

Urban Living

People & planet report

18.03.2026

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Assumptions

Thermal comfort - People

Assumptions – Thermal comfort

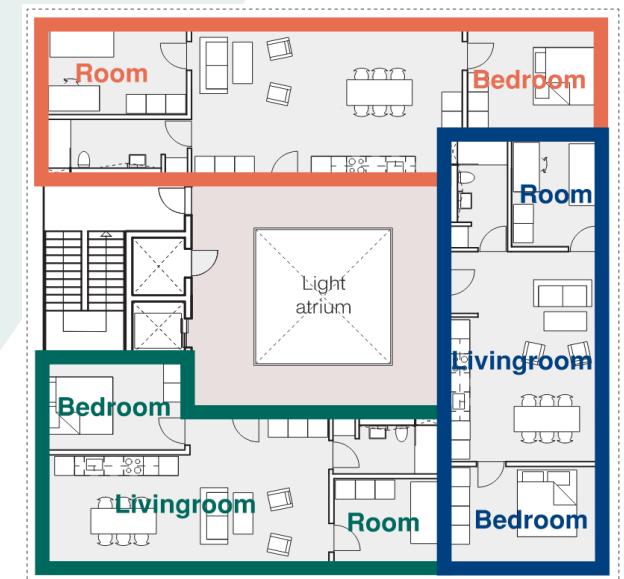
This slide only presents some of the assumptions for the Thermal comfort calculation. For more details about the calculation please see the attached files for the Thermal comfort calculation on Urban Living

General:

- Calculated in BSim v7.23.5.31
- Calculated in accordance with the Active House specification 3.0 and the Danish Building Regulations BR18.
- Quantities are based on floor plans, facade drawings and construction drawings and descriptions – as well as several assumptions
- Internal loads follows BVI2.0 (guidance for indoor climate simulations)
- The weather data file for the calculation is DRY2013 (based on weather data from 2001-2010)

Specific:

- The building is both mechanic and naturally ventilated.
- The windows can mechanically open at temperatures over 24 °C
- There's no shading on the windows.
- The building is not mechanical cooled.
- Light Transmittance and g-value for the windows is:
 - 64% / 35% based on typical vertical windows
- The following data has been used for the people:
 - Heat generation per person: 100 W
 - CO2 generation per person: 17 l/h
- One representative apartment (Green) has been chosen and rotated in four different directions to determent the thermal indoor climate. Due to the relatively uniform characteristics of the apartments in terms of room sizes, window dimensions, and opening areas, this is considered representative of all apartments in the apartment building.





Requirements

Thermal comfort - People

Maximum operative temperature per room

According to the People and planet there is a distinction between rooms with or without cooling. Therefore, the requirements varies depending on whether cooling is used or not.

Requirements without cooling

Maximum Thermal comfort Score 1: $T_{i,o} < 0,33 \times T_{rm} + 20,8$ [°C]

Maximum Thermal comfort Score 2: $T_{i,o} < 0,33 \times T_{rm} + 21,8$ [°C]

Maximum Thermal comfort Score 3: $T_{i,o} < 0,33 \times T_{rm} + 22,8$ [°C]

Maximum Thermal comfort Score 4: $T_{i,o} < 0,33 \times T_{rm} + 23,8$ [°C]

Requirements with cooling

Maximum Thermal comfort Score 1: $T_{i,o} < 25,5$ [°C]

Maximum Thermal comfort Score 2: $T_{i,o} < 26,0$ [°C]

Maximum Thermal comfort Score 3: $T_{i,o} < 27,0$ [°C]

Maximum Thermal comfort Score 4: $T_{i,o} < 28,0$ [°C]

Where T_{rm} is the Running Mean outdoor temperature as defined in 'paragraph 3.12 External temperature, run-ning mean' of EN 16798-1 and $T_{i,o}$ is the operative indoor temperature in the room.

For both scenarios whether there is used cooling or not, the requirements should be met for a minimum of 95% of **occupied time**.



Minimum operative temperature per room

According to People and planet there is a not distinction between rooms with or without cooling.

Requirements

Minimum Thermal comfort Score 1:	$T_{i,o} < 21,0$ [°C]
Minimum Thermal comfort Score 2:	$T_{i,o} < 20,0$ [°C]
Minimum Thermal comfort Score 3:	$T_{i,o} < 19,0$ [°C]
Minimum Thermal comfort Score 4:	$T_{i,o} < 18,0$ [°C]

Where $T_{i,o}$ is the operative indoor temperature in the room.

For both scenarios whether there is used cooling or not, the requirements should be met for a minimum of 95% of **occupied time**.



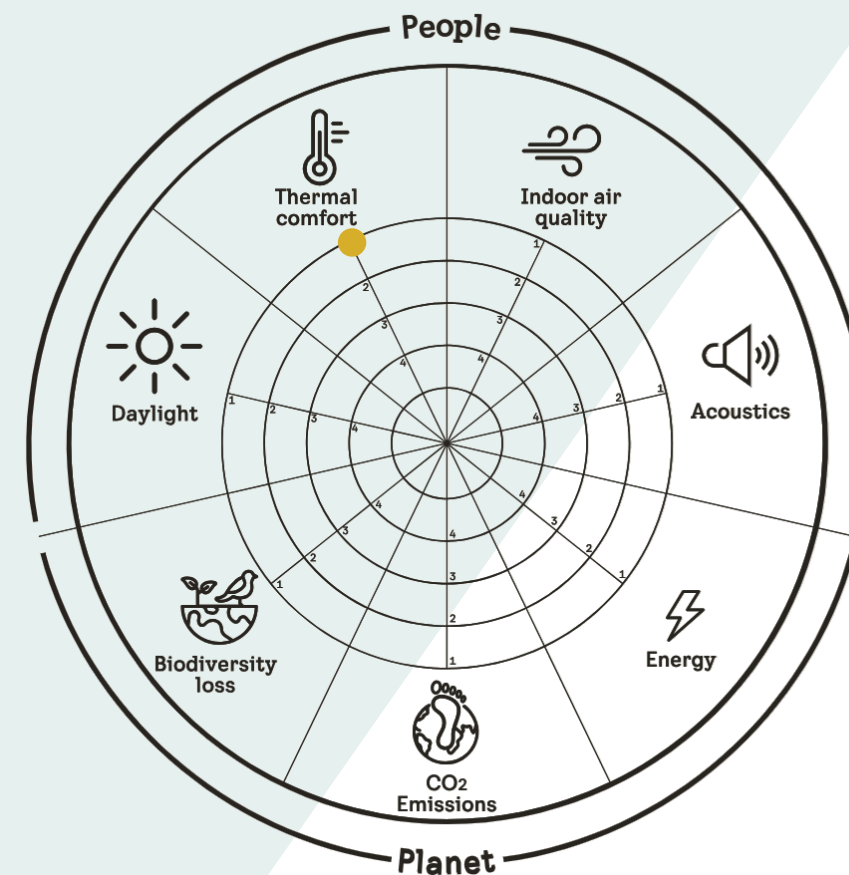


Results

Thermal comfort - People

Total results – Thermal comfort

Room	Average Score	Hours [h/day]	No. of people	Weighted Score
Max temperature				
Green: Bedroom	1	0,5	2	1
Green: Room	1	1,5	1	1,5
Green: Livingroom	1	5,5	3	16,5
Subtotal			19	19
Minimum temperature				
Green: Bedroom	1	0,5	2	1
Green: Room	1	1,5	1	1,5
Green: Livingroom	1	5,5	3	16,5
Subtotal			19	19
Total Average Score				1,0





Assumptions

Indoor air quality - People

Assumptions – Indoor air quality

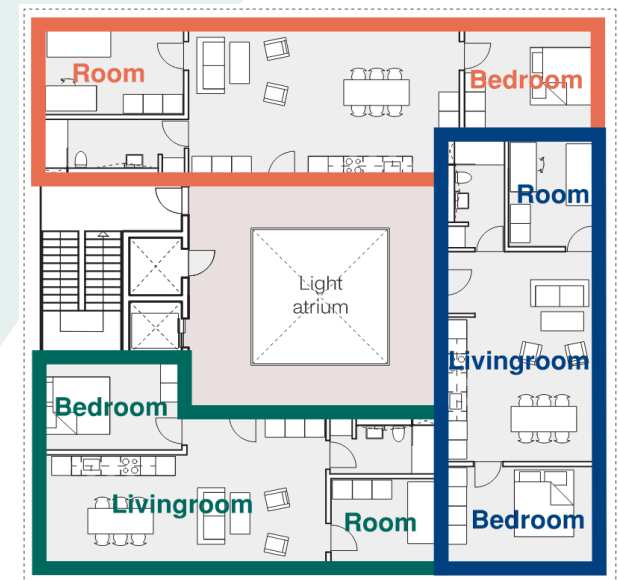
This slide only presents some of the assumptions for the Indoor air quality calculation. For more details about the calculation please see the attached files for the Indoor air quality calculation on Urban Living.

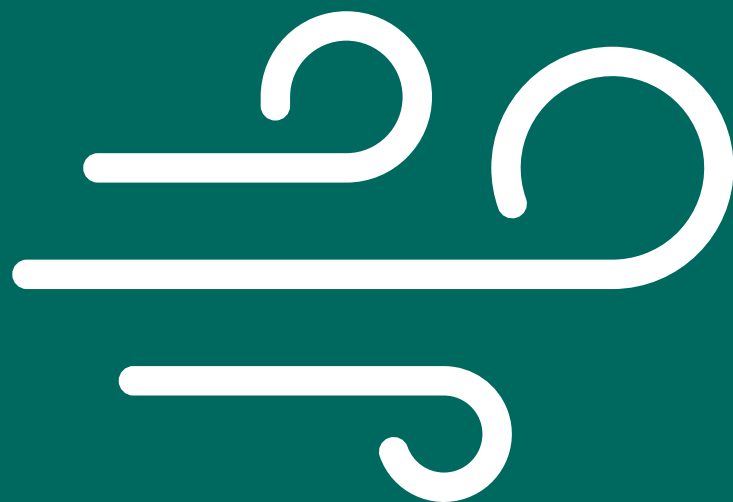
General:

- Calculated in BSim v7.23.5.31
- Calculated in accordance with the Active House specification 3.0 and the Danish Building Regulations BR18.
- Quantities are based on floor plans, facade drawings and construction drawings and descriptions – as well as several assumptions
- Internal loads follows BVI2.0 (guidance for indoor climate simulations)
- The weather data file for the calculation is DRY2013 (based on weather data from 2001-2010)

Specific:

- The building is both mechanic and naturally ventilated.
- The data used for the calculation is:
 - CO2 generation per person: 17 l/h
- One representative apartment (Green) has been chosen to determine the indoor air quality. Due to the relatively uniform characteristics of the apartments in terms of room sizes, window dimensions, and opening areas, this is considered representative of all apartments in the apartment building.





Requirements

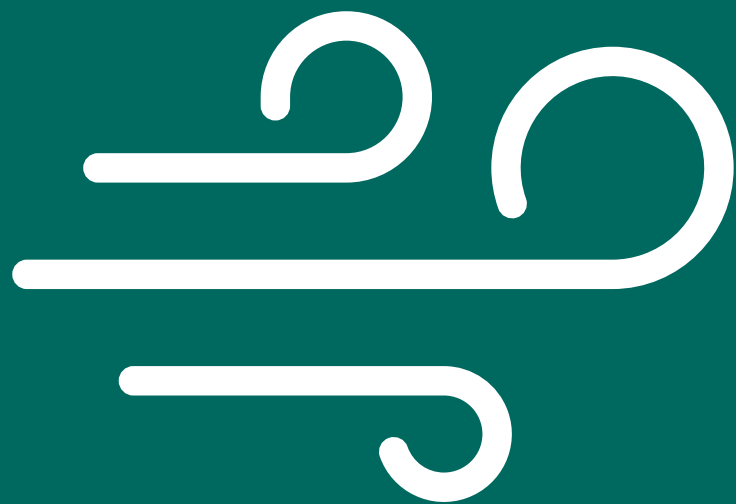
Indoor air quality - People

Maximum indoor CO₂ concentration

Requirements

Indoor climate class 1:	< 400 ppm above outdoor CO ₂ concentration
Indoor climate class 2:	< 550 ppm above outdoor CO ₂ concentration
Indoor climate class 3:	< 800 ppm above outdoor CO ₂ concentration
Indoor climate class 4:	< 1100 ppm above outdoor CO ₂ concentration

The requirements should be met for a minimum of 95% of **occupied time**.

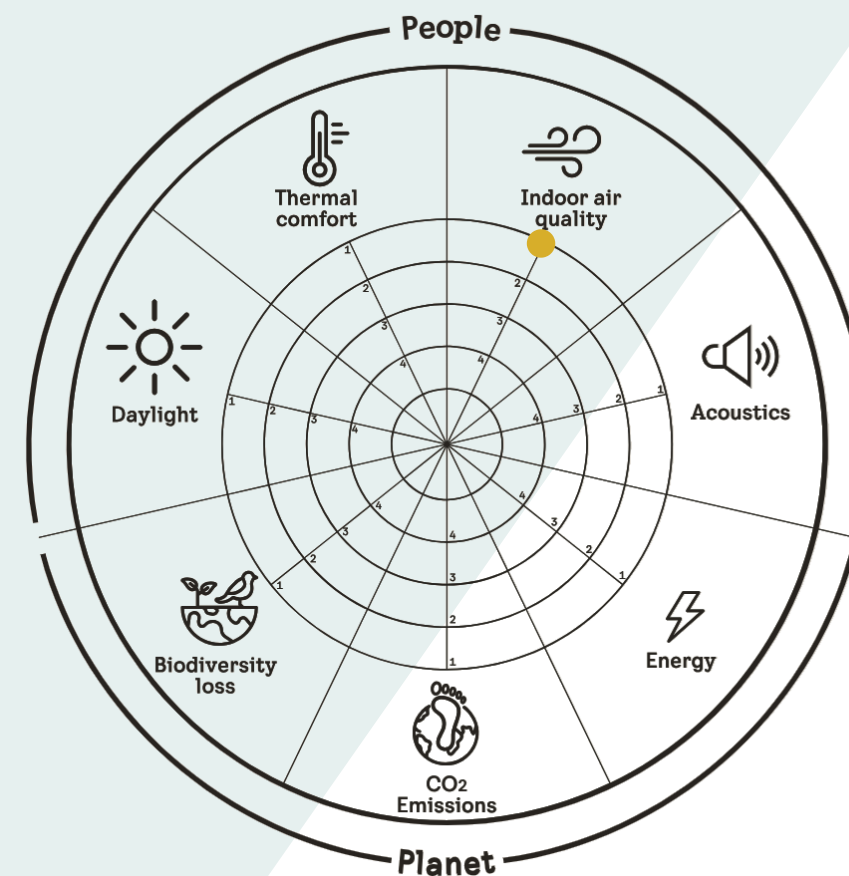


Results

Indoor air quality - People

Total results – Indoor air quality

Room	Average Score	Hours [h/day]	No. of people	Weighted Score
Green: Bedroom	3	0,5	2	3
Green: Room	1	1,5	1	1,5
Green: Livingroom	1	5,5	3	16,5
Subtotal			19	21
Total Average Score				1,1





Assumptions

Daylight - People

Assumptions – Daylight

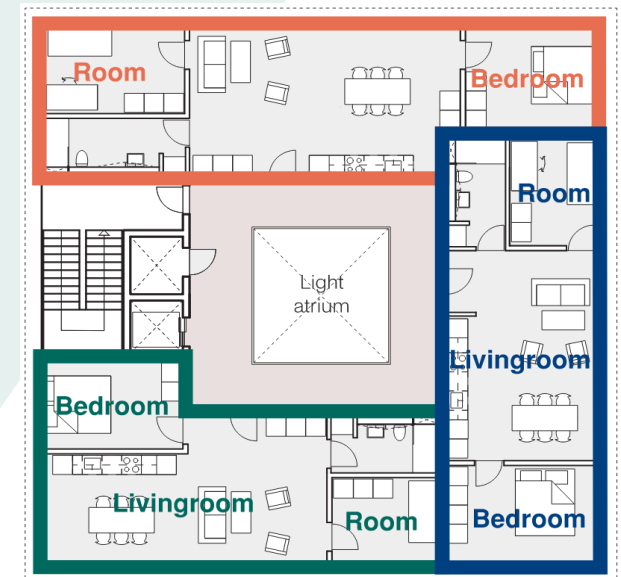
This slide only presents some of the assumptions for the Daylight calculation. For more details about the calculation please see the attached files for the Daylight calculation on Urban Living.

General:

- Calculated in ClimateStudio (plug-in to Rhino)
- Calculated in accordance with the Active House specification 3.0 and the Danish Building Regulations BR18
- Quantities are based on floor plans, facade drawings and construction drawings and descriptions.
- The weather data file for the calculation is DRY2013 (based on weather data from 2001-2010)

Specific:

- Reference plane height for the calculation is 0.50 m according to BR18
- Light Transmittance for the windows is:
 - Façade windows at 64%
- Surfaces Light reflectance is:
 - Floor: 30%
 - Ceiling: 70%
 - Wall: 50%
- One Floor in the apartment building (Green, Blue and Red) has been chosen to determine the daylight quality. Due to the uniform apartments on each floor, this is considered representative of all apartments in the apartment building.





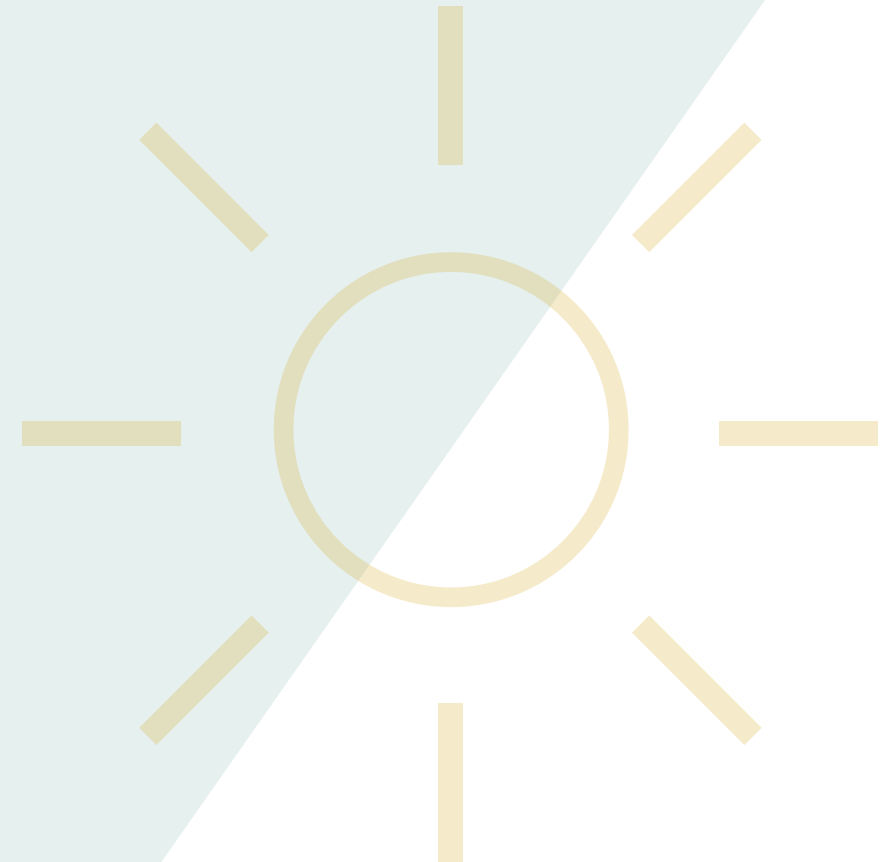
Requirements

Daylight - People

Daylight

Requirements

Daylight Score 1:	$\geq 70\%$ (F plane $> 2,1\%$)
Daylight Score 2:	$\geq 60\%$ (F plane $> 2,1\%$)
Daylight Score 3:	$\geq 50\%$ (F plane $> 2,1\%$)
Daylight Score 4:	$\geq 40\%$ (F plane $> 2,1\%$)





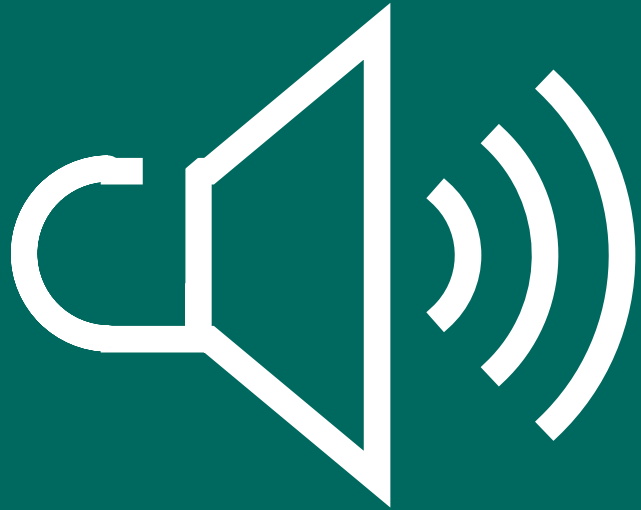
Results

Daylight - People

Total results – Daylight

Room	Fplane > 2,1%	Hours [h/day]	No. of people (p)	Weighted Score (hxp)	
Green: Bedroom	29%	0,5	2	0,3	Out of score
Green: Room	100%	1,5	1	1,5	1
Green: Livingroom	86%	5,5	3	14,1	1
Red: Bedroom	96%	0,5	2	1,0	1
Red: Room	100%	1,5	1	1,5	1
Red: Livingroom	100%	5,5	3	16,5	1
Blue: Bedroom	100%	0,5	2	1,0	1
Blue: Room	35%	1,5	1	0,5	Out of score
Green: Bedroom	41%	5,5	3	6,7	4
Subtotal			57	43,1	
Total Average Score				75,6%	1,0





Assumptions

Acoustics - People

Assumptions – Acoustics

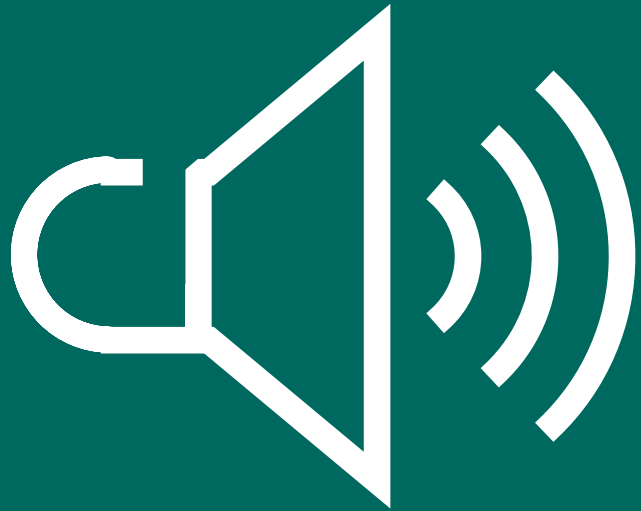
There's no further details about the Acoustic calculations on Urban Living.

General:

- *A specialist in acoustics has viewed the received material on which the calculation is based on the files sent (PDF, Word, Excel and DWG).*
- *For External sources and building systems the score is valued as if the building follows the Danish building regulations.*

Specific:

- *Floor structure:*
 - *Heavy floor slab with a floating concrete layer on mineral wool or a raised floor with mineral wool in the cavity. Joists are mounted on soft pads. Estimated $D_{nT,A}$ = 60–63 dB, $L_{nT,A}$ = 50–54 dB. Expected to score 3 points.*
- *Load-bearing internal walls (CLT) – 200–230 mm CLT with gypsum:*
 - *Estimated $D_{nT,A}$ = 43–46 dB. No score.*



Requirements

Acoustics - People

Acoustics

Requirements

Indoor Noise Levels (Building systems)

Acoustic Score 1:	< 25 dB or background noise level
Acoustic Score 2:	< 30 dB or background noise level
Acoustic Score 3:	< 35 dB or background noise level
Acoustic Score 4:	< 40 dB or background noise level

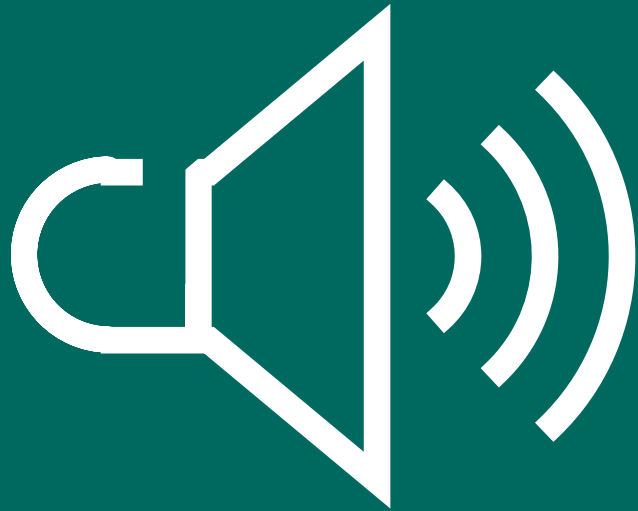
Outdoor Noise Levels (External sources)

Acoustic Score 1:	< 25 dB
Acoustic Score 2:	< 30 dB
Acoustic Score 3:	< 35 dB
Acoustic Score 4:	< 40 dB

Noise Transmission Between Dwellings

Acoustic Score 1:	DnT;A $\geq$ 62 dB LnT;A $\leq$ 43 dB
Acoustic Score 2:	DnT;A $\geq$ 57 dB LnT;A $\leq$ 48 dB
Acoustic Score 3:	DnT;A $\geq$ 52 dB LnT;A $\leq$ 53 dB
Acoustic Score 4:	DnT;A $\geq$ 47 dB LnT;A $\leq$ 58 dB





Results

Acoustics - People

Total results – Acoustics

Room		Average Score	Weighted Score
Indoor Noise Levels (from building systems)			
Entire building	Following danish building regulations	2	2
Subtotal			2
Outdoor Noise Levels (from external sources)			
Entire building	Following danish building regulations	2	2
Subtotal			2
Noise Transmission Between Dwellings			
Entire building	Slab: DnT,A ca. 60-63 dB LnT,a ca. 50-54 dB CLT interior Wall: DnT,A = 43-46 dB	Out of Score	Out of Score
Subtotal			N/A
Total Average Score			N/A





Assumptions

Energy - Planet

Assumptions – Energy

This slide only presents some of the assumptions for the Energy calculation. For more details about the calculation please see the attached files for the Energy calculation on Urban Living.

General:

- *Calculated in Be18 (10.19.7.22)*
- *Calculated in accordance with the Danish Building Regulations BR18 and Danish building standards*
- *Quantities are based on floor plans, facade drawings and construction drawings and descriptions – as well as several assumptions*
- *The weather data file for the calculation is DRY2013 (based on weather data from 2001-2010)*

Specific:

- *Thermal capacity for the CLP is assumed to be 60 Wh/K m^2 - which compares to a medium-weight building.*
- *The building is both mechanic and naturally ventilated.*
- *The building is not mechanical cooled.*
- *Internal heat gains from occupants and equipment are calculated with the value of $1,5 \text{ W/m}^2$ for occupants and $3,5 \text{ W/m}^2$ for equipment.*
- *The heating system in the building is radiators with a supply/return temperature of $57/25 \text{ }^\circ\text{C}$*
- *Heating for the building is supplied by district heating.*
- *There's established 100 m^2 solar panels on the building*



Requirements

Energy - Planet

Energy

Requirements

Energy Score 1:	80 % of national requirements
Energy Score 2:	85 % of national requirements
Energy Score 3:	90 % of national requirements
Energy Score 4:	100 % of national requirements

The baseline is set at 30 kWh/m²,year + 1,000 kWh/year/heated floor area, according to Danish law for residential buildings.



Results

Energy - Planet

Total results – Energy

Building	Energy demand [kWh/m2]	Score
Total	28,8	4,0

	80% national req.	85% national req.	90% national req.	100% national req.
Energy demand	24,5	26,0	27,5	30,6





Assumptions

CO₂ Emissions - Planet

Assumptions – CO₂ Emissions

This slide only presents some of the assumptions for the LCA calculation. For more details about the calculation please see the attached files for the LCA on Children's Living Places.

General:

- *Calculated in LCAByg 2023.3 (5.4.0.5)*
- *Calculated in accordance with the Danish Building Regulations BR18 and Danish building standards*
 - *Includes stages A1-A3, B4, B6, C3 and C4*
 - *Emission factors from BR18 (2023)*
- *The climate impact is reported in kg CO₂-equivalents per m² for an assessment period of 50 years from completion of the construction*
- *Quantities are based on floor plans, facade drawings and construction drawings and descriptions – as well as several assumptions*
- *The received material on which the calculation is based on the files sent (PDF, Word, Excel and DWG)*

Specific:

- *The building has several materials which is reused. The climate impact are according to the Danish building regulations considered 0 kg CO₂eq.*
- *The climate impact is based on generic data with a few exceptions of insulation, solar panels and elevator.*
- *For HVAC-installations the LCA is using the standard values for apartment buildings.*



Requirements

CO₂ Emissions - Planet

CO₂ Emissions

Requirements

- CO₂ Emission Score 1: ≤ Safe Operating space
- CO₂ Emission Score 2: ≤ Reduction pathway (using IPCC 50% probability scenario of staying below 1,5°C)
- CO₂ Emission Score 3: ≤ Reduction pathway (using IPCC 33% probability scenario of staying below 1,5°C)
- CO₂ Emission Score 4: ≤ Reduction pathway (using IPCC 17% probability scenario of staying below 1,5°C)

The baseline is set at 7,5 kg CO₂eq./m²/year, according to Danish law for apartment buildings.

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
CO ₂ Emission Score 1:	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%
CO ₂ Emission Score 2:	100%	84%	68%	52%	36%	20%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%
CO ₂ Emission Score 3:	100%	89%	79%	68%	57%	47%	36%	25%	15%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%	≤ 4%
CO ₂ Emission Score 4:	100%	94%	87%	81%	74%	68%	62%	55%	49%	42%	36%	30%	23%	17%	10%	≤ 4%



Results

CO₂ Emissions - Planet

Total results – CO₂ Emissions

Building	GWP	Building year	Score
	[kg CO2 eq./m2/ year]	[year]	
Total	4,44	2027	2,0

The building is assessed and scored based on the year the building permit is submitted. However, for the building below, the score is illustrated for the year of construction (either way the score remains unchanged).

	2025	2026	2027	2028	2029	2030	2031
CO ₂ Emission Score 1:	0,3	0,3	0,3	0,3	0,3	0,3	...
CO ₂ Emission Score 2:	7,5	6,3	5,1	3,9	2,7	1,5	...
CO ₂ Emission Score 3:	7,5	6,7	5,9	5,1	4,3	3,5	...
CO ₂ Emission Score 4:	7,5	7,1	6,5	6,1	5,6	5,1	...





Assumptions

Biodiversity loss - Planet

Assumptions – Biodiversity loss

This slide only presents some of the assumptions for the Biodiversity Loss. For more details about the calculation please see the attached files for the Biodiversity Loss on Urban Living.

General:

- *Quantities for the Biodiversity impact is based on the LCAByg file*
- *For the background data, the materials have been grouped according to the representative datasets accessible in Ecoinvent v.3.11*
- *The biodiversity impact related to energy consumption has been assessed, based on a dataset for the Danish energy market and the consumption*



Requirements

Biodiversity loss - Planet

Biodiversity loss

Requirements

Biodiversity loss Score 1:	100% of biodiversity loss is being actively recovered
Biodiversity loss Score 2:	Reaching 100% recovery by 2028
Biodiversity loss Score 3:	Reaching 100% recovery by 2030
Biodiversity loss Score 4:	Reaching 100% recovery by 2034

Scores depend on the percentage of biodiversity loss each project recovers and the patchway chosen to achieve it.

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Biodiversity loss Score 1:	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Biodiversity loss Score 2:	0%	17%	33%	50%	67%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Biodiversity loss Score 3:	0%	11%	22%	33%	44%	56%	67%	78%	89%	100%	100%	100%	100%	100%	100%	100%
Biodiversity loss Score 4:	0%	7%	13%	20%	27%	33%	40%	47%	53%	60%	67%	73%	80%	87%	93%	100%



Results

Biodiversity loss - Planet

Total results – Biodiversity loss

Building	Biodiversity recovery [%]	Building year [year]	Score
Total	0	2025	2,0

	Operation	Material	Total	TDN [ha]
Results	9,73E-15	3,72E-14	4,69E-14	17
Percentage	21	79	100	-

	2025	2026	2027	2028	2029	2030	2031
Biodiversity loss Score 1:	100%	100%	100%	100%	100%	100%	...
Biodiversity loss Score 2:	0%	17%	33%	50%	67%	83%	...
Biodiversity loss Score 3:	0%	11%	22%	33%	44%	56%	...
Biodiversity loss Score 4:	0%	7%	13%	20%	27%	33%	...





Overall results

Overall results

