



## D4.2 Annex II



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Issue Date: [insert text here]  
Building Reference: [insert text here]  
Software used: [insert text here]



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User-Centred Energy Performance  
Assessment and Certification

EPB Assessor name: [insert text here]  
EPC Reference: [insert text here]  
[\[link to EPC database\]](#)

# Calculated EPB Assessment

## Building Information

Name: [insert text here]  
Address: [insert text here]  
Municipality: [insert text here]  
Postal Code: [insert text here]  
Region: [insert text here]  
Country: [insert text here]  
Cadastral Ref.: [insert text here]



Building Situation: [insert text here]  
Year of Construction: [insert text here]  
Previous Interventions: [insert text here]  
Object Type: [insert text here]  
Building Category: [insert text here]  
Building Ref. Area: [insert text here]

Professional's report

## Energy Performance

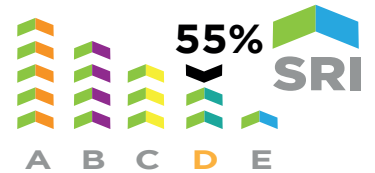


**D**

## Thermal Score

Season	Occupied (h)	Score
❄ Winter	[Value]	<b>1.9</b>
☀ Summer	[Value]	<b>2.8</b>
🌧 Aut./Spring	[Value]	<b>2.7</b>
<b>Total:</b>	[Value]	<b>2.5</b>

## Smart Readiness Indicator



## Assessor Information

Name: [insert text here]  
ID: [insert text here]  
Company name: [insert text here]  
Company ID: [insert text here]  
Email: [insert text here]  
Phone: [insert text here]

Address: [insert text here]  
Municipality: [insert text here]  
Postal Code: [insert text here]  
Region: [insert text here]  
Country: [insert text here]



Issue Date: [insert text here]  
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# Calculated EPB Assessment

## On-site visit

### Date of Visit 1

[DateofVisit]

Description of tests, checks  
and inspections performed

[Lorem ipsum dolor sit amet,  
consectetuer adipiscing elit,  
sed diam nonummy nibh euismod  
tincidunt ut laoreet dolore  
magna aliquam erat volutpat.  
Ut wisi enim ad minim veniam,  
quis nostrud exerci tation]

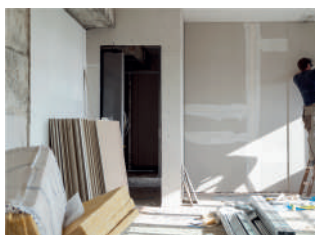
### Date of Visit 2

[DateofVisit]

Description of tests, checks  
and inspections performed

[Lorem ipsum dolor sit amet,  
consectetuer adipiscing elit,  
sed diam nonummy nibh euismod  
tincidunt ut laoreet dolore  
magna aliquam erat volutpat.  
Ut wisi enim ad minim veniam,  
quis nostrud exerci tation]

Professional's report





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Issue Date: [insert text here]  
Building Reference: [insert text here]  
Software used: [insert text here]

EPB Assessor name: [insert text here]  
EPC Reference: [insert text here]  
[\[link to EPC database\]](#)

# Calculated EPB Assessment

## Renovation Scenario

### Deep Renovation

[Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation]

## Cost

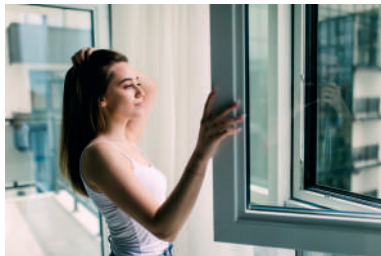
[X €]

Professional's report

## Renovation Actions



[Insulating the Building]



[Ensuring Natural Ventilation]



[Installing Heat Pumps]

## Energy Performance



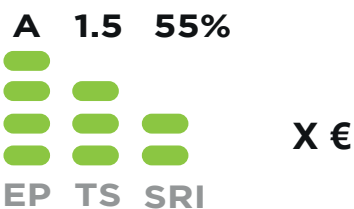
## Thermal Score

Season	Occupied (h)	Score
Winter	[Value]	1.9
Summer	[Value]	2.8
Aut./Spring	[Value]	2.7
<b>Total:</b>	[Value]	<b>2.5</b>

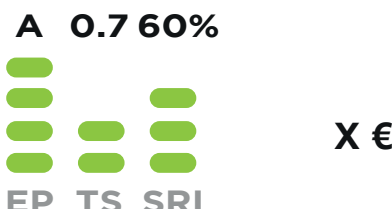
## Smart Readiness Indicator



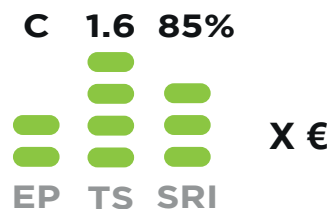
## Renovation Performance



#1 [Insulating the Building]



#2 [Ensuring Natural Ventilation]



#3 [Installing Heat Pumps]

Issue Date: [insert text here]  
Building Reference: [insert text here]  
Software used: [insert text here]



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# Calculated EPB Assessment

## Overall EP indicators

### Overall non-renewable primary energy use<sup>1</sup>

[Value] kWh/m<sup>2</sup>

*<sup>1</sup>Calculated according to H5 in Annex H in ISO 52000-1; thus, considering compensation between different energy carriers and the effect of exported energy*

Overall total primary energy use	[Value]	kWh/m <sup>2</sup>
Summer thermal comfort	[Value]	K·h
Winter thermal comfort	[Value]	K·h
Domestic Hot Water thermal comfort	[Value]	K·h

### Overall non-renewable primary energy use<sup>2</sup>

[Value] kWh/m<sup>2</sup>

*<sup>2</sup>Calculated according to H4 in Annex H in ISO 52000-1; thus, not considering compensation between different energy carriers nor the effect of exported energy*

Overall renewable primary energy production	[Value]	kWh/m <sup>2</sup>
Overall renewable primary energy use	[Value]	kWh/m <sup>2</sup>
Overall equivalent CO <sub>2</sub> emissions	[Value]	kg/m <sup>2</sup>

## Renewable energy indicators



Electricity generation by onsite PV	[Value]	kWh/m <sup>2</sup>
Electricity from onsite PV self-used	[Value]	kWh/m <sup>2</sup>
Electricity exported to non-EPB uses by onsite PV	[Value]	kWh/m <sup>2</sup>
Electricity exported to the grid by onsite PV	[Value]	kWh/m <sup>2</sup>

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# Calculated EPB Assessment

## Wind Turbines

Electricity generation by onsite wind	[Value]	kWh/m <sup>2</sup>
Electricity from onsite wind self-used	[Value]	kWh/m <sup>2</sup>
Electricity exported to non-EPB uses by onsite wind	[Value]	kWh/m <sup>2</sup>
Electricity exported to the grid by onsite wind	[Value]	kWh/m <sup>2</sup>

## CHP

Electricity generation by onsite CHP	[Value]	kWh/m <sup>2</sup>
Electricity from onsite CHP self-used	[Value]	kWh/m <sup>2</sup>
Electricity exported to non-EPB uses by onsite CHP	[Value]	kWh/m <sup>2</sup>
Electricity exported to the grid by onsite CHP	[Value]	kWh/m <sup>2</sup>

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Issue Date: [insert text here]

Building Reference: [insert text here]

Software used: [insert text here]

EPB Assessor name: [insert text here]

EPC Reference: [insert text here]

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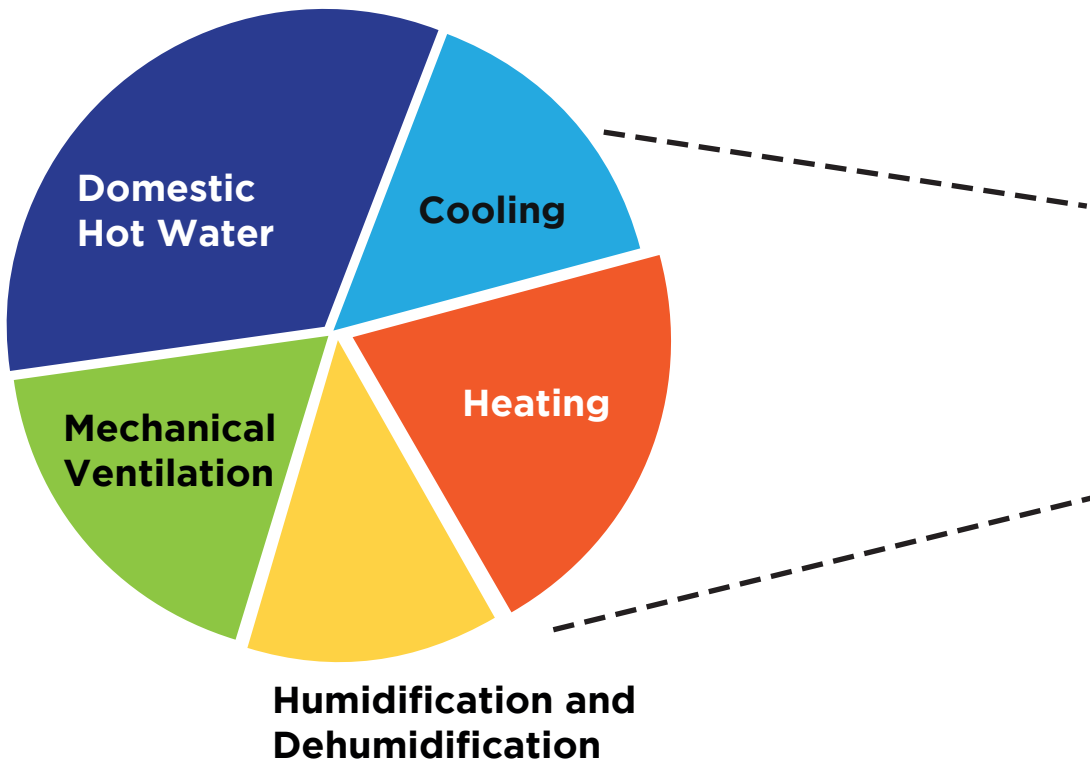
[\[link to EPC database\]](#)

# Calculated EPB Assessment

## Energy needs

Heating	[Value]	kWh/m <sup>2</sup>
Cooling	[Value]	kWh/m <sup>2</sup>
Domestic Hot Water	[Value]	kWh/m <sup>2</sup>
Humidification and Dehumidification	[Value]	kWh/m <sup>2</sup>
Mechanical Ventilation	[Value]	kWh/m <sup>2</sup>
Lighting <sup>3</sup> <small><sup>3</sup>Daylight Autonomy</small>	[Value]	%

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Issue Date: [insert text here]  
Building Reference: [insert text here]  
Software used: [insert text here]



EPB Assessor name: [insert text here]  
EPC Reference: [insert text here]

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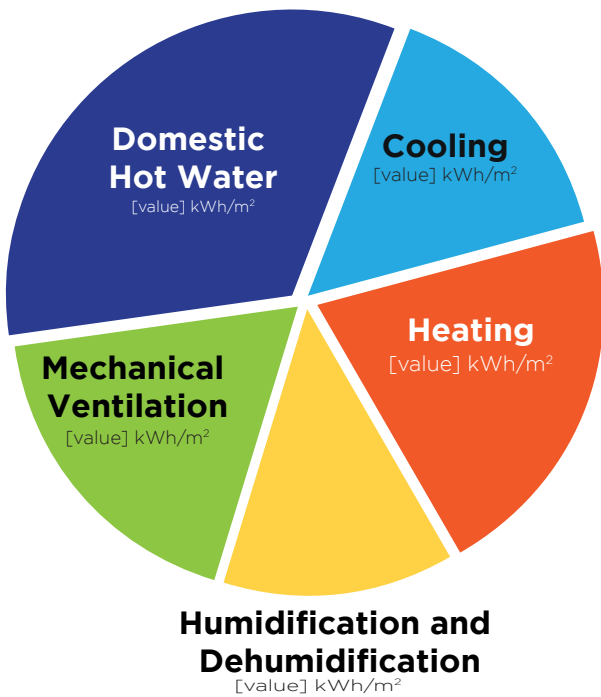
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# Calculated EPB Assessment

## Energy needs

Energy needs per energy vector



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Issue Date: [insert text here]  
Building Reference: [insert text here]  
Software used: [insert text here]



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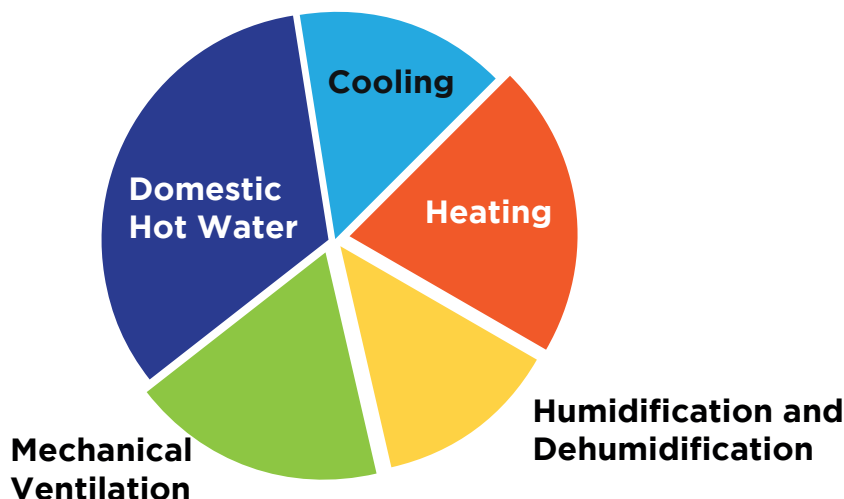
EPB Assessor name: [insert text here]  
EPC Reference: [insert text here]

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# Calculated EPB Assessment

## Energy use

### Energy use per energy vector



Professional's report

### Energy use per energy vector i

Heating	[Value]	kWh/m <sup>2</sup>
Cooling	[Value]	kWh/m <sup>2</sup>
Domestic Hot Water	[Value]	kWh/m <sup>2</sup>
Humidification and Dehumidification	[Value]	kWh/m <sup>2</sup>
Mechanical Ventilation	[Value]	kWh/m <sup>2</sup>
Lighting	[Value]	kWh/m <sup>2</sup>

### Energy use per energy vector i+1

Heating	[Value]	kWh/m <sup>2</sup>
Cooling	[Value]	kWh/m <sup>2</sup>
Domestic Hot Water	[Value]	kWh/m <sup>2</sup>
Humidification and Dehumidification	[Value]	kWh/m <sup>2</sup>
Mechanical Ventilation	[Value]	kWh/m <sup>2</sup>
Lighting	[Value]	kWh/m <sup>2</sup>



Issue Date: [insert text here]

Building Reference: [insert text here]

Software used: [insert text here]

EPB Assessor name: [insert text here]

EPC Reference: [insert text here]

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# Calculated EPB Assessment

## Partial EP Indicators

### Envelope

### Opaque envelope

#### [Opaque envelope construction i]

Thermal Transmittance [Value] W/(m<sup>2</sup>·K)

#### Layered Materials<sup>4</sup>

<sup>4</sup>From outer to inner element

Name	Thickness (cm)	Conductivity (W/m·K)	Density (kg/m <sup>3</sup> )	Specific Heat (J/(kg·K))	Colour
[Name]	[Value]	[Value]	[Value]	[Value]	[Value]
[Name]	[Value]	[Value]	[Value]	[Value]	
[Name]	[Value]	[Value]	[Value]	[Value]	
[Name]	[Value]	[Value]	[Value]	[Value]	

#### [Opaque envelope construction i+1]

Thermal Transmittance [Value] W/(m<sup>2</sup>·K)

#### Layered Materials<sup>4</sup>

<sup>4</sup>From outer to inner element

Name	Thickness (cm)	Conductivity (W/m·K)	Density (kg/m <sup>3</sup> )	Specific Heat (J/(kg·K))	Colour
[Name]	[Value]	[Value]	[Value]	[Value]	[Value]
[Name]	[Value]	[Value]	[Value]	[Value]	
[Name]	[Value]	[Value]	[Value]	[Value]	
[Name]	[Value]	[Value]	[Value]	[Value]	

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Issue Date: [insert text here]

Building Reference: [insert text here]

Software used: [insert text here]



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EPC Reference: [insert text here]

[\[link to EPC database\]](#)

# Calculated EPB Assessment

## Partial EP Indicators

### Envelope

### Glazings

#### [Window/Skylight i]

**Opening control** [Type]

**Thermal transmittance** [Value] W/(m<sup>2</sup>·K)

Glass Thermal Transmittance [Value] W/(m<sup>2</sup>·K)

Frame Thermal Transmittance [Value] W/(m<sup>2</sup>·K)

<b>Solar shading</b>	{	Presence	[Yes/No]
		Technology	[Type]
		Control	[Type]

**Solar shading potential<sup>5</sup>** [Value] %

<sup>5</sup>According to ISO 18292

Glass Solar Factor [Value]

Frame colour [Value]

Air permeability class<sup>6</sup> [Value]

<sup>6</sup>According to EN 12207

#### [Window/Skylight i+1]

**Opening control** [Type]

**Thermal transmittance** [Value] W/(m<sup>2</sup>·K)

Glass Thermal Transmittance [Value] W/(m<sup>2</sup>·K)

Frame Thermal Transmittance [Value] W/(m<sup>2</sup>·K)

<b>Solar shading</b>	{	Presence	[Yes/No]
		Technology	[Type]
		Control	[Type]

**Solar shading potential<sup>5</sup>** [Value] %

<sup>5</sup>According to ISO 18292

Glass Solar Factor [Value]

Frame colour [Value]

Air permeability class<sup>6</sup> [Value]

<sup>6</sup>According to EN 12207

Professional's report

Issue Date: [insert text here]  
Building Reference: [insert text here]  
Software used: [insert text here]



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Assessment and Certification

EPB Assessor name: [insert text here]

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[\[link to EPC database\]](#)

# Calculated EPB Assessment

## Partial EP Indicators

### Envelope

#### Thermal Bridges

##### Type of junction i

Linear Thermal Transmittance	[Value]	W/K
Length	[Value]	m

##### Type of junction i

Linear Thermal Transmittance	[Value]	W/K
Length	[Value]	m

##### Type of junction i

Linear Thermal Transmittance	[Value]	W/K
Length	[Value]	m

##### Type of junction i

Linear Thermal Transmittance	[Value]	W/K
Length	[Value]	m

#### Air tightness

Air change rate at 50 Pa <sup>7</sup> <small><sup>7</sup>According to EN 13829</small>	[Value]	1/h
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Issue Date: [insert text here]  
Building Reference: [insert text here]  
Software used: [insert text here]



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# Calculated EPB Assessment

## Partial EP Indicators

### Technical Building Systems

[Technical Building Systems I]

**Service(s)** [Value]

**Overall Rated Efficiency** [Value] %

#### Generation

Technology [Type]  
Energy carrier [Type]  
Rated power [Value] kW  
Effective rated output [Value] kW  
Rated efficiency [Value] %  
Renewable contribution [Value] %  
Metering [Type]  
Control [Type]

#### Distribution

Typology of circuit [Type]  
Insulation of pipes [Type]  
Circulation device [Type]  
Control [Type]

#### Emission

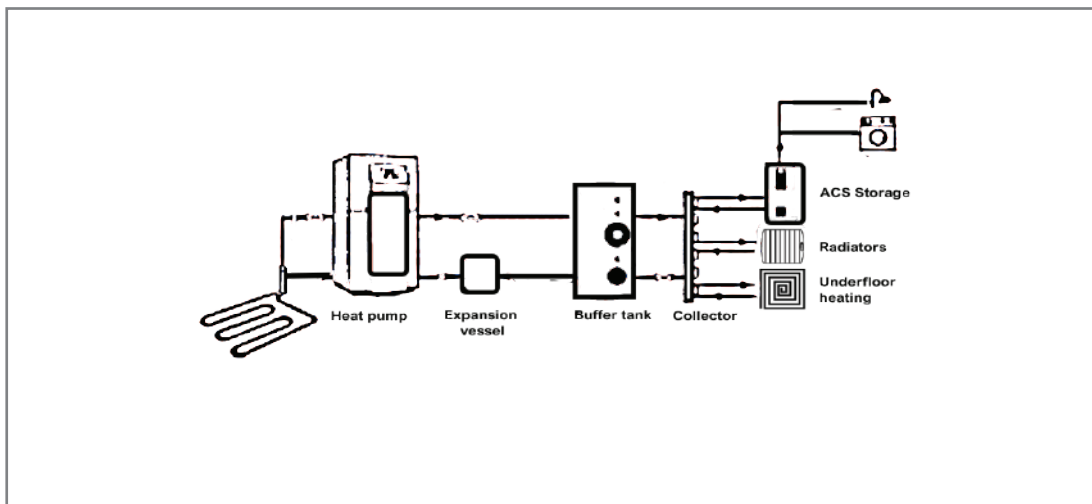
Technology [Value]  
Control [Type]

#### Storage

Capacity [Value] m<sup>3</sup>  
Control [Type]

**Reporting of performance** [Type]

Professional's report



\*Technical scheme drawn by building assessor

Issue Date: [insert text here]  
Building Reference: [insert text here]  
Software used: [insert text here]



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EPB Assessor name: [insert text here]

EPC Reference: [insert text here]

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# Calculated EPB Assessment

## Partial EP Indicators

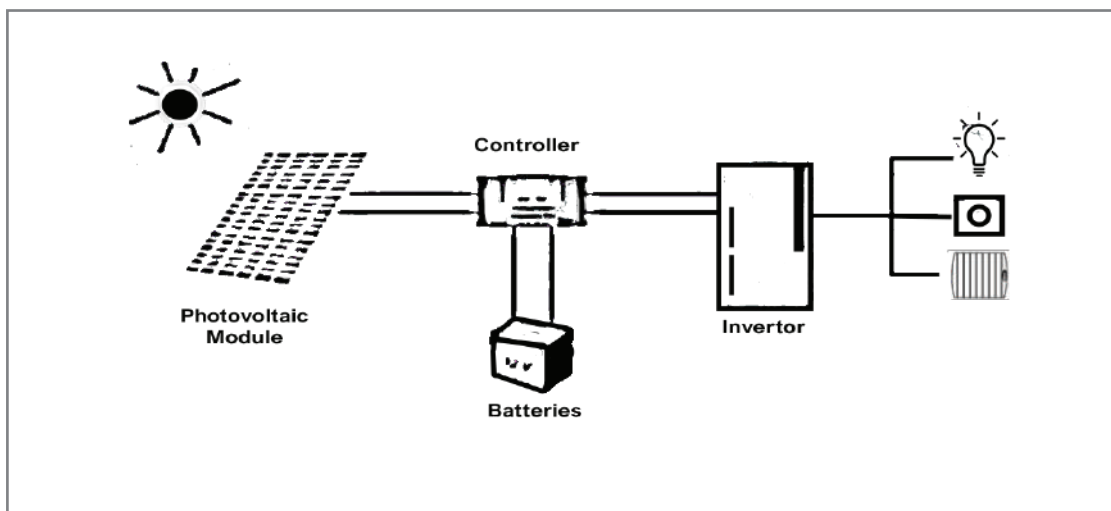
### Electricity Production

#### Photovoltaics

Technology	[Type]	
Installed Peak Power	[Value]	kWp
Nominal efficiency	[Value]	%
Orientation	[Value]	°
Inclination	[Value]	°
Possibility to export electricity to the grid	[Type]	
Inverter type	[Type]	
Reporting of performance	[Type]	

#### Storage

Technology	[Type]	
Installed Peak Capacity	[Value]	kWh
Report of performance	[Type]	
Control	[Type]	



*\*Technical scheme drawn by building assessor*

Professional's report

Issue Date: [insert text here]  
Building Reference: [insert text here]  
Software used: [insert text here]



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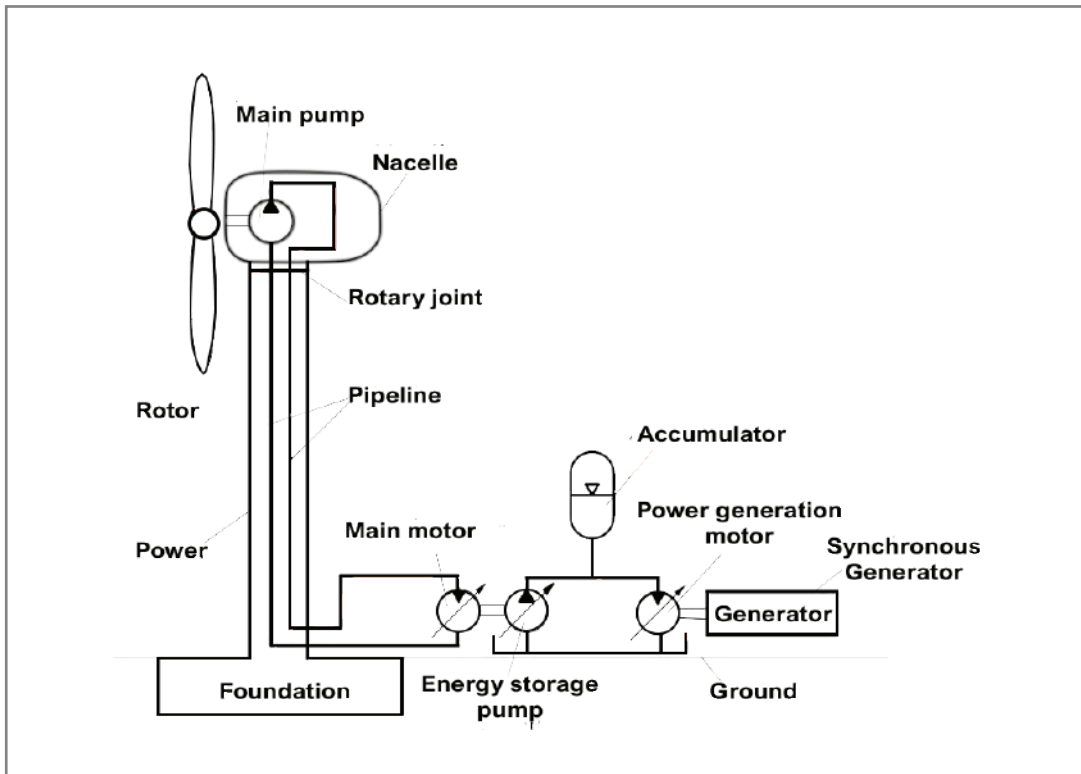
# Calculated EPB Assessment

## Partial EP Indicator

### Electricity Production

#### Wind Turbines

Technology	[Type]	
Installed Peak Power	[Value]	kWp
Nominal efficiency	[Value]	%
Possibility to export electricity to the grid	[Type]	
Inverter type	[Type]	
Reporting of performance	[Type]	



*\*Technical scheme drawn by building assessor*

Professional's report

Issue Date: [insert text here]  
Building Reference: [insert text here]  
Software used: [insert text here]



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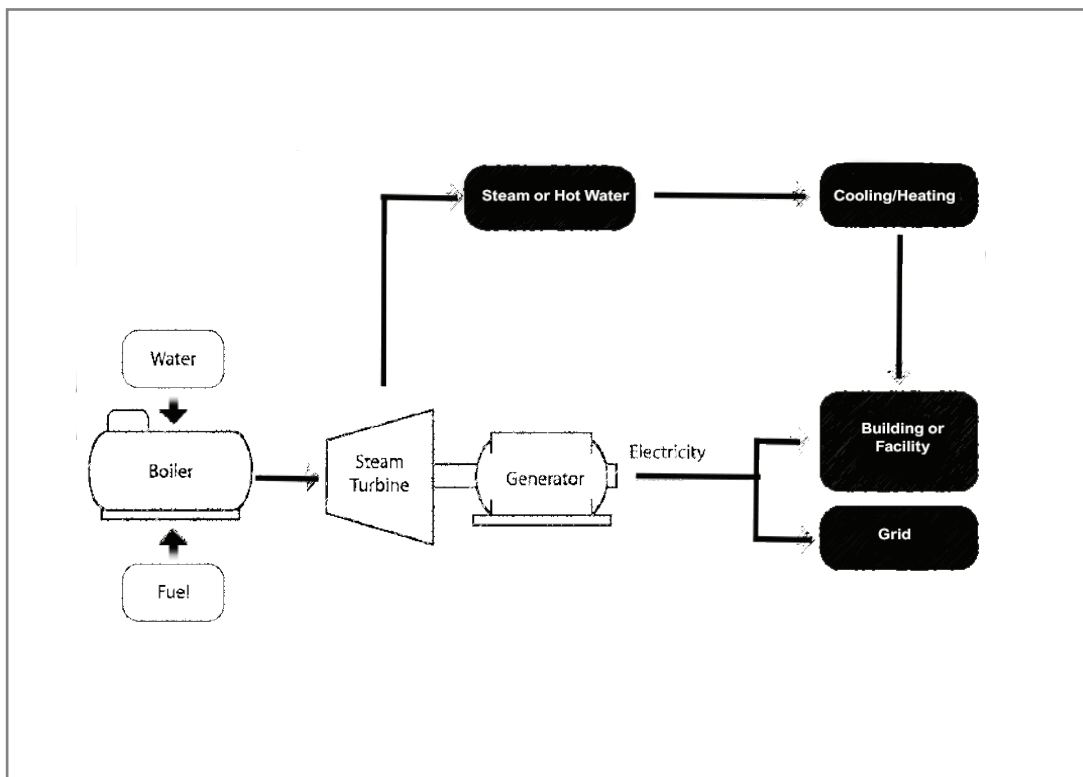
# Calculated EPB Assessment

## Partial EP Indicators

### Electricity Production

## Combined Heat and Power

Technology	[Type]	
Installed Peak Power	[Value]	kWp
Nominal efficiency	[Value]	%



*\*Technical scheme drawn by building assessor*

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Issue Date: [insert text here]  
 Building Reference: [insert text here]  
 Software used: [insert text here]



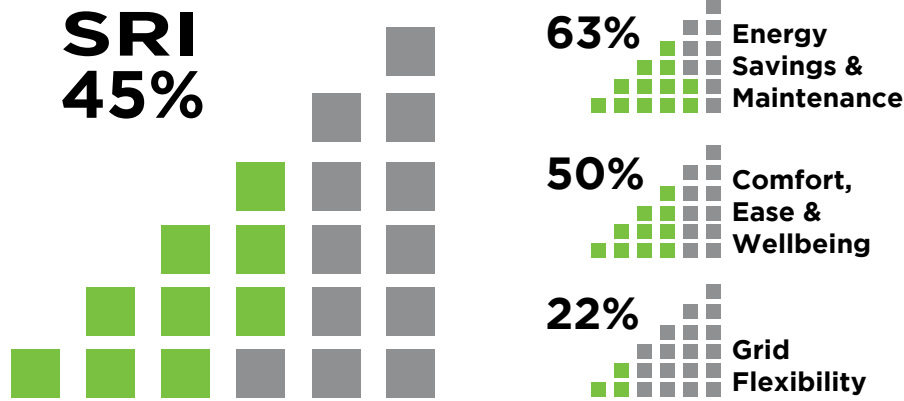
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 EPC Reference: [insert text here]

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# Calculated EPB Assessment

## Smart Readiness Indicator



Professional's report

### IMPACTS

DOMAINS

	Energy efficiency	Maintenance and fault protection	Comfort	Convenience	Health and well-being	Information to occupants	Energy flexibility & storage	<b>SRI</b>
<b>Total</b>	<b>39%</b>	<b>18%</b>	<b>60%</b>	<b>71%</b>	<b>48%</b>	<b>59%</b>	<b>0%</b>	<b>42%</b>
Heating	32%	18%	62%	55%	24%	74%	0%	
Sanitary hot water	17%	0%	45%	70%	67%	83%	0%	
Cooling	65%	51%	78%	72%	61%	55%	0%	
Controlled ventilation	41%	0%	55%	60%	34%	44%	0%	
Lighting	85%	14%	90%	100%	83%	15%	0%	
Dynamic building envelope	10%	0%	31%	56%	22%	46%	0%	
Electricity	10%	0%	-	-	-	68%	0%	
Electric vehicle charging	-	38%	-	82%	-	84%	0%	
Monitoring and control	52%	43%	62%	72%	45%	64%	0%	

Issue Date: [insert text here]  
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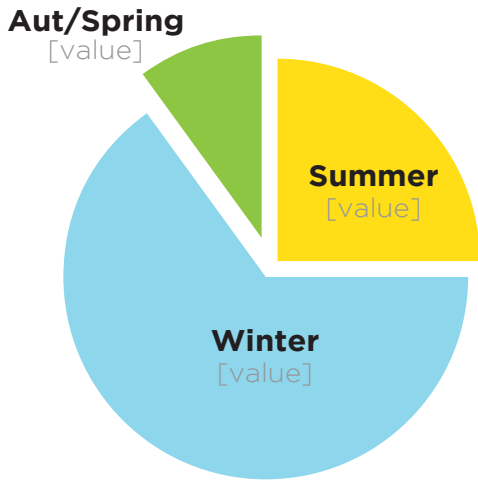
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# Calculated EPB Assessment

## ALDREN Thermal Score

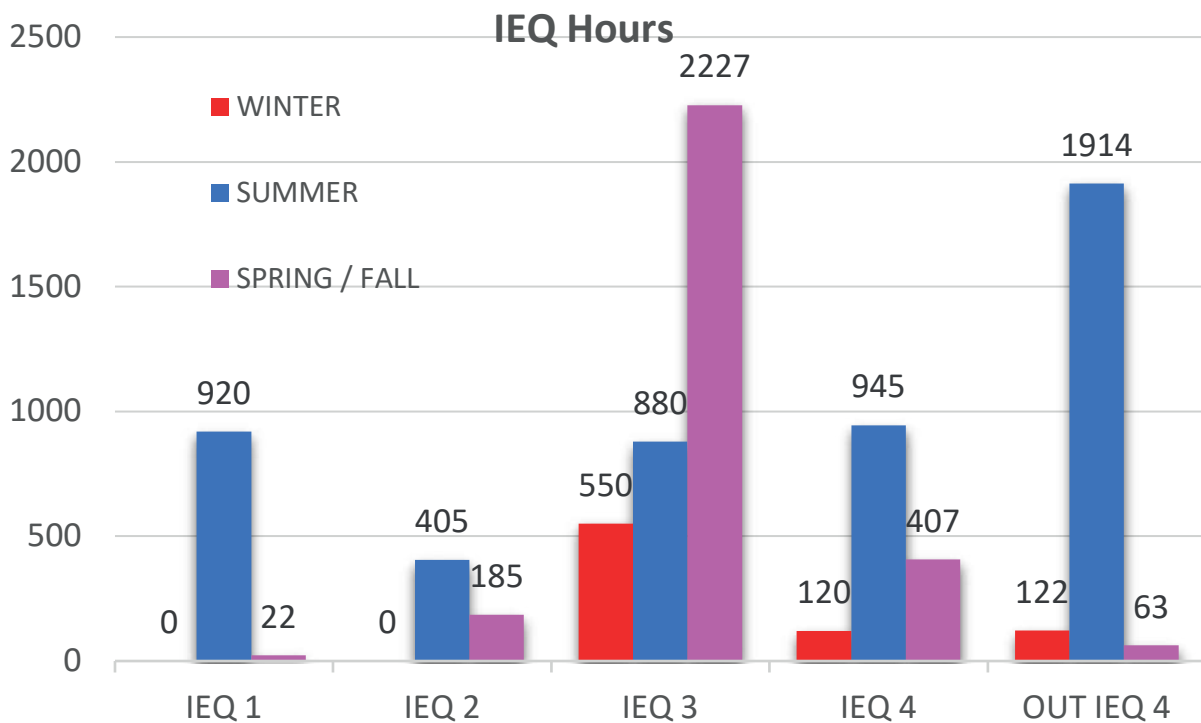
### Hours in the year



### Thermal Score

Season	Occupied (h)	Score
❄ Winter	[Value]	1.9
☀ Summer	[Value]	2.8
🍂 Aut./Spring	[Value]	2.6
<b>Total:</b>	[Value]	<b>0.6</b>

Professional's report



**This Energy Performance Certificate  
has been created within the**



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## Project

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## OUR TEAM

**TNO**



**Atecyr**

**comfort consulting**



**EnEffect**



**HUYGEN**  
INGENIEURS & ADVISEURS



**ISSO**



**TAL TECH**

**tipee**



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