

## **CONSTRUCTION FEATURES OF AN ENERGY-EFFECTIVE BUILDING POWERHOUSE BRATTØRKAIA**

Azimova Asasloy

Assistant Teacher, Andijan State Technical Institute

### **Abstract**

This in the article energy economical building construction features seeing This is of the work purpose energy economical buildings analytical check was.

**Keywords:** Energy consumption ; savings ; North; energy.

### **Introduction**

Powerhouse BrattØrkaia ( Brattorkaya ) in the world the most North positive energy building tomorrow day buildings in construction new barney to install strives for : this whole life during consumption since according to more energy working releases.



Picture 1. of the building himself/herself and Central of the train station  
pedestrians bridge with connection on the side facade

Powerhouse Brattørkaia Norway Trondheim in the city , land 63° north of the equator located is there sun light seasons with very changing stands .

To the beach looked at facade of the building the most thin side is the project neighbors with one kind on a scale reading opportunity gives . Black aluminum and sun panels with covered facade close surrounding In Trondheim reflection is enough Average Powerhouse Brattørkaia every day consumption from what he did two even more electricity energy working releases and local micro network through to oneself , to one's neighbor buildings , electricity buses , cars and to the boats again renewable energy delivery gives [1].



Picture 2. Powerhouse Brattørkaia

The project three purpose there is : building by working issued clean energy amount maximum at the level increase , its performance for necessary was energy minimize and tenants and wide public for a pleasant place service to do . Construction place for the day and season during maximum sun the impact provide for caution with chosen . His inclined pentagon roof and your front high part almost 3000 m2 of sun panels with covered possible as much as possible more sun energy collection for strategic placed . This year during total 500,000 kWh clean again renewable energy organization The building mainly city in the center small electricity station two

one-sided task the building to the field energy storage for enough space installed is, it is redundant energy summer in the months almost daytime in the light to keep opportunity gives.



Picture 3. Interior appearance

Building very energy economical daily in the works energy spending fundamentally reduce for one row from technologies uses . Daytime light conditions of the building whole structure along optimized and artificial from the light use is minimized.



Figure 4. Projected master plan of the building

Liquid light technology Application . Lighting for energy spending reduce for building " liquid " called " light " from the concept uses this and of the building activity and to the movement looking at artificial of light smooth growth and to decrease opportunity Together , these strategies to Powerhouse Brattørkaia light for usual comparable in size commerce office of the building half close energy to spend opportunity gives [2].

Ventilation and heating Powerhouse technologies . External space and heat convenience attention too much outside energy efficiency with balancing strategies through building population physical well-being and well-being first to the seat puts . Ventilation system internal in space nice and clean the air provides and soft and wet to the climate has . Office in the landscape ventilation order eater technician air supply devices available . Air on the floor close at low speed in place will be issued and exhaust on the stairs suppression through centralized without done is increased . From this outside the building structural system thermal mass – low emission from concrete consists of It is on the ceiling . important cuts through demonstration is being done .



Picture 5. To the exhibition low emission concrete

His/her efforts Powerhouse Brattørkaia for BREEAM Outstanding certificate has it happened , this of the object ecological , social and economic stability evaluation in the world leader method according to the most high rating . Its decisions Global



temperature Celsius up to 1.5 degrees the rise to limit UNFCCC Paris agreement supports.

This energy economical of the building analytical analysis after spending then, the building consumption since according to more electricity energy working when releasing energy economical said to the conclusion came.

## **References**

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