating period	Cooling period
Vent. interzone	11,1	1,1	0
Ventilation	0	0	0
Opaque areas	141,3	42,5	0
Int. gains rad.	63,8	26,8	0
Int. gains conv.	125,4	52,7	0
Heating	206	206	0
Opaque areas	50,3	33,1	0
Ventilation interzone	0	0	0
Ventilation	431,4	269,5	0

Case 1/Zone 2: Quality of indoor environment in % of time in four categories (prEN 15251:2006)

Table 12: 2.1. Quality of indoor environment in % of time in four categories (year 1920-2020)					
Percentage	10	8	6	76	
Thermal environment	I	II	III	IV	
Percentage	69			12	7
Indoor air quality	I			II	III
				IV	

Case 1/Zone 2: Heat gain/loss - Total calculation period [kWh]

Nr.	Component	Gain	Loss
1	Component 1: Vegg bad mot sov nord	22	6
2	Component 2: Vegg mellom leilighet	19	17
3	Component 3: Himling	18	17
4	Component 4: Gulv	3	64
5	Component 5: Dør bad mot stue	27	1
6	Component 6: vegg bad mot stue	27	2
7	Component 7: vegg bad mot stue	5	0
8	Component 8: vegg bad mot stue	41	3
9	Z.1: Component 8: Vegg mellom sov sør og bad	10	1
10	Z.1: Component 9: Vegg mellom sov sør og bad	13	2
11	Z.1: Component 10: Vegg massivtre mellom sov sør og bad	21	0

Case 1/Zone 2: Heat gain/loss - heating period [kWh]

Nr.	Component	Gain	Loss
1	Component 1: Vegg bad mot sov nord	7	3
2	Component 2: Vegg mellom leilighet	8	7
3	Component 3: Himling	8	6
4	Component 4: Gulv	0	19
5	Component 5: Dør bad mot stue	3	1
6	Component 6: vegg bad mot stue	4	2
7	Component 7: vegg bad mot stue	1	0
8	Component 8: vegg bad mot stue	6	2
9	Z.1: Component 8: Vegg mellom sov sør og bad	3	1
10	Z.1: Component 9: Vegg mellom sov sør og bad	4	1
11	Z.1: Component 10: Vegg massivtre mellom sov sør og bad	6	0

Case 1/Zone 2/Component 1: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Spruce, radial	1,9	19,4 (0)	32,7 (0)	23,2
Air Layer 25 mm	2,3	19,6 (0,074)	32,5 (0,074)	23,2
60 minute Building Paper	0,1	19,6 (0,017)	32,4 (0,017)	23,2
Mineral Wool (heat cond.: 0,04 W/mK)	15	19,4 (14,926)	32,4 (0,074)	22,9
PE-Membrane 0,15 mm (sd = 70 m)	0,1	19,4 (0,083)	31,1 (0,083)	22,6
Gypsum Board	1,2	19,4 (0,524)	31,1 (1,2)	22,6
Water content [kg/m³]				
Spruce, radial	1,9	20,311 (0)	80,242 (1,826)	39,891
Air Layer 25 mm	2,3	0,166 (0,074)	1,898 (0,074)	0,484
60 minute Building Paper	0,1	0 (0,083)	0,002 (0,083)	0
Mineral Wool (heat cond.: 0,04 W/mK)	15	0,159 (0,074)	1,831 (14,926)	0,476
PE-Membrane 0,15 mm (sd = 70 m)	0,1	0 (0,017)	0,002 (0,017)	0
Gypsum Board	1,2	2,36 (1,2)	5,967 (0,074)	3,183

Case 1/Zone 2/Component 1: U-effective [W/m²K] (theoretical value 0,226)

Orientation (area)	Total calc. time	Heating period	Cooling period
SE (A135°, 5,49 m²)	0,548	1,893	

Case 1/Zone 2/Component 1: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
SE (A135°, 5,49 m²)	0	0	0	0

Case 1/Zone 2/Component 1, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
SE (A135°, 5,49 m²)	0	-0,01	-1,12	0	0,03	-1,19	-1,16

Case 1/Zone 2/Component 2: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Stora Enso CLT	10	19 (0)	30,9 (0)	22,6
Mineral Wool (heat cond.: 0,04 W/mK)	10	19,7 (0,107)	30,3 (0,107)	22,5
Stora Enso CLT	10	19 (10)	30,9 (10)	22,6
Water content [kg/m³]				
Stora Enso CLT	10	28,025 (0)	63,015 (9,893)	50,06
Mineral Wool (heat cond.: 0,04 W/mK)	10	0,817 (9,893)	1,79 (9,893)	1,25
Stora Enso CLT	10	28,025 (10)	63,015 (0,107)	50,06

Case 1/Zone 2/Component 2: U-effective [W/m²K] (theoretical value 0,212)

Orientation (area)	Total calc. time	Heating period	Cooling period
NE (A45°, 6,72 m²)			

Case 1/Zone 2/Component 2: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
NE (A45°, 6,72 m²)	0	0	0	0

Case 1/Zone 2/Component 2, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
NE (A45°, 6,72 m²)	1	0	-1,95	0	1,98	-3,96	-3,94

Case 1/Zone 2/Component 3: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Linoleum nach DIN 18171	0,3	19,6 (0,24)	30,4 (0)	22,6
Cement Paste w/c 0,6	4	19,6 (0,323)	30,3 (0,101)	22,6
Cement Plaster (stucco, A-value: 0.51 kg/m ² h0.5)	2	19,6 (0,101)	30,2 (0,101)	22,6
Wood-Fibre Insulation Board	2	19,6 (0,101)	30,1 (0,101)	22,6
Shingle	10	19,8 (0,101)	29,7 (0,101)	22,5
Stora Enso CLT	10	19 (10)	30,8 (10)	22,6
Water content [kg/m ³]				
Linoleum nach DIN 18171	0,3	0,024 (0)	0,091 (0,24)	0,04
Cement Paste w/c 0,6	4	90,209 (0,101)	200,02 (3,899)	125,717
Cement Plaster (stucco, A-value: 0.51 kg/m ² h0.5)	2	9,663 (0,101)	35,443 (1,899)	19,625
Wood-Fibre Insulation Board	2	8,764 (0,101)	19,083 (0,101)	13,997
Shingle	10	0,156 (0,101)	0,569 (0,101)	0,332
Stora Enso CLT	10	27,901 (10)	63 (0,586)	48,696

Case 1/Zone 2/Component 3: U-effective [W/m²K] (theoretical value 0,53)

Orientation (area)	Total calc. time	Heating period	Cooling period
horizontal (A0°, 5,48 m ²)			

Case 1/Zone 2/Component 3: Solar radiation

Orientation (area)	Total sum [Wh/m ²]	Min. [W/m ²]	Max. [W/m ²]	Mean [W/m ²]
Interior surface (including radiant source)				
horizontal (A0°, 5,48 m ²)	0	0	0	0

Case 1/Zone 2/Component 3, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m ²]				Balance [kg/m ²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
horizontal (A0°, 5,48 m ²)	1	0	-5,03	0	1,91	-6,94	-6,94

Case 1/Zone 2/Component 4: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	2 (0)	17,2 (9,766)	5,8
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	5,4 (0,234)	19,6 (9,766)	9,2
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	25	8,7 (0,234)	25,4 (24,766)	15
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	16,6 (0,234)	29,7 (9,766)	20,7
PE-Membrane 0,2 mm (sd = 87 m)	0,2	19,6 (0,033)	29,8 (0,167)	22,3
Concrete w/c 0,5	10	19,6 (0,234)	30 (9,766)	22,3
Linoleum nach DIN 18171	0,3	19,7 (0,06)	30 (0,3)	22,4
Water content [kg/m³]				
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	1,785 (9,266)	44,785 (0)	4,371
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	1,785 (5,51)	2,917 (0,234)	2,157
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	25	0,692 (24,766)	2,168 (0,234)	1,619
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	0,471 (9,766)	1,801 (0,234)	0,932
PE-Membrane 0,2 mm (sd = 87 m)	0,2	0,001 (0,033)	0,002 (0,033)	0,001
Concrete w/c 0,5	10	37,414 (9,766)	67,52 (0,234)	58,893
Linoleum nach DIN 18171	0,3	0,024 (0,3)	0,059 (0,06)	0,04

Case 1/Zone 2/Component 4: U-effective [W/m²K] (theoretical value 0,071)

Orientation (area)	Total calc. time	Heating period	Cooling period
horizontal (A0°, 5,48 m²)	0,069	0,06	

Case 1/Zone 2/Component 4: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
horizontal (A0°, 5,48 m²)	0	0	0	0

Case 1/Zone 2/Component 4, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
horizontal (A0°, 5,48 m²)	0	0	0,13	0	1,32	-1,17	-1,19

Case 1/Zone 2/Component 5: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Softwood	5	19,2 (4,925)	33,8 (0)	23,2
Water content [kg/m³]				
Softwood	5	9,41 (0)	59,998 (2,419)	27,069

Case 1/Zone 2/Component 5: U-effective [W/m²K] (theoretical value 1,226)

Orientation (area)	Total calc. time	Heating period	Cooling period
NE (A45°, 1,86 m²)	1,639	2,388	

Case 1/Zone 2/Component 5: Solar radiation

Orientation (area)	Total sum [Wh/m ²]	Min. [W/m ²]	Max. [W/m ²]	Mean [W/m ²]
Interior surface (including radiant source)				
NE (A45°, 1,86 m ²)	0	0	0	0

Case 1/Zone 2/Component 5, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m ²]				Balance [kg/m ²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
NE (A45°, 1,86 m ²)	0	0	-1,28	0	0,53	-1,82	-1,81

Case 1/Zone 2/Component 6: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Stora Enso CLT	10	19,2 (9,927)	33,9 (0)	23,1
Water content [kg/m ³]				
Stora Enso CLT	10	15,462 (0)	62,999 (5,162)	38,957

Case 1/Zone 2/Component 6: U-effective [W/m²K] (theoretical value 0,781)

Orientation (area)	Total calc. time	Heating period	Cooling period
SW (A225°, 2,61 m ²)	1,115	1,724	

Case 1/Zone 2/Component 6: Solar radiation

Orientation (area)	Total sum [Wh/m ²]	Min. [W/m ²]	Max. [W/m ²]	Mean [W/m ²]
Interior surface (including radiant source)				
SW (A225°, 2,61 m ²)	0	0	0	0

Case 1/Zone 2/Component 6, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m ²]				Balance [kg/m ²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
SW (A225°, 2,61 m ²)	0	0	-1,73	0	1,35	-3,09	-3,08

Case 1/Zone 2/Component 7: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Stora Enso CLT	10	19,2 (9,927)	33,9 (0)	23,1
Water content [kg/m ³]				
Stora Enso CLT	10	15,462 (0)	62,999 (5,162)	38,957

Case 1/Zone 2/Component 7: U-effective [W/m²K] (theoretical value 0,781)

Orientation (area)	Total calc. time	Heating period	Cooling period
NW (A315°, 0,49 m ²)	1,115	1,724	

Case 1/Zone 2/Component 7: Solar radiation

Orientation (area)	Total sum [Wh/m ²]	Min. [W/m ²]	Max. [W/m ²]	Mean [W/m ²]
Interior surface (including radiant source)				
NW (A315°, 0,49 m ²)	0	0	0	0

Case 1/Zone 2/Component 7, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m ²]				Balance [kg/m ²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
NW (A315°, 0,49 m ²)	0	0	-1,73	0	1,35	-3,09	-3,08

Case 1/Zone 2/Component 8: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Stora Enso CLT	10	19,2 (9,927)	33,9 (0)	23,1
Water content [kg/m ³]				
Stora Enso CLT	10	15,462 (0)	62,999 (5,162)	38,957

Case 1/Zone 2/Component 8: U-effective [W/m²K] (theoretical value 0,781)

Orientation (area)	Total calc. time	Heating period	Cooling period
NE (A45°, 4,04 m ²)	1,115	1,724	

Case 1/Zone 2/Component 8: Solar radiation

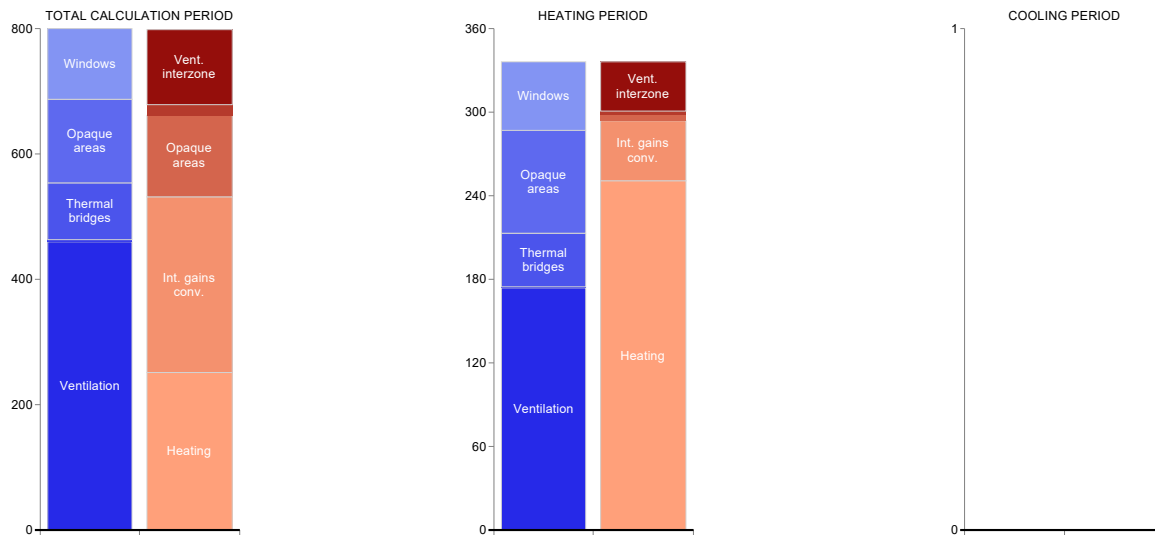
Orientation (area)	Total sum [Wh/m ²]	Min. [W/m ²]	Max. [W/m ²]	Mean [W/m ²]
Interior surface (including radiant source)				
NE (A45°, 4,04 m ²)	0	0	0	0

Case 1/Zone 2/Component 8, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m ²]				Balance [kg/m ²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
NE (A45°, 4,04 m ²)	0	0	-1,73	0	1,35	-3,09	-3,08

Case 1/Zone 3: Main results

Speed setting			Value
Heating period [d]			123
Cooling period [d]			0
Heating demand [kWh]			250,9
Cooling demand [kWh]			0
Humidification demand [kg]			0
Dehumidification demand [kg]			0
Min/Max/Mean values			
Speed setting	Min	Max	Mean
Interior temperature [°C]	20	32,7	23,2
Interior relative humidity [%]	13,1	63,6	30,6
Heating load [kW]	0	0,2	0
Cooling load [kW]	0	0	0
Humidification [kg/h]	0	0	0
Dehumidification [kg/h]	0	0	0

ENERGY BALANCE / CONVECTIVE FLOWS kWh/a

Energy balance [kWh/a]

Speed setting	Total period	Heating period	Cooling period
Vent. interzone	118,4	35,6	0
Solar gains total	186	17,1	0
Solar gains convective	18,6	1,7	0
Opaque areas	129	4,8	0
Int. gains rad.	140,2	21,4	0
Int. gains conv.	280,4	42,7	0
Heating	250,9	250,9	0
Windows	112,4	48,8	0
Opaque areas	133,7	74,1	0
Thermal bridges	90,2	38,5	0
Ventilation interzone	3	0,6	0
Ventilation	459,4	173,7	0

Case 1/Zone 3: Quality of indoor environment in % of time in four categories (prEN 15251:2006)

Percentage	6	9	5	79
Thermal environment	I	II	III	IV
Percentage	88			12
Indoor air quality	I			II

Case 1/Zone 3: Heat gain/loss - Total calculation period [kWh]

Nr.	Component	Gain	Loss
1	Component 1: Vegg mellom sov nord og stue	78	2
2	Component 2: Vegg mellom leilighet	55	10
3	Component 3: Yttervegg soverom nord	0	120
4	Component 4: Vindu yttervegg soverom nord	186	112
5	Component 5: Himling	48	11
6	Component 6: Gulv	15	93
7	Z.2: Component 1: Vegg bad mot sov nord	23	4
8	Z.4: Component 5: Vegg mellom stue og soverom nord	16	0

Case 1/Zone 3: Heat gain/loss - heating period [kWh]

Nr.	Component	Gain	Loss
1	Component 1: Vegg mellom sov nord og stue	10	1
2	Component 2: Vegg mellom leilighet	7	5
3	Component 3: Yttervegg soverom nord	0	62
4	Component 4: Vindu yttervegg soverom nord	17	49
5	Component 5: Himling	6	4
6	Component 6: Gulv	1	25
7	Z.2: Component 1: Vegg bad mot sov nord	3	2
8	Z.4: Component 5: Vegg mellom stue og soverom nord	0	0

Case 1/Zone 3/Component 1: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Gypsum Plaster	1,3	19,7 (1,265)	34,3 (0)	23,7
Mineral Wool (heat cond.: 0,04 W/mK)	7,3	18,9 (3,809)	34,2 (0,035)	23,5
Gypsum Plaster	1,3	19,7 (0,035)	32,8 (0,035)	23,3
Water content [kg/m³]				
Gypsum Plaster	1,3	0,261 (0)	1,705 (1,265)	0,551
Mineral Wool (heat cond.: 0,04 W/mK)	7,3	0,076 (7,265)	1,781 (3,491)	0,212
Gypsum Plaster	1,3	0,24 (1,3)	1,702 (0,035)	0,554

Case 1/Zone 3/Component 1: U-effective [W/m²K] (theoretical value 0,451)

Orientation (area)	Total calc. time	Heating period	Cooling period
SW (A225°, 9,41 m²)	2,327		
SE (A135°, 0,72 m²)	2,327		

Case 1/Zone 3/Component 1: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
SW (A225°, 9,41 m²)	3050,9	0	3,1	0,3
SE (A135°, 0,72 m²)	3050,9	0	3,1	0,3

Case 1/Zone 3/Component 1, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
SW (A225°, 9,41 m²)	0	0,1	0,24	0	0,49	-0,15	-0,15
SE (A135°, 0,72 m²)	0	0,1	0,24	0	0,49	-0,15	-0,15

Case 1/Zone 3/Component 2: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Stora Enso CLT	10	19,5 (0)	32,5 (0)	23,2
Mineral Wool (heat cond.: 0,04 W/mK)	10	19,6 (9,893)	31,9 (0,107)	23,2
Stora Enso CLT	10	19,5 (10)	32,5 (10)	23,2
Water content [kg/m³]				
Stora Enso CLT	10	14,159 (0)	63,013 (9,893)	47,41
Mineral Wool (heat cond.: 0,04 W/mK)	10	0,706 (9,893)	1,789 (5,549)	1,181
Stora Enso CLT	10	14,159 (10)	63,013 (0,107)	47,41

Case 1/Zone 3/Component 2: U-effective [W/m²K] (theoretical value 0,212)

Orientation (area)	Total calc. time	Heating period	Cooling period
NE (A45°, 11,49 m²)			

Case 1/Zone 3/Component 2: Solar radiation

Orientation (area)	Total sum [Wh/m ²]	Min. [W/m ²]	Max. [W/m ²]	Mean [W/m ²]
Interior surface (including radiant source)				
NE (A45°, 11,49 m ²)	3050,9	0	3,1	0,3

Case 1/Zone 3/Component 2, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m ²]				Balance [kg/m ²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
NE (A45°, 11,49 m ²)	0	0	-2,34	0	2,38	-4,76	-4,72

Case 1/Zone 3/Component 3: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Scandinavian spruce transverse direction II	2,1	-14,3 (0)	35,6 (0)	8
Air Layer 40 mm	3,6	-12,8 (0,119)	35 (0,119)	8,4
Air Layer 40 mm	2,7	-11,7 (0,119)	34,7 (0,119)	8,8
Mineral Wool (heat cond.: 0,04 W/mK)	15	-10,7 (0,119)	34,5 (0,119)	14,7
Stora Enso CLT	10	13,9 (0,119)	32,6 (10)	21,5
Water content [kg/m ³]				
Scandinavian spruce transverse direction II	2,1	14,733 (0)	113,175 (0)	57,339
Air Layer 40 mm	3,6	0,743 (0,119)	20,43 (0,119)	3,712
Air Layer 40 mm	2,7	0,754 (0,119)	7,159 (0,119)	2,671
Mineral Wool (heat cond.: 0,04 W/mK)	15	0,145 (14,881)	5,031 (0,119)	0,757
Stora Enso CLT	10	14,848 (10)	63,007 (4,559)	39,443

Case 1/Zone 3/Component 3: U-effective [W/m²K] (theoretical value 0,186)

Orientation (area)	Total calc. time	Heating period	Cooling period
NW (A315°, 5,19 m ²)	0,161	0,195	

Case 1/Zone 3/Component 3: Solar radiation

Orientation (area)	Total sum [Wh/m ²]	Min. [W/m ²]	Max. [W/m ²]	Mean [W/m ²]
Total incident				
NW (A315°, 5,19 m ²)	441556,4	0	444,5	50,4
Absorbed				
NW (A315°, 5,19 m ²)	176622,5	0	177,8	20,2
Interior surface (including radiant source)				
NW (A315°, 5,19 m ²)	3050,9	0	3,1	0,3

Case 1/Zone 3/Component 3, Shading factors (diffuse radiation)

NW (A315°, 5,19 m ²)	1
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Case 1/Zone 3/Component 3, numerical quality

Component	Number of	Integral of fluxes [kg/m ²]	Balance [kg/m ²]
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Case 1/Zone 3/Component 4: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Total incident				
NW (A315°, 1,02 m²)	441556,4	0	444,5	50,4
Interior surface (including radiant source)				
NW (A315°, 1,02 m²)	3050,9	0	3,1	0,3

Case 1/Zone 3/Component 4, Shading factors (diffuse radiation)

NW (A315°, 1,02 m²)	1
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Case 1/Zone 3/Component 5: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Linoleum nach DIN 18171	0,3	19,5 (0,24)	32,1 (0)	23,2
Cement Paste w/c 0,6	4	19,5 (0,323)	31,9 (0,101)	23,2
Cement Plaster (stucco, A-value: 0.51 kg/m²h0.5)	2	19,5 (0,101)	31,8 (0,101)	23,2
Wood-Fibre Insulation Board	2	19,6 (0,101)	31,7 (0,101)	23,2
Shingle	10	19,7 (0,101)	31,1 (0,101)	23,2
Stora Enso CLT	10	19,5 (10)	32,4 (10)	23,2
Water content [kg/m³]				
Linoleum nach DIN 18171	0,3	0,008 (0)	0,124 (0,24)	0,023
Cement Paste w/c 0,6	4	49,665 (0,101)	200,025 (3,899)	105,033
Cement Plaster (stucco, A-value: 0.51 kg/m²h0.5)	2	6,054 (0,101)	35,526 (1,899)	15,658
Wood-Fibre Insulation Board	2	6,44 (0,101)	19,204 (1,899)	11,663
Shingle	10	0,097 (0,101)	0,586 (0,101)	0,275
Stora Enso CLT	10	14,025 (10)	63,023 (0,101)	44,788

Case 1/Zone 3/Component 5: U-effective [W/m²K] (theoretical value 0,53)

Orientation (area)	Total calc. time	Heating period	Cooling period
horizontal (A0°, 9,73 m²)			

Case 1/Zone 3/Component 5: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
horizontal (A0°, 9,73 m²)	3050,9	0	3,1	0,3

Case 1/Zone 3/Component 5, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
horizontal (A0°, 9,73 m²)	0	0	-6,42	0	2,24	-8,66	-8,66

Case 1/Zone 3/Component 6: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	2 (0)	17,2 (9,766)	5,8
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	5,4 (0,234)	19,6 (9,766)	9,4
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	25	8,7 (0,234)	26,8 (24,766)	15,4
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	16,6 (0,234)	31,4 (9,766)	21,3
PE-Membrane 0,2 mm (sd = 87 m)	0,2	19,6 (0,033)	31,5 (0,167)	22,9
Concrete w/c 0,5	10	19,6 (0,234)	31,7 (9,766)	23
Linoleum nach DIN 18171	0,3	19,6 (0,06)	31,8 (0,3)	23
Water content [kg/m³]				
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	1,785 (9,266)	44,784 (0)	4,385
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	1,785 (5,51)	2,952 (0,234)	2,174
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	25	0,66 (24,766)	2,19 (0,234)	1,601
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	0,452 (9,766)	1,801 (0,234)	0,906
PE-Membrane 0,2 mm (sd = 87 m)	0,2	0,001 (0,033)	0,002 (0,033)	0,001
Concrete w/c 0,5	10	24,217 (9,766)	67,521 (0,234)	56,173
Linoleum nach DIN 18171	0,3	0,008 (0,3)	0,095 (0,06)	0,023

Case 1/Zone 3/Component 6: U-effective [W/m²K] (theoretical value 0,071)

Orientation (area)	Total calc. time	Heating period	Cooling period
horizontal (A0°, 9,73 m²)	0,047	0,049	

Case 1/Zone 3/Component 6: Solar radiation

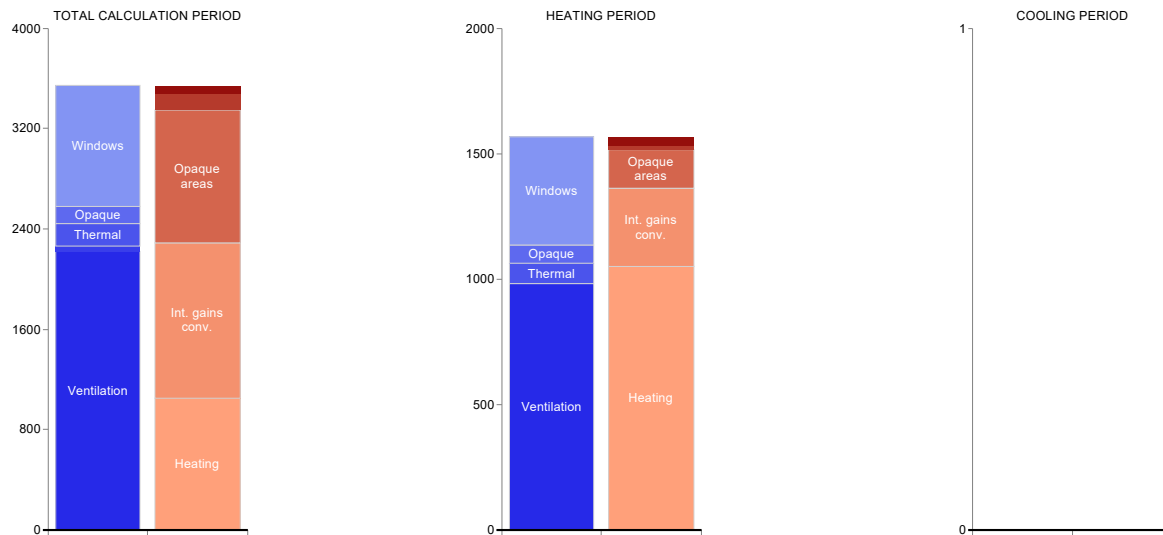
Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
horizontal (A0°, 9,73 m²)	3050,9	0	3,1	0,3

Case 1/Zone 3/Component 6, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
horizontal (A0°, 9,73 m²)	0	0	0,12	0	1,73	-1,59	-1,61

Case 1/Zone 4: Main results

Speed setting			Value
Heating period [d]			128,4
Cooling period [d]			0
Heating demand [kWh]			1050,8
Cooling demand [kWh]			0
Humidification demand [kg]			0
Dehumidification demand [kg]			0
Min/Max/Mean values			
Speed setting	Min	Max	Mean
Interior temperature [°C]	20	34,2	23,6
Interior relative humidity [%]	14,5	64,4	30,8
Heating load [kW]	0	1	0,1
Cooling load [kW]	0	0	0
Humidification [kg/h]	0	0	0
Dehumidification [kg/h]	0	0	0

ENERGY BALANCE / CONVECTIVE FLOWS kWh/a

Energy balance [kWh/a]

Speed setting	Total period	Heating period	Cooling period
Vent. interzone	61,9	36,7	0
Solar gains total	1254,4	139,6	0
Solar gains convective	125,4	14	0
Opaque areas	1059,1	154,2	0
Int. gains rad.	618,6	156,5	0
Int. gains conv.	1237,2	313	0
Heating	1050,8	1050,8	0
Windows	958,5	433,3	0
Opaque areas	138,1	71,1	0
Thermal bridges	184,5	81,4	0
Ventilation interzone	37,2	0,6	0
Ventilation	2222,7	982,6	0

Case 1/Zone 4: Quality of indoor environment in % of time in four categories (prEN 15251:2006)

Percentage	4	10	10	76
Thermal environment	I	II	III	IV
Percentage	40	22	35	4
Indoor air quality	I	II	III	IV

Case 1/Zone 4: Heat gain/loss - Total calculation period [kWh]

Nr.	Component	Gain	Loss
1	Component 1: Vegg mellom leiligheter	165	4
2	Component 2: Gulv	199	280
3	Component 3: Himling	338	14
4	Component 4: Vegg mellom stue og bod	582	0
5	Component 5: Vegg mellom stue og soverom nord	20	0
6	Component 6: Vindu yttervegg sør	552	314
7	Component 7: Yttervegg	0	39
8	Component 8: Yttervegg	1	104
9	Component 9: Yttervegg	0	44
10	Component 10: Yttervegg	1	62
11	Component 11: Yttervegg	0	38
12	Component 12: Vindu stue nord	702	645
13	Z.3: Component 1: Vegg mellom sov nord og stue	98	1
14	Z.1: Component 7: Vegg mellom sov sør og stue	96	0
15	Z.2: Component 5: Dør bad mot stue	5	8
16	Z.2: Component 6: vegg bad mot stue	9	5
17	Z.2: Component 7: vegg bad mot stue	2	1
18	Z.2: Component 8: vegg bad mot stue	14	8

Case 1/Zone 4: Heat gain/loss - heating period [kWh]

Nr.	Component	Gain	Loss
1	Component 1: Vegg mellom leiligheter	27	4
2	Component 2: Gulv	11	61
3	Component 3: Himling	55	10
4	Component 4: Vegg mellom stue og bod	184	0
5	Component 5: Vegg mellom stue og soverom nord	4	0
6	Component 6: Vindu yttervegg sør	75	142
7	Component 7: Yttervegg	0	24
8	Component 8: Yttervegg	0	66
9	Component 9: Yttervegg	0	28
10	Component 10: Yttervegg	0	38
11	Component 11: Yttervegg	0	24
12	Component 12: Vindu stue nord	64	292
13	Z.3: Component 1: Vegg mellom sov nord og stue	21	0
14	Z.1: Component 7: Vegg mellom sov sør og stue	26	0
15	Z.2: Component 5: Dør bad mot stue	3	1
16	Z.2: Component 6: vegg bad mot stue	4	1
17	Z.2: Component 7: vegg bad mot stue	1	0
18	Z.2: Component 8: vegg bad mot stue	6	1

Case 1/Zone 4/Component 1: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Stora Enso CLT	10	19,5 (0)	34,2 (0)	23,7
Mineral Wool (heat cond.: 0,04 W/mK)	10	19,7 (9,893)	33,2 (9,893)	23,6
Stora Enso CLT	10	19,5 (10)	34,2 (10)	23,7
Water content [kg/m³]				
Stora Enso CLT	10	15,558 (0)	63,012 (9,893)	47,143
Mineral Wool (heat cond.: 0,04 W/mK)	10	0,688 (0,107)	1,789 (9,893)	1,167
Stora Enso CLT	10	15,558 (10)	63,012 (0,107)	47,143

Case 1/Zone 4/Component 1: U-effective [W/m²K] (theoretical value 0,212)

Orientation (area)	Total calc. time	Heating period	Cooling period
SW (A225°, 16,35 m²)			

Case 1/Zone 4/Component 1: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
SW (A225°, 16,35 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 1, numerical quality

Component (part of component)	Number of convergence	Integral of fluxes [kg/m²]	Balance [kg/m²]

Case 1/Zone 4/Component 2: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	2 (0)	17,2 (9,766)	5,9
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	5,4 (0,234)	19,6 (9,766)	9,5
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	25	8,7 (0,234)	27,8 (24,766)	15,7
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	16,7 (0,234)	32,7 (9,766)	21,7
PE-Membrane 0,2 mm (sd = 87 m)	0,2	19,6 (0,033)	32,8 (0,167)	23,4
Concrete w/c 0,5	10	19,6 (0,234)	33 (9,766)	23,4
Linoleum nach DIN 18171	0,3	19,7 (0,06)	33,2 (0,3)	23,5
Water content [kg/m³]				
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	1,785 (9,266)	44,783 (0)	4,397
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	1,785 (5,51)	2,975 (0,234)	2,188
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	25	0,64 (24,766)	2,203 (0,234)	1,587
EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	10	0,441 (9,766)	1,801 (0,234)	0,887
PE-Membrane 0,2 mm (sd = 87 m)	0,2	0,001 (0,033)	0,002 (0,033)	0,001
Concrete w/c 0,5	10	24,284 (9,766)	67,52 (0,234)	55,948
Linoleum nach DIN 18171	0,3	0,009 (0,3)	0,098 (0,06)	0,023

Case 1/Zone 4/Component 2: U-effective [W/m²K] (theoretical value 0,071)

Orientation (area)	Total calc. time	Heating period	Cooling period
horizontal (A0°, 33,4 m²)	0,014	0,028	

Case 1/Zone 4/Component 2: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
horizontal (A0°, 33,4 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 2, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
horizontal (A0°, 33,4 m²)	0	0	0,11	0	1,75	-1,62	-1,64

Case 1/Zone 4/Component 3: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Linoleum nach DIN 18171	0,3	19,6 (0,24)	33,6 (0)	23,6
Cement Paste w/c 0,6	4	19,6 (0,323)	33,4 (0,101)	23,6
Cement Plaster (stucco, A-value: 0.51 kg/m ² h0.5)	2	19,6 (0,101)	33,3 (0,101)	23,6
Wood-Fibre Insulation Board	2	19,6 (0,101)	33,1 (0,101)	23,6
Shingle	10	19,8 (0,101)	32,2 (0,101)	23,6
Stora Enso CLT	10	19,5 (10)	34,1 (10)	23,6
Water content [kg/m ³]				
Linoleum nach DIN 18171	0,3	0,009 (0)	0,126 (0,24)	0,023
Cement Paste w/c 0,6	4	50,784 (0,101)	200,024 (3,899)	104,466
Cement Plaster (stucco, A-value: 0.51 kg/m ² h0.5)	2	5,988 (0,101)	35,441 (1,899)	15,442
Wood-Fibre Insulation Board	2	6,362 (0,101)	19,104 (1,899)	11,513
Shingle	10	0,095 (0,101)	0,575 (0,101)	0,271
Stora Enso CLT	10	15,429 (10)	63 (0,586)	44,421

Case 1/Zone 4/Component 3: U-effective [W/m²K] (theoretical value 0,53)

Orientation (area)	Total calc. time	Heating period	Cooling period
horizontal (A0°, 33,4 m ²)			

Case 1/Zone 4/Component 3: Solar radiation

Orientation (area)	Total sum [Wh/m ²]	Min. [W/m ²]	Max. [W/m ²]	Mean [W/m ²]
Interior surface (including radiant source)				
horizontal (A0°, 33,4 m ²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 3, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m ²]				Balance [kg/m ²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
horizontal (A0°, 33,4 m ²)	0	0	-6,42	0	2,26	-8,68	-8,68

Case 1/Zone 4/Component 4: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Gypsum Plaster	1,3	21,8 (1,265)	34,7 (0)	29,5
Mineral Wool (heat cond.: 0,04 W/mK)	7,3	19,8 (6,501)	34,5 (0,035)	26,9
Gypsum Plaster	1,3	19,9 (1,227)	34,4 (1,3)	24,2
Water content [kg/m ³]				
Gypsum Plaster	1,3	0,186 (1,265)	1,405 (1,265)	0,305
Mineral Wool (heat cond.: 0,04 W/mK)	7,3	0,053 (0,035)	1,785 (4,402)	0,134
Gypsum Plaster	1,3	0,254 (1,3)	1,728 (0,035)	0,509

Case 1/Zone 4/Component 4: U-effective [W/m²K] (theoretical value 0,451)

Orientation (area)	Total calc. time	Heating period	Cooling period
NE (A45°, 7,34 m²)	0,674	0,563	
NW (A315°, 3,98 m²)	0,674	0,563	
SE (A135°, 3,98 m²)	0,674	0,563	

Case 1/Zone 4/Component 4: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
NE (A45°, 7,34 m²)	7427,8	0	6,7	0,8
NW (A315°, 3,98 m²)	7427,8	0	6,7	0,8
SE (A135°, 3,98 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 4, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
NE (A45°, 7,34 m²)	0	-1,83	-3,47	0	-5,15	-0,16	-0,16
NW (A315°, 3,98 m²)	0	-1,83	-3,47	0	-5,15	-0,16	-0,16
SE (A135°, 3,98 m²)	0	-1,83	-3,47	0	-5,15	-0,16	-0,16

Case 1/Zone 4/Component 5: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Gypsum Plaster	1,3	19,7 (1,265)	32,8 (1,265)	23,3
Mineral Wool (heat cond.: 0,04 W/mK)	7,3	18,9 (3,491)	34,2 (7,265)	23,5
Gypsum Plaster	1,3	19,7 (0,035)	34,3 (1,3)	23,7
Water content [kg/m³]				
Gypsum Plaster	1,3	0,24 (0)	1,702 (1,265)	0,554
Mineral Wool (heat cond.: 0,04 W/mK)	7,3	0,076 (0,035)	1,781 (3,809)	0,212
Gypsum Plaster	1,3	0,261 (1,3)	1,705 (0,035)	0,551

Case 1/Zone 4/Component 5: U-effective [W/m²K] (theoretical value 0,451)

Orientation (area)	Total calc. time	Heating period	Cooling period
SW (A225°, 2,08 m²)	-2,978		

Case 1/Zone 4/Component 5: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Interior surface (including radiant source)				
SW (A225°, 2,08 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 5, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap.	diff.	cap.	diff.	water	moisture

Case 1/Zone 4/Component 6: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Total incident				
SE (A135°, 2,84 m²)	651565,4	0	669,8	74,4
Interior surface (including radiant source)				
SE (A135°, 2,84 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 6, Shading factors (diffuse radiation)

SE (A135°, 2,84 m²)	1
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Case 1/Zone 4/Component 7: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Scandinavian spruce transverse direction II	2,1	-14,3 (0)	35,7 (0)	8,2
Air Layer 40 mm	3,6	-12,8 (0,119)	34,8 (0,119)	8,6
Air Layer 40 mm	2,7	-11,6 (0,119)	34,3 (0,119)	9,1
Mineral Wool (heat cond.: 0,04 W/mK)	15	-10,7 (0,119)	34,1 (0,119)	15
Stora Enso CLT	10	13,9 (0,119)	34,1 (10)	21,9
Water content [kg/m³]				
Scandinavian spruce transverse direction II	2,1	12,359 (0)	116,035 (0)	56,672
Air Layer 40 mm	3,6	0,761 (3,481)	19,814 (0,119)	3,634
Air Layer 40 mm	2,7	0,74 (2,581)	7,134 (0,119)	2,626
Mineral Wool (heat cond.: 0,04 W/mK)	15	0,145 (14,881)	5,015 (0,119)	0,741
Stora Enso CLT	10	16,26 (10)	63,007 (4,559)	39,087

Case 1/Zone 4/Component 7: U-effective [W/m²K] (theoretical value 0,186)

Orientation (area)	Total calc. time	Heating period	Cooling period
SE (A135°, 2,16 m²)	0,121	0,174	

Case 1/Zone 4/Component 7: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Total incident				
SE (A135°, 2,16 m²)	551751,1	0	652,7	63
Absorbed				
SE (A135°, 2,16 m²)	220700,4	0	261,1	25,2
Interior surface (including radiant source)				
SE (A135°, 2,16 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 7, Shading factors (diffuse radiation)

SE (A135°, 2,16 m²)	0,777
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Case 1/Zone 4/Component 7, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
v							

Case 1/Zone 4/Component 8: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Scandinavian spruce transverse direction II	2,1	-14,3 (0)	37,9 (0)	8,3
Air Layer 40 mm	3,6	-12,8 (0,119)	36,8 (0,119)	8,7
Air Layer 40 mm	2,7	-11,6 (0,119)	36,3 (0,119)	9,1
Mineral Wool (heat cond.: 0,04 W/mK)	15	-10,6 (0,119)	36 (0,119)	15
Stora Enso CLT	10	13,9 (0,119)	34,2 (10)	21,9
Water content [kg/m³]				
Scandinavian spruce transverse direction II	2,1	11,197 (0)	114,71 (0)	56,41
Air Layer 40 mm	3,6	0,732 (3,481)	19,617 (0,119)	3,593
Air Layer 40 mm	2,7	0,716 (2,581)	7,141 (0,119)	2,609
Mineral Wool (heat cond.: 0,04 W/mK)	15	0,145 (14,881)	5,012 (0,119)	0,742
Stora Enso CLT	10	16,28 (10)	63,007 (4,559)	39,12

Case 1/Zone 4/Component 8: U-effective [W/m²K] (theoretical value 0,186)

Orientation (area)	Total calc. time	Heating period	Cooling period
SW (A217,2°, 5,85 m²)	0,12	0,173	

Case 1/Zone 4/Component 8: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Total incident				
SW (A217,2°, 5,85 m²)	592590	0	669,2	67,6
Absorbed				
SW (A217,2°, 5,85 m²)	237036	0	267,7	27,1
Interior surface (including radiant source)				
SW (A217,2°, 5,85 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 8, Shading factors (diffuse radiation)

SW (A217,2°, 5,85 m²)	0,828
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Case 1/Zone 4/Component 8, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
SW (A217,2°, 5,85 m²)	5	0	-1,78	0	1,58	-3,34	-3,36

Case 1/Zone 4/Component 9: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Scandinavian spruce transverse direction II	2,1	-14,3 (0)	36,1 (0)	8,4
Air Layer 40 mm	3,6	-12,8 (0,119)	35,2 (0,119)	8,8
Air Layer 40 mm	2,7	-11,6 (0,119)	34,9 (0,119)	9,2
Mineral Wool (heat cond.: 0,04 W/mK)	15	-10,7 (0,119)	34,6 (0,119)	15,1
Stora Enso CLT	10	13,9 (0,119)	34,1 (10)	22
Water content [kg/m³]				
Scandinavian spruce transverse direction II	2,1	12,182 (0)	111,465 (0)	56,169
Air Layer 40 mm	3,6	0,734 (3,481)	19,757 (0,119)	3,577
Air Layer 40 mm	2,7	0,716 (2,581)	7,132 (0,119)	2,589
Mineral Wool (heat cond.: 0,04 W/mK)	15	0,144 (14,881)	5,014 (0,119)	0,737
Stora Enso CLT	10	16,241 (10)	63,007 (4,559)	39,105

Case 1/Zone 4/Component 9: U-effective [W/m²K] (theoretical value 0,186)

Orientation (area)	Total calc. time	Heating period	Cooling period
SE (A135°, 2,5 m²)	0,119	0,173	

Case 1/Zone 4/Component 9: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Total incident				
SE (A135°, 2,5 m²)	651565,4	0	669,8	74,4
Absorbed				
SE (A135°, 2,5 m²)	260626,2	0	267,9	29,8
Interior surface (including radiant source)				
SE (A135°, 2,5 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 9, Shading factors (diffuse radiation)

SE (A135°, 2,5 m²)	1
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Case 1/Zone 4/Component 9, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
SE (A135°, 2,5 m²)	6	0	-1,78	0	1,58	-3,35	-3,37

Case 1/Zone 4/Component 10: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Scandinavian spruce transverse direction II	2,1	-14,3 (0)	35,7 (0)	8
Air Layer 40 mm	3,6	-12,8 (0,119)	35,1 (0,119)	8,4
Air Layer 40 mm	2,7	-11,6 (0,119)	34,8 (0,119)	8,9
Mineral Wool (heat cond.: 0,04 W/mK)	15	-10,7 (0,119)	34,6 (0,119)	14,9
Stora Enso CLT	10	13,9 (0,119)	34,1 (10)	21,9
Water content [kg/m³]				
Scandinavian spruce transverse direction II	2,1	14,728 (0)	114,136 (0)	57,373
Air Layer 40 mm	3,6	0,764 (0,119)	20,507 (0,119)	3,749
Air Layer 40 mm	2,7	0,772 (0,119)	7,162 (0,119)	2,679
Mineral Wool (heat cond.: 0,04 W/mK)	15	0,143 (14,881)	5,034 (0,119)	0,742
Stora Enso CLT	10	16,326 (10)	63,007 (4,559)	39,06

Case 1/Zone 4/Component 10: U-effective [W/m²K] (theoretical value 0,186)

Orientation (area)	Total calc. time	Heating period	Cooling period
NW (A315°, 3,38 m²)	0,123	0,175	

Case 1/Zone 4/Component 10: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Total incident				
NW (A315°, 3,38 m²)	441556,4	0	444,5	50,4
Absorbed				
NW (A315°, 3,38 m²)	176622,5	0	177,8	20,2
Interior surface (including radiant source)				
NW (A315°, 3,38 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 10, Shading factors (diffuse radiation)

NW (A315°, 3,38 m²)	1
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Case 1/Zone 4/Component 10, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
NW (A315°, 3,38 m²)	4	0	-1,77	0	1,57	-3,33	-3,35

Case 1/Zone 4/Component 11: Min/Max/Mean values

Layer	Thickn. [cm]	Min. (dist.[cm])	Max. (dist.[cm])	Mean
Temperature [°C]				
Scandinavian spruce transverse direction II	2,1	-14,3 (0)	35,6 (0)	8,1
Air Layer 40 mm	3,6	-12,8 (0,119)	34,7 (0,119)	8,6
Air Layer 40 mm	2,7	-11,6 (0,119)	34,2 (0,119)	9
Mineral Wool (heat cond.: 0,04 W/mK)	15	-10,7 (0,119)	34 (0,119)	15
Stora Enso CLT	10	13,9 (0,119)	34,1 (10)	21,9
Water content [kg/m³]				
Scandinavian spruce transverse direction II	2,1	12,397 (0)	117,042 (0)	56,788
Air Layer 40 mm	3,6	0,767 (3,481)	19,823 (0,119)	3,647
Air Layer 40 mm	2,7	0,746 (2,581)	7,134 (0,119)	2,635
Mineral Wool (heat cond.: 0,04 W/mK)	15	0,145 (14,881)	5,015 (0,119)	0,743
Stora Enso CLT	10	16,265 (10)	63,007 (4,559)	39,084

Case 1/Zone 4/Component 11: U-effective [W/m²K] (theoretical value 0,186)

Orientation (area)	Total calc. time	Heating period	Cooling period
SE (A135°, 2,12 m²)	0,122	0,174	

Case 1/Zone 4/Component 11: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Total incident				
SE (A135°, 2,12 m²)	529097,5	0	649	60,4
Absorbed				
SE (A135°, 2,12 m²)	211639	0	259,6	24,2
Interior surface (including radiant source)				
SE (A135°, 2,12 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 11, Shading factors (diffuse radiation)

SE (A135°, 2,12 m²)	0,728
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Case 1/Zone 4/Component 11, numerical quality

Component (part of component)	Number of convergence failures	Integral of fluxes [kg/m²]				Balance [kg/m²]	
		cap. outer	diff. outer	cap. interior	diff. interior	water content	moisture flow
SE (A135°, 2,12 m²)	2	0	-1,78	0	1,58	-3,34	-3,36

Case 1/Zone 4/Component 12: Solar radiation

Orientation (area)	Total sum [Wh/m²]	Min. [W/m²]	Max. [W/m²]	Mean [W/m²]
Total incident				
NW (A315°, 5,84 m²)	441556,4	0	444,5	50,4
Interior surface (including radiant source)				
NW (A315°, 5,84 m²)	7427,8	0	6,7	0,8

Case 1/Zone 4/Component 12, Shading factors (diffuse radiation)

NW (A315°, 5,84 m²)	1
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HVAC

System 1 (User defined): Sone 1, Input data

Zone	Share [-]				
	Space heating	Space cooling	Space ventilation	Air humidification	Air dehumidification
Zone 1: Soverom Sør	0,25		1		
Zone 2: Bad	0,25		0		
Zone 3: Soverom nord	0,25		0		
Zone 4: Stue/ Kjøkken	0,25		0		

Device 1 (User defined: Heating)

Max. heating power [kW]	50
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Device 2 (Mechanical ventilation: Ventilation)

HRV/ERV efficiency [-]	0,80
Effective moisture recovery efficiency [-]	0
Use optional climate for air exchange	No
Capacity of mechanical system [m³/h]	38

System 2 (User defined): Sone 2, Input data

Zone	Share [-]				
	Space heating	Space cooling	Space ventilation	Air humidification	Air dehumidification
Zone 1: Soverom Sør	0		0		0
Zone 2: Bad	1		1		1
Zone 3: Soverom nord	0		0		0
Zone 4: Stue/ Kjøkken	0		0		0

Device 1 (User defined: Heating, Dehumidification)

Max. heating power [kW]	50
Dehumidification capacity [kg/h]	50

Device 2 (Mechanical ventilation: Ventilation)

HRV/ERV efficiency [-]	0
Effective moisture recovery efficiency [-]	0
Use optional climate for air exchange	No
Capacity of mechanical system [m³/h]	50

System 3 (User defined): Sone 3, Input data

Zone	Share [-]				
	Space heating	Space cooling	Space ventilation	Air humidification	Air dehumidification
Zone 1: Soverom Sør	0		0		
Zone 2: Bad	0		0		
Zone 3: Soverom nord	0		1		

Device 1 (User defined: Heating)

Max. heating power [kW]	50
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Device 2 (Mechanical ventilation: Ventilation)

HRV/ERV efficiency [-]	0,8
Effective moisture recovery efficiency [-]	0
Use optional climate for air exchange	No
Capacity of mechanical system [m³/h]	38

System 4 (User defined): Sone 4, Input data

Zone	Share [-]				
	Space heating	Space cooling	Space ventilation	Air humidification	Air dehumidification
Zone 1: Soverom Sør	0		0		
Zone 2: Bad	0		0		
Zone 3: Soverom nord	0		0		
Zone 4: Stue/ Kjøkken	0		1		

Device 1 (User defined: Heating)

Max. heating power [kW]	50
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Device 2 (Mechanical ventilation: Ventilation)

HRV/ERV efficiency [-]	0,8
Effective moisture recovery efficiency [-]	0
Use optional climate for air exchange	No
Capacity of mechanical system [m³/h]	38

System 5 (User defined): Sone 5, Input data

Zone	Share [-]				
	Space heating	Space cooling	Space ventilation	Air humidification	Air dehumidification
Zone 1: Soverom Sør					
Zone 2: Bad					
Zone 3: Soverom nord					
Zone 4: Stue/ Kjøkken					

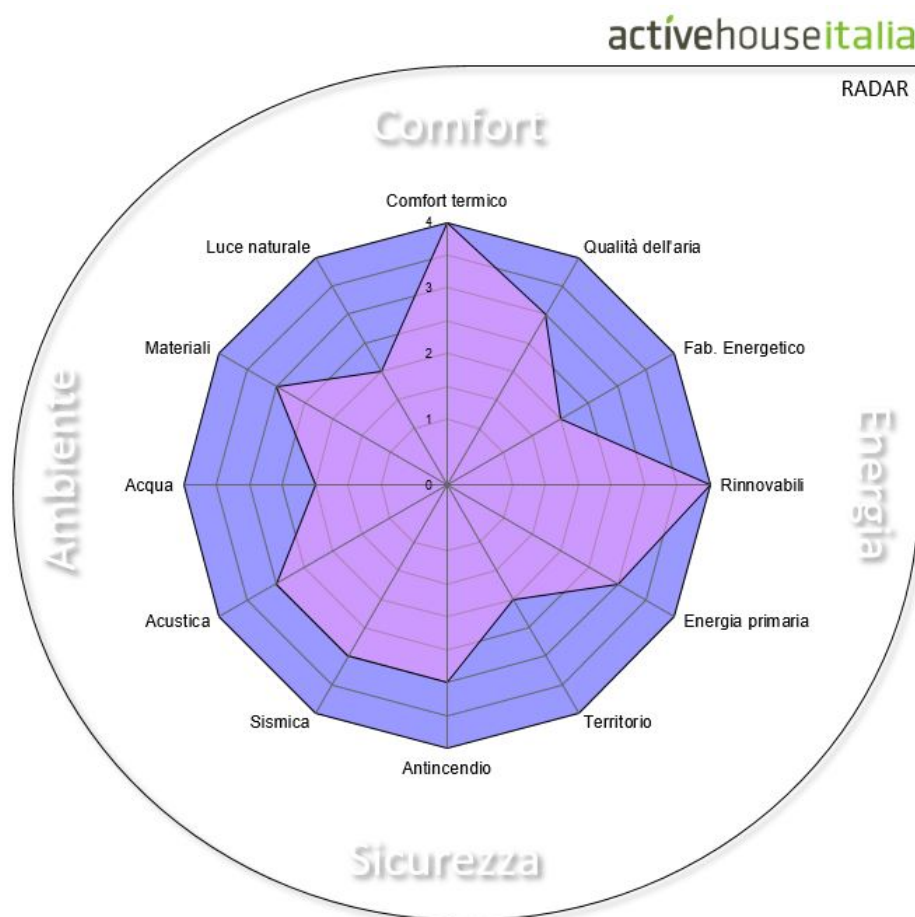
No relevant device(s) defined

System 1 (User defined): Sone 1, Results**System 2 (User defined): Sone 2, Results****System 3 (User defined): Sone 3, Results****System 4 (User defined): Sone 4, Results****System 5 (User defined): Sone 5, Results**

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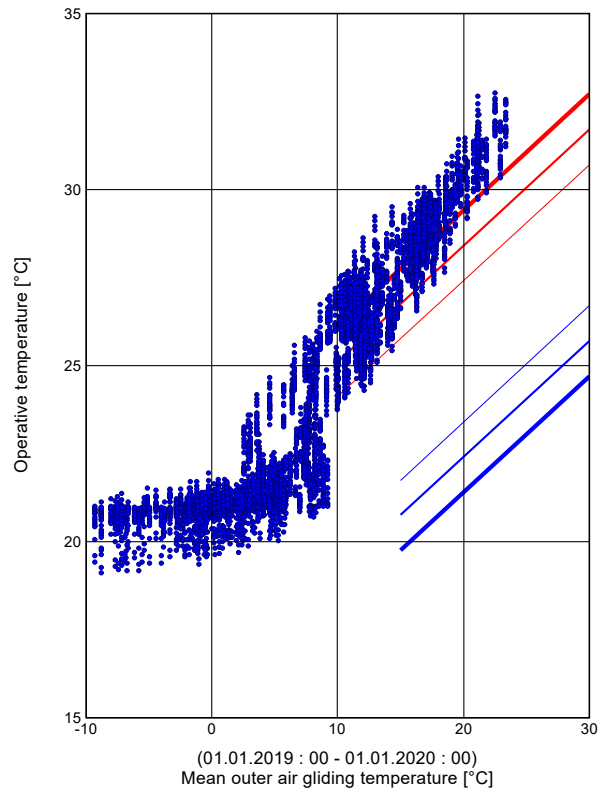
Report Active House

activehouseitalia



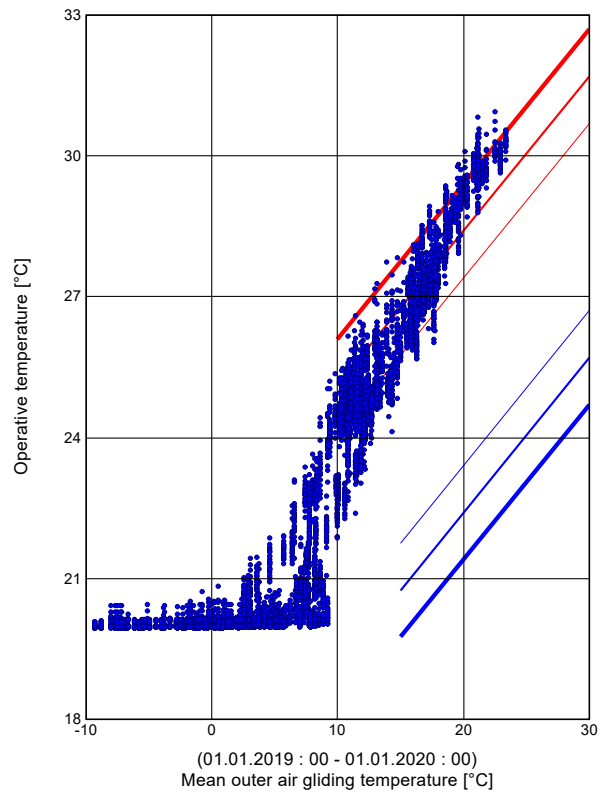
1 Hygrothermal comfort

Zone 1: Soverom Sør, Hygrothermal comfort



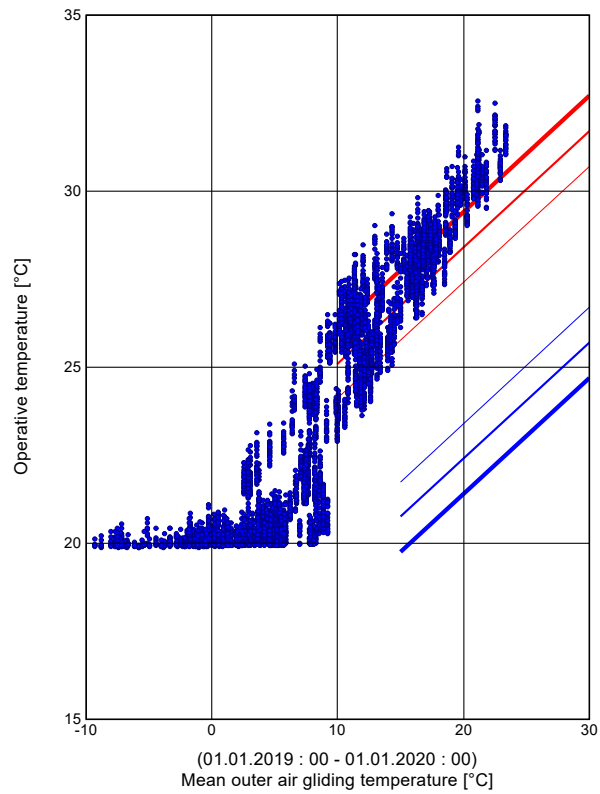
Maximum operative temperature (summer)	0
Minimum operative temperature (winter)	5

Zone 2: Bad, Hygrothermal comfort



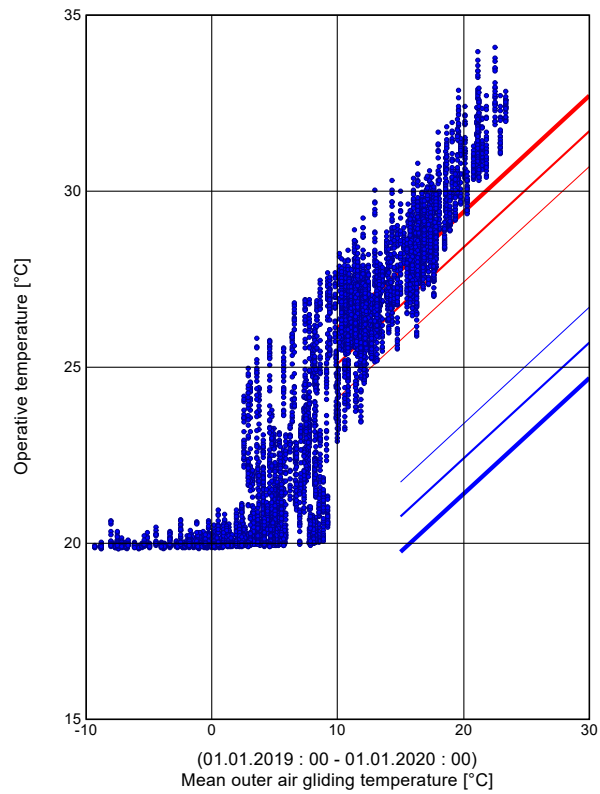
Maximum operative temperature (summer)	0
Minimum operative temperature (winter)	5

Zone 3: Soverom nord, Hygrothermal comfort



Maximum operative temperature (summer)	0
Minimum operative temperature (winter)	5

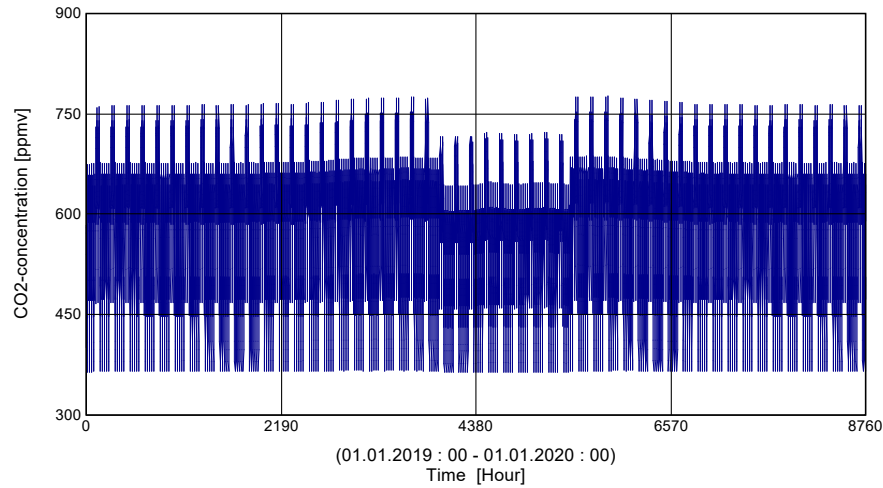
Zone 4: Stue/ Kjøkken, Hygrothermal comfort



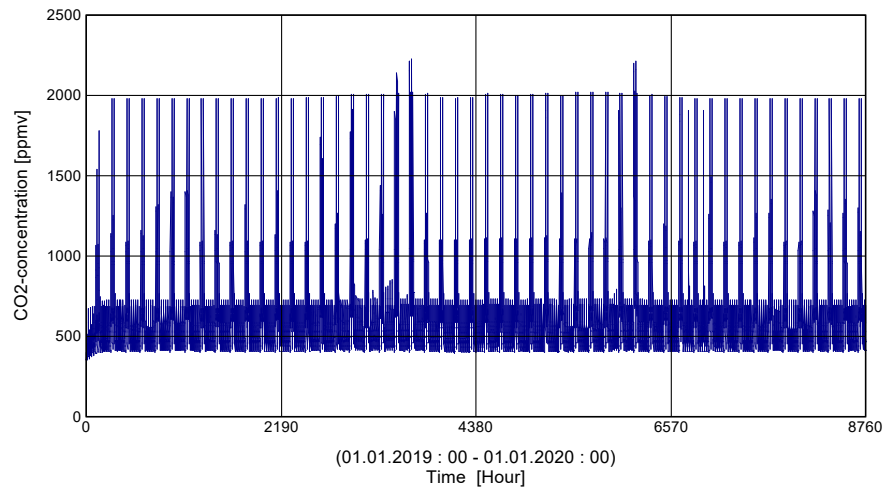
Maximum operative temperature (summer)	0
Minimum operative temperature (winter)	5

2 Air quality

Zone 1: Soverom Sør, Air quality

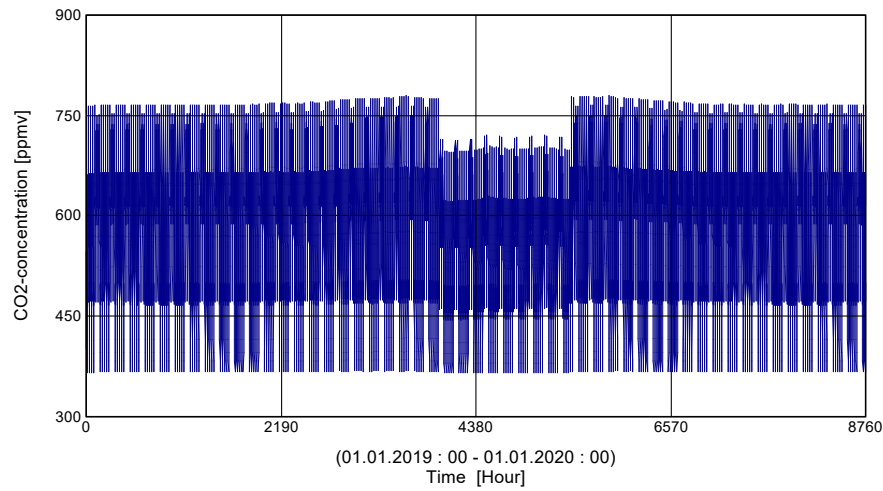


Standard fresh air supply, overall	1
Standard fresh air supply, summer	1
Standard fresh air supply, winter	0

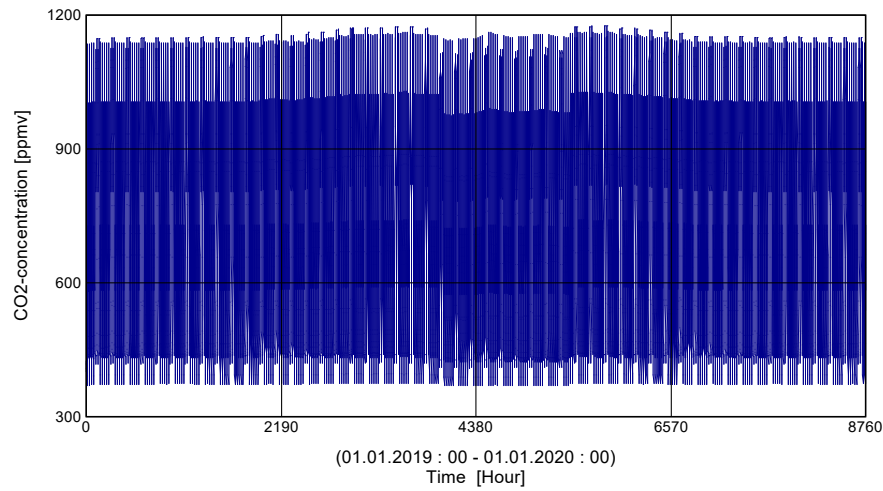
Zone 2: Bad, Air quality

Standard fresh air supply, overall	1
Standard fresh air supply, summer	1
Standard fresh air supply, winter	0

Zone 3: Soverom nord, Air quality



Standard fresh air supply, overall	1
Standard fresh air supply, summer	1
Standard fresh air supply, winter	0

Zone 4: Stue/ Kjøkken, Air quality

Standard fresh air supply, overall	1
Standard fresh air supply, summer	1
Standard fresh air supply, winter	0

3 Materials

Materials

Nr.	Name	Mass [kg]	Mass [%]	Volume [m³]	Volume [%]
1	Stora Enso CLT	1905,1	5,4	4,6	13,4
2	Mineral Wool (heat cond.: 0,04 W/mK)	278,8	0,8	4,6	13,4
3	Gypsum Plaster	786,5	2,2	0,5	1,3
4	EPS (heat cond.: 0.04 W/mK - density: 30kg/m³)	177,7	0,5	5,9	17,1
5	PE-Membrane 0,2 mm (sd = 87 m)	15,4	0	0,1	0,3
6	Concrete w/c 0,5	13673,3	38,8	5,9	17,1
7	Linoleum nach DIN 18171	177,7	0,5	0,2	0,5
8	Spruce, radial	90,8	0,3	0,2	0,6
9	Air Layer 25 mm	0,3	0	0,2	0,7
10	60 minute Building Paper	2,9	0	0	0
11	PE-Membrane 0,15 mm (sd = 70 m)	1,4	0	0	0
12	Gypsum Board	107,1	0,3	0,1	0,4
13	Cement Paste w/c 0,6	3348,4	9,5	2,4	6,8
14	Cement Plaster (stucco, A-value: 0.51 kg/m²h0.5)	2369,7	6,7	1,2	3,4
15	Wood-Fibre Insulation Board	183,7	0,5	1,2	3,4
16	Shingle	11848,7	33,6	5,9	17,1
17	Scandinavian spruce transverse direction II	208,6	0,6	0,5	1,5
18	Air Layer 40 mm	1,2	0	0,9	2,6
19	Softwood	37,2	0,1	0,1	0,3