

# **ENERGY**

## ENERGY USE

## 1. Demand on individual products and construction elements

Have the chosen products and construction solutions been evaluated from a cost-efficient, lifecost perspective and maintenance view?

Yes: No: Comments:

#### 2. Architectural design solutions

Have architectural design solutions been used to reach a holistic Approach of the building, as well as to reach a low energy demand?

Yes:	
No:	
Comments:	

Comments:

## 3. Demand on Individual appliances

Have the best energy-performing solutions for appliances been chosen?

Yes:	
No:	
Comments	

## **ENERGY SUPPLY**

#### 4. Design

Has integration of renewable energy been worked with as a part of the building design and typology of the building and the plot?

Yes:	
No:	
Comments:	

#### 5. Origin of energy supply

Has the energy supply been evaluated from a cost perspective, and how was the decision about the origin of the energy supply made?

Yes:	
No:	
Companya	



# PRIMARY ENERGY PERFORMANCE

#### 6. Energy use and CO2 emissions

Has the energy demand and the use of renewable energy been optimized in order to use the most cost-efficient solutions with the lowest CO2 emissions?

Yes:	
No:	
Comments:	

#### **ENERGY VALIDATION ON SITE**

#### 7. Onsite control of solutions and products

Has onsite control focused on proving that the energy solutions and products meet the designed level?

Yes:		
No:		
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Comments:

## 8. Air permeability of the building

Has the air permeability of the building been tested?

Yes:	
No:	
Comments	

## 9. Thermal bridges

Have the thermal bridges been evaluated during the construction phase?

Yes: No:

Comments:

#### 10. Qualification of the controller

Has the control been established by a certified expert?

Yes:	
No:	
Companyanta	



# COMFORT

## DAYLIGHT

#### 11. View

Are windows located to offer the best possible views to the exterior environment (sky and surroundings)?

Yes:	
No:	

Comments:

#### **12. Visual transmittance**

Are windows (providing a view to the outdoors) selected to have the highest possible visible transmittance?

Yes:	
No:	
Commonter	

Comments:

## 13. Glare Management

Have the following aspects been considered to avoid risk of glare?

Transmittance?

Yes:	
No:	
Comments:	

Shading?

Yes:	
No:	
Comments	

Design?

Yes:	
No:	
Comments	:

Reflection?

Yes:	
No:	
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Comments:

Redirection?

Yes:	
No:	
Comments	:

Geometry and layout of the rooms?



Yes:	
No:	
Comments	

## 14. Daylight in secondary rooms

Have circulation zones and bathrooms access to daylight?

Yes:	
No:	
Comments:	

#### THERMAL ENVIRONMENT

#### 15. Individual control, winter

Is it possible to adjust the temperature at room level according to momentary needs, e.g. with adjustable thermostats?

Yes:	
No:	
-	

Comments:

#### 16. Individual control, summer

Is it possible to manually influence the thermal conditions in each room, e.g. by opening windows or adjusting solar shading? In the case of mechanical cooling systems, is it possible to adjust the temperature at room level, e.g. with adjustable thermostats?

Yes:	
No:	
Comments	

#### 17. System interface

Have the climate system interfaces (e.g. wall thermostats) been selected to be as intuitive and simple as possible?

Yes:	
No:	
-	

Comments:

#### 18. Draught

Have ventilation openings (including windows, ventilation grilles and mechanical ventilation devices) been located and detailed so that discomfort caused by draught is minimized?

Yes:	
No:	
Comments	

**Note:** Adjustability (e.g. of operable windows and ventilation grilles) is an important issue to take into account in this context)



# **INDOOR AIR QUALITY**

## **19. Individual control**

Is it possible to manually influence the air change rate in the rooms (especially living room, kitchen and bedrooms), e.g. by opening windows, and if mechanical ventilation is installed, is it possible to adjust the airflow rate at three or more levels?

Yes:	
No:	
Comments	

#### 20. Dampness

To avoid problems related to dampness and mould, is it guaranteed that there is sufficient extraction in rooms with periodic damp-production peaks (esp. kitchens, bathrooms and toilets)?

Yes:	
No:	
Comencentes	

Comments:

*Note: The minimum exhaust air flow in these 'wet rooms' should be as specified in national building codes or guidelines* 

## 21. Low-emitting building materials

Have indoor climate-labelled materials been used where possible?

Yes:	
No:	
Comments	

*Note: Examples of indoor climate labels: the Danish Indoor Climate label, the Finnish M1 label, the German AgBB or GUT label or the French label* 

## NOISE AND ACOUSTICS

#### 22. Inside system noise

Has it been ensured that noise from all mechanical services in continuous operation is below 25 db(A) in living rooms, kitchens and other main rooms, and below 20 db(A) in bedrooms, study rooms and other rooms that need extra quietness?

For inside system noise, exposure to system noise (e.g. from ventilation or heating systems) is determined with a sound pressure measurement e.g. as described in ISO 140: 1998.

Yes:	
No:	
Comments	



## 23. Outside noise

If the building is in a noisy environment, have sufficient sound insulation measures been taken?

Yes:	
No:	
Comments	

Comments:

## 24. Acoustic privacy

Are inner walls and floor divisions designed to reduce noise transmission between rooms? Is there at least one room (and its entrance door) that is extra sound insulated?

Yes:	
No:	
Comments	

#### **ENVIRONMENT**

## **25. ENVIRONMENTAL LOADS**

LCA of the building

Were the results of an LCA used to optimise the design?

Yes:	
No:	
Comments	

## **FRESH WATER CONSUMPTION**

## 26. Appliances

Have water saving appliances been installed?

Yes:	
No:	
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Comments:

## 27. Use of grey or rain water

Is grey or rain water used to reduce the water consumption in garden, toilets and for washing?

Yes:	
No:	
Commenter	



## **ECOLOGICAL IMPACTS**

## 28. Job site management

Were the following items considered to minimise the impact of the job site?

Optimise the management of construction waste?

Yes:	
No:	
Comments:	

Limit nuisance and pollution?

Yes:		
No:		
-	-	

Comments:

Minimise resource consumption?

Yes:	
No:	
Comments	:

Respect workers?

Yes:	
No:	
Comments	

## 29. Disassembly

Has the building been designed so that 70% by weight of the building will be able to be reused, recycled or backfilled at its end of life? This will meet and anticipate the European Directive on construction waste.

Yes:	
No:	
Comments	

## **30. Biodiversity**

Has respect for fauna, flora and the environment been considered, in order to provide nests for birds, create green vegetation, minimize chemical treatment, etc.?

Yes:	
No:	
Comments	



## EXTERNAL CONTEXT AND ACCESSIBILITY

## **31. Building traditions**

Does the design of the building reflect a relationship with regional building traditions? E.g. were regional materials, architectural typology and craftsmanship analysed and used as design parameters?

Yes:		
No:		
-	-	

Comments:

## **32.Active outdoor living**

Is the design of the building adapting to the potentials and constraints of the local climate? E.g. creating private outdoor spaces with a comfortable climate and access to sunlight that encourage healthy active outdoor living.

Yes:	
No:	
Comments:	

#### 33. Streets and landscapes

Does the design impact on existing streets and landscapes? E.g. provision for children to play safely outside the house and supporting the public outdoor space for local behaviour, needs and tradition?

Yes:	
No:	
Comments	

#### 34. Infrastructure

Does the infrastructure support healthy, comfortable and ecological transport? E.g. connection and distance to nearest public transport for commuting, distance to schools and supermarket and the possibility of easy and safe use of bicycles.

Yes:	
No:	
Comments	

# 35. Accessibility

Does the design take into account physically challenged people, children, elderly people or other groups with special needs?

Yes:	
No:	
Comments:	



## 36. Ecology and land use

Does the building optimise the relationship with the local ecology and land use and at the same time minimise environmental risks? E.g. maximising surface for seepage of rainwater, minimising use of land.

Yes:	
No:	
Comments	

#### **37. Climate changes**

Were possible risks caused by climate changes (storms and flooding) identified and limited in the design of the building and landscape?

Yes:	
No:	
Comments	

## **BUILDING MANAGEMENT**

#### 38. Management of energy

Training of building users in energy-efficient behaviour. Yearly performance check of building and systems (service contract)?

Yes: No: Comments:

User guidelines on energy-efficient operation of building and technical systems

Yes:	
No:	
Comments:	

Continuous (hourly) monitoring and display of energy use and production

Yes: No: Comments:

Commissioning of building, building services and renewable energy systems during the first year of operation.

Yes:	
No:	
Comments	



## 39. Management of indoor climate

Training of building users in efficient behaviour. Yearly performance check of building and systems (service contract)?

Yes:	
No:	
Commonter	

Comments:

## 40. Management of environment

Training of building users in resource-efficient and responsible environmental behaviour. Yearly performance check of building and systems (service contract)

Yes:	
No:	
Comments	

User guidelines on optimal maintenance and water-efficient operation of building and technical systems?

Yes:	
No:	
Comments	

Continuous monitoring and display of water use?

Yes:	
No:	
C	

Comments:

Commissioning of building, building services and water systems during the first year of operation?

Yes:	
No:	
C	