

# THE SWECO BUILDING IN BERGEN

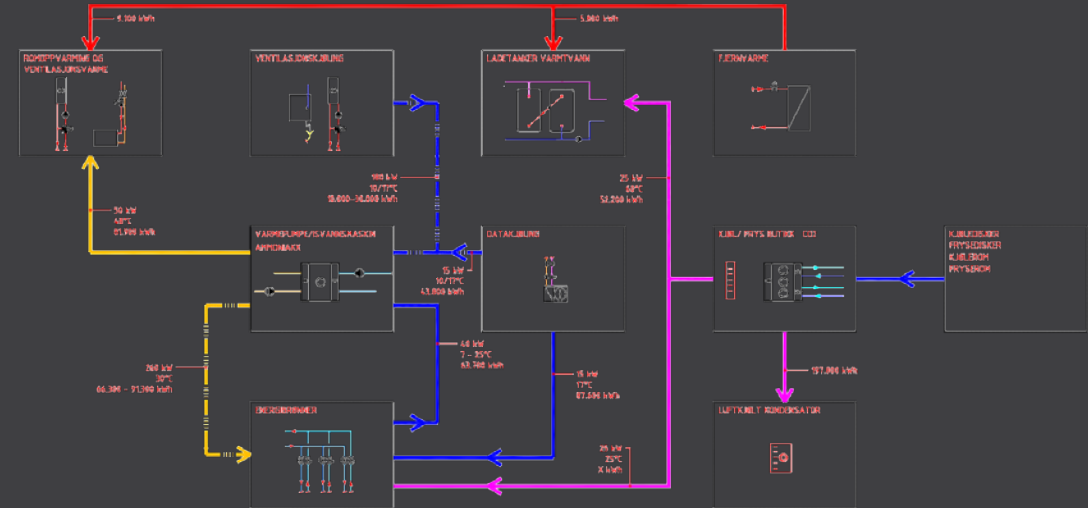


# SWECO'S GOALS FOR PLANNING A NEW OFFICE LOCATION:

- PRIDE FOR OUR EMPLOYEES
- PROFITABLE ENERGY EFFICIENCY
- SHOW EXPERTISE

SWECO DOES NOT OWN THE BUILDING, BUT WE PLANNED THE BUILDING IN COOPERATION WITH THE OWNER.

SWECO LEASE THE OFFICE FOR 5 YEARS WITH AN OPTION FOR 5 ADDITIONAL YEARS



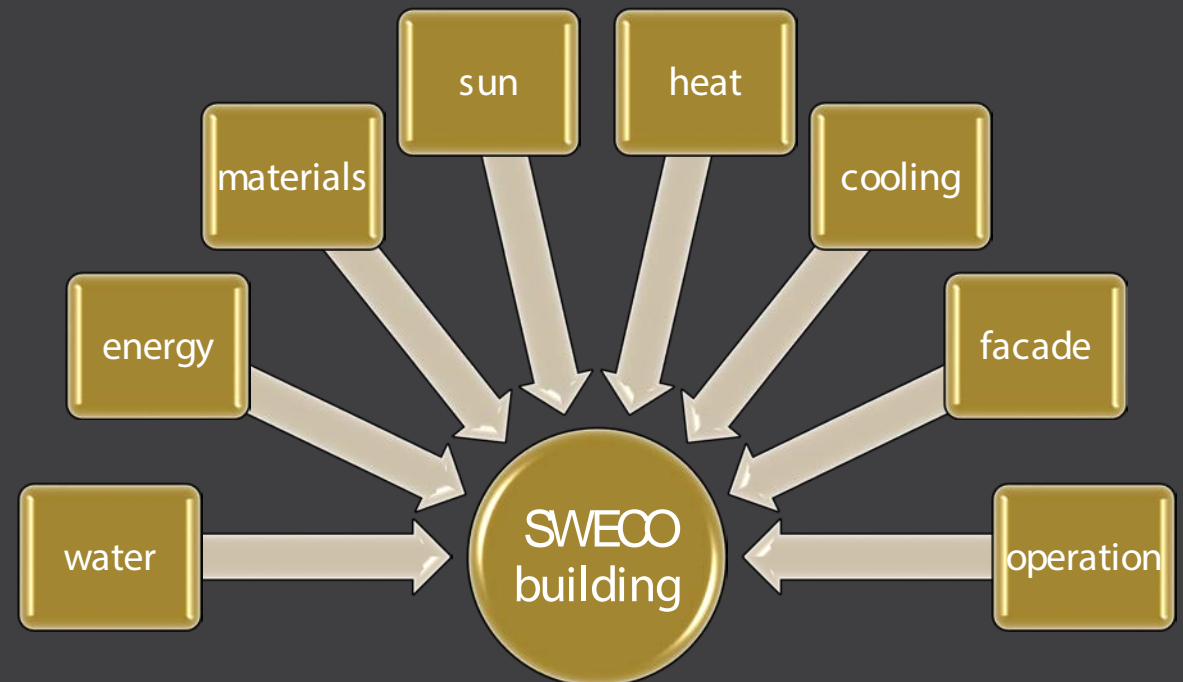
# DEVELOPMENT OF THE PROJECT

- A MULTIDISCIPLINARY EXPERT TEAM DEVELOPED A ENERGY-EFFICIENT BUILDING
- AIMED FOR CERTIFICATION BREEAM EXCELLENT

THE ADDITIONAL COSTS ARE COVERED BY:

- REDUCED ENERGY COSTS
- GOVERNMENTAL SUPPORT

FLEXIBILITY IN THE LEASE

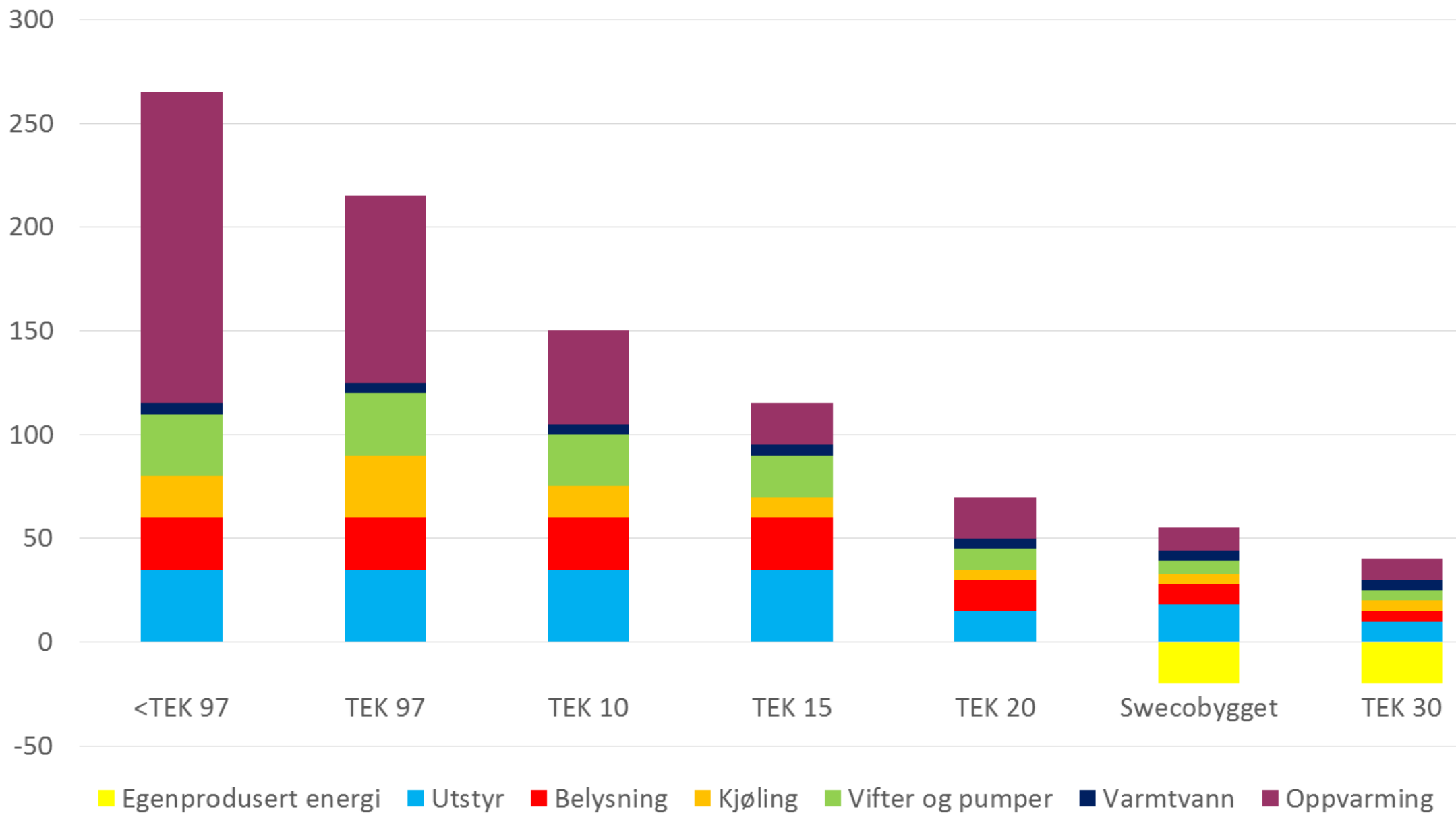


## THE SWECO BUILDING – FACTS:

- 17.300 M<sup>2</sup>
- 3 STOREY OFFICE - SWECO
- 1 STOREY FOODSTORE - MENY
- 3 STOREY UNDER GROUND FOR BIKE AND CAR PARKING
- ENERGY CLASS A+
- BREEAM EXCELLENT



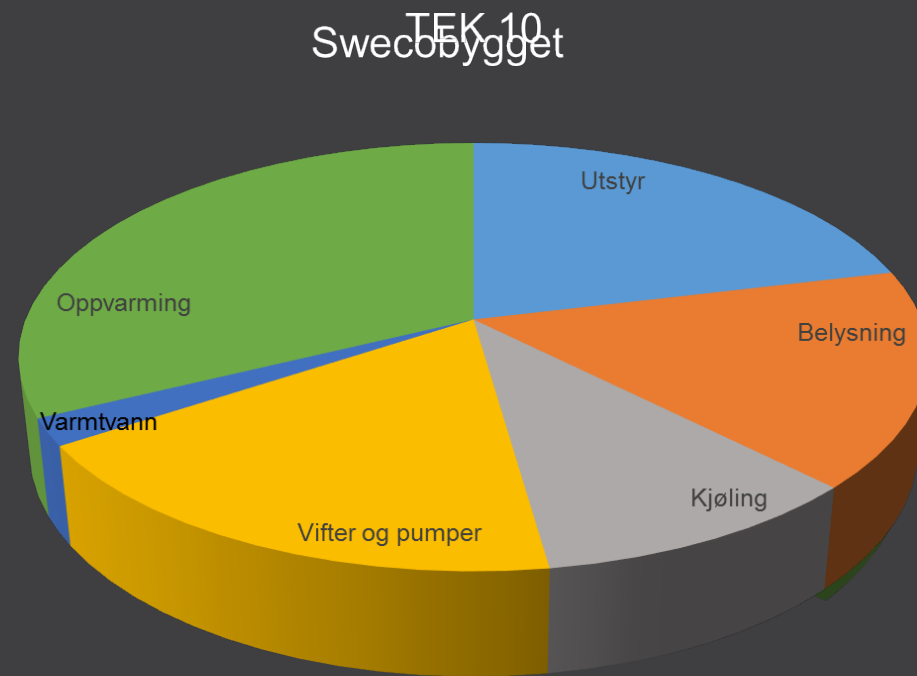
## UTVIKLING I KRAV TIL ENERGIBEHOV



# HOW DID WE GET THERE?

From 150 kWh/m<sup>2</sup>

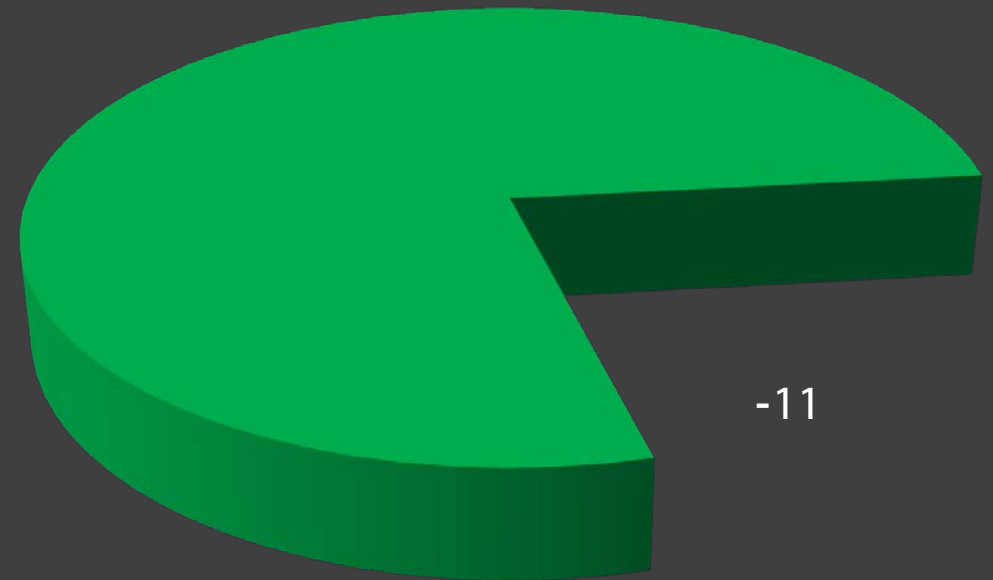
to 35 kWh/m<sup>2</sup>



# COMPACT BUILDING STRUCTURE

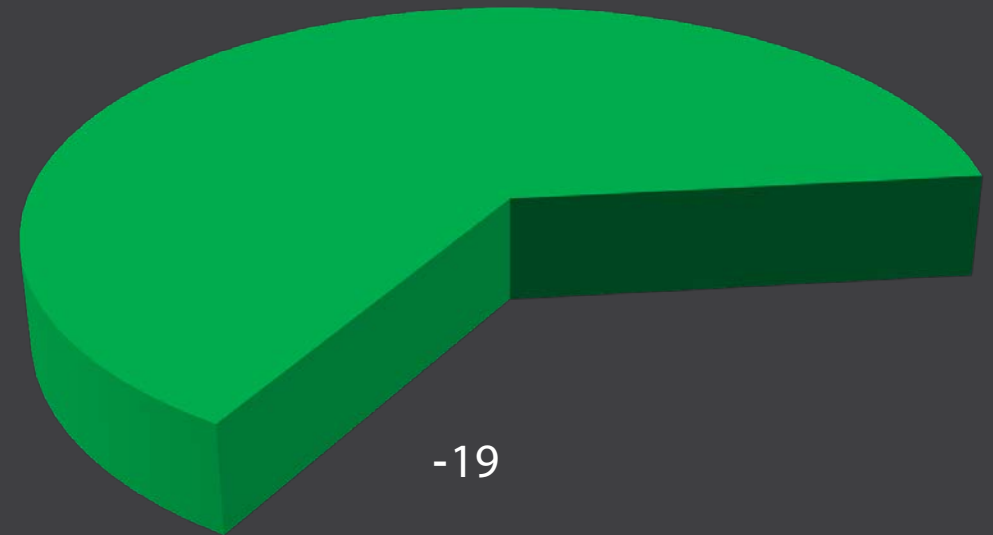
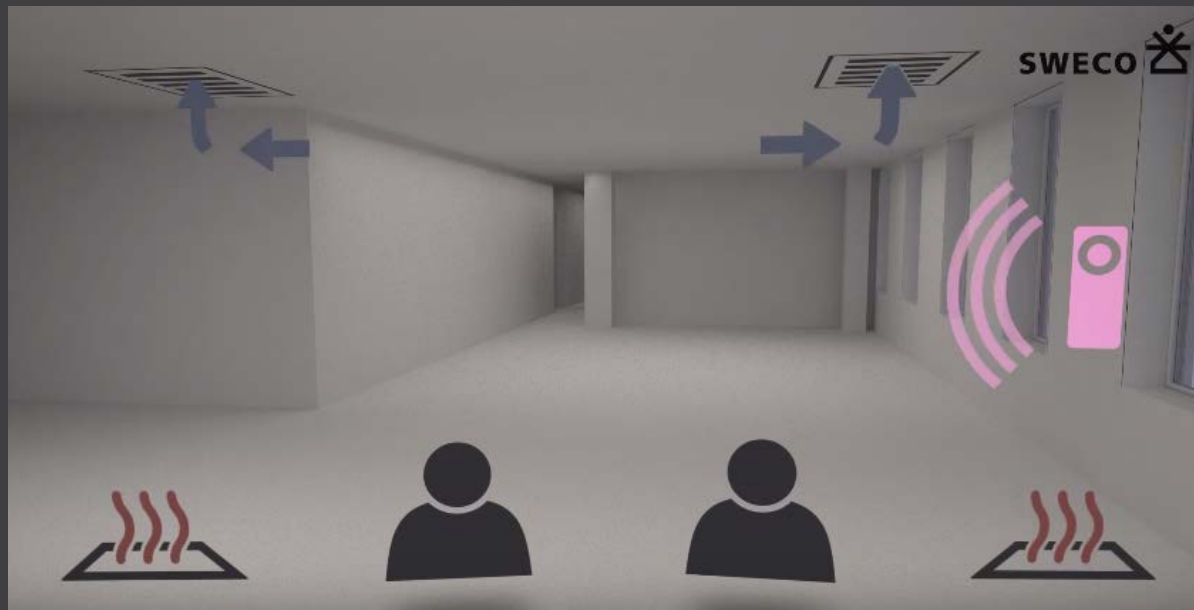


# INSULATION AND AIR-LEAKAGE

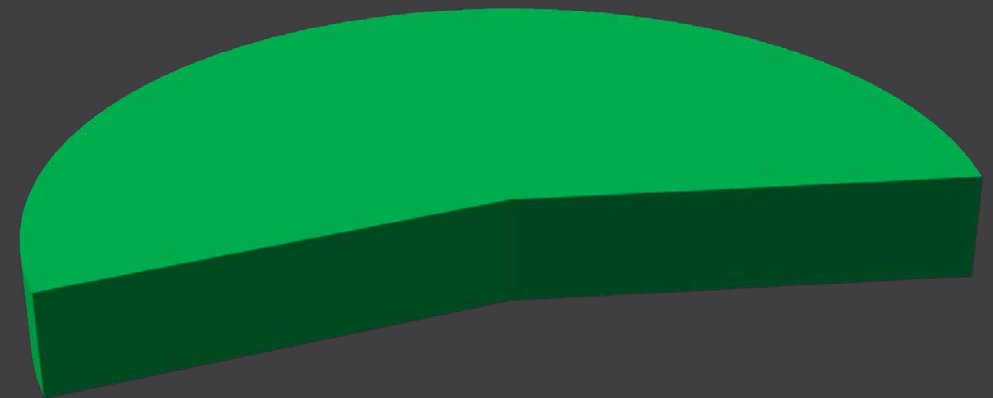




# DEMAND CONTROLLED SYSTEMS

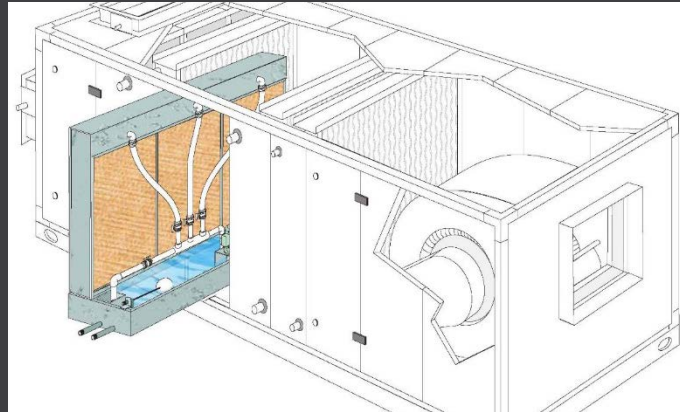


# ENERGY-EFFICIENT LIGHTING



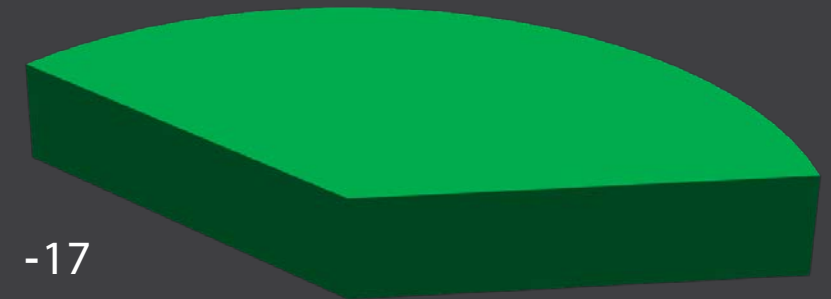
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# ADIABATIC PRECOOLING AND AUTOMATIC SUNSCREENS



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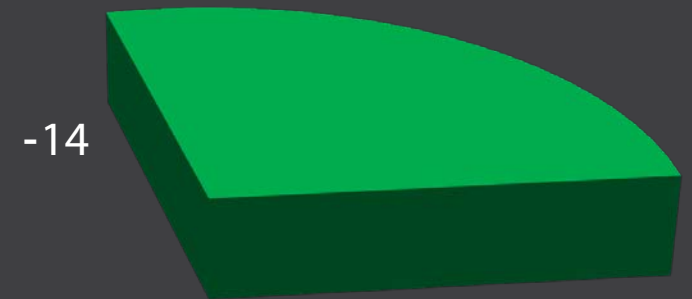
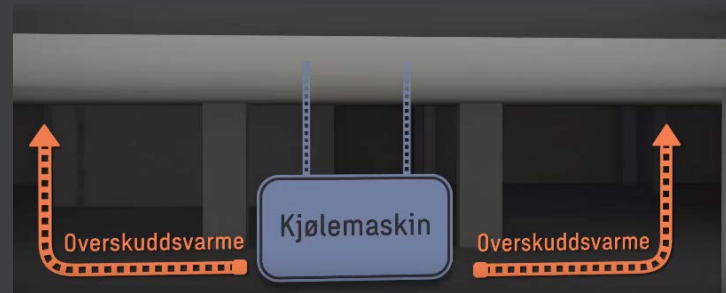
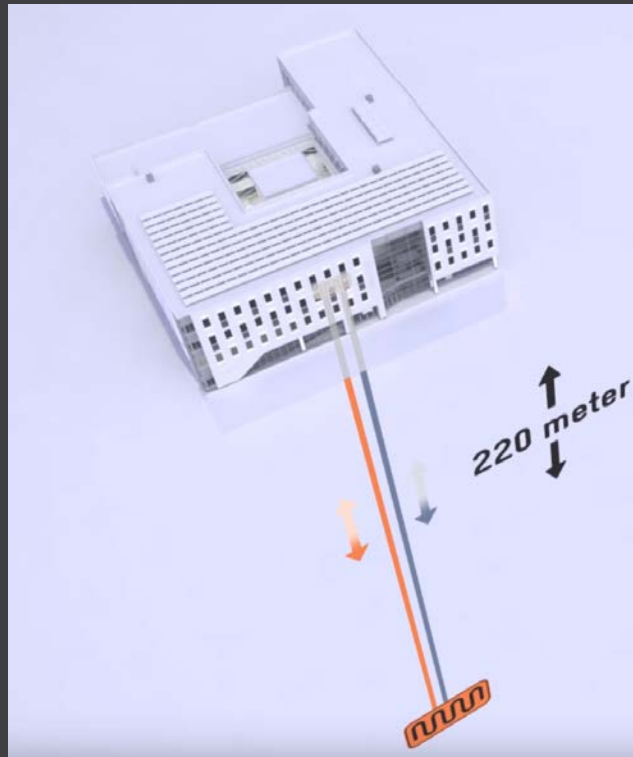
# ENERGY-EFFICIENT EQUIPMENT



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# SURPLUS HEAT

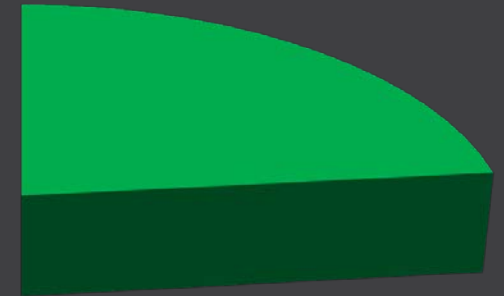
## SELF-PRODUCED RENEWABLE HEAT AND COOLING



# SELF-PRODUCED RENEWABLE ELECTRICITY



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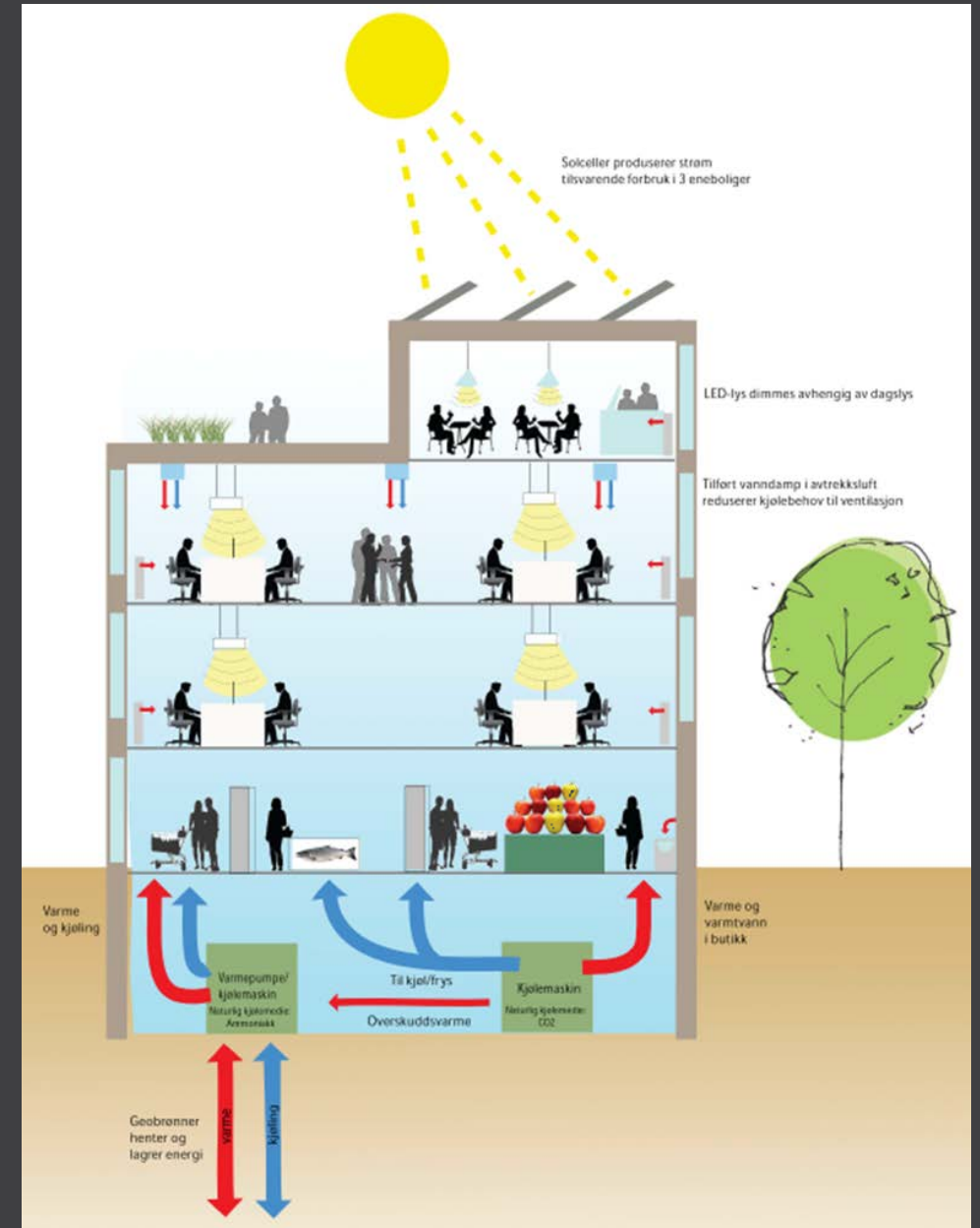




# HOW DID WE ACHIEVE AN ENERGY AND ENVIRONMENT-FRIENDLY BUILDING:

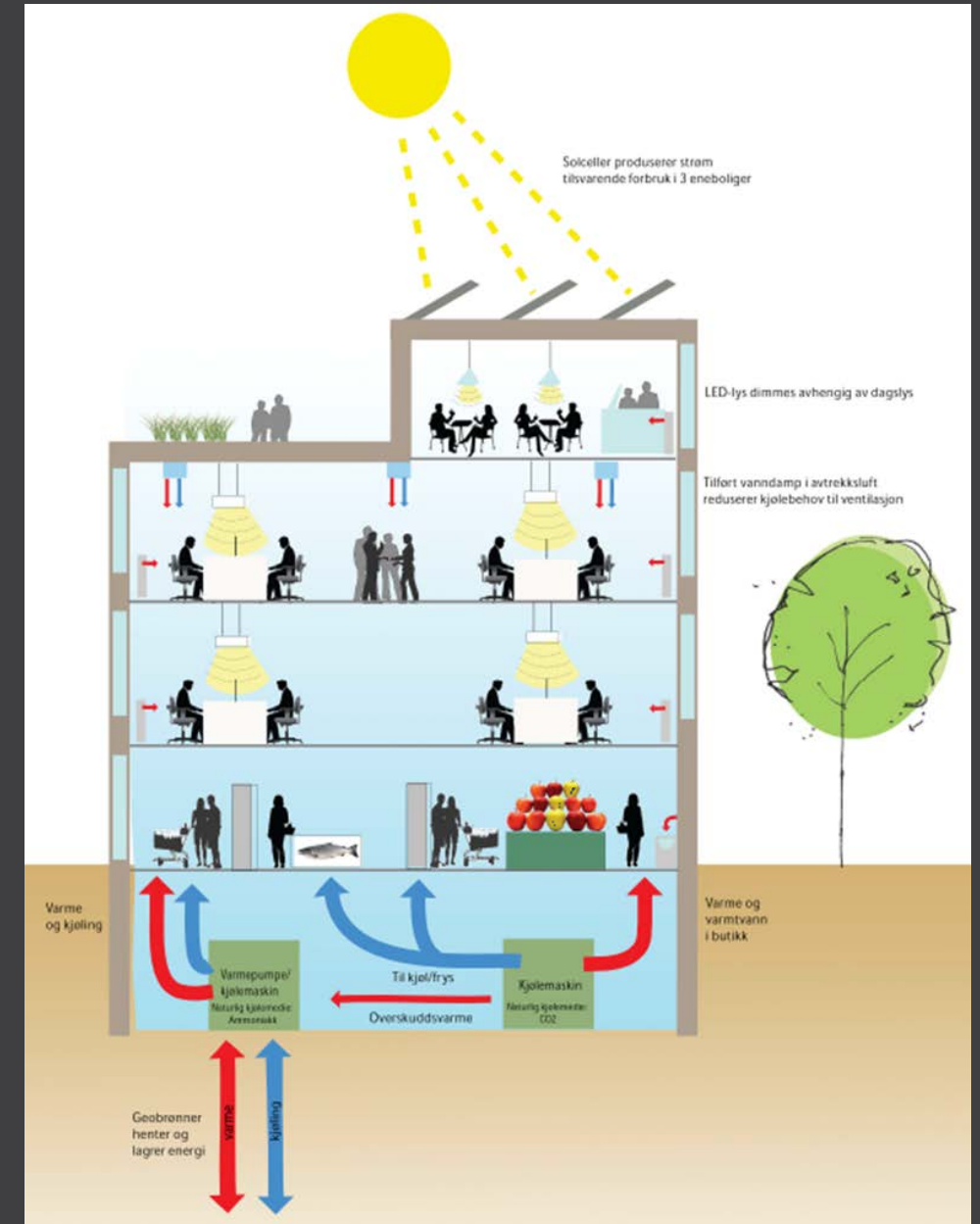
- COMPACT BUILDING STRUCTURE
- INSULATION AND AIR-LEAKAGE AT PASSIVE HOUSE LEVEL
- DEMAND CONTROLLED SYSTEMS
- UTILIZING SURPLUS HEAT IN THE BUILDING
- ENERGY EFFICIENT LIGHTING AND EQUIPMENT
- HEATING AND COOLING WITH BOREHOLES
- NATURAL REFRIGERANT (AMMONIA)
- ADIABATIC COOLING
- SOLAR CELLS

YEARLY ENERGY USE OF 35 KWH/M<sup>2</sup>  
BREEAM EXCELLENT



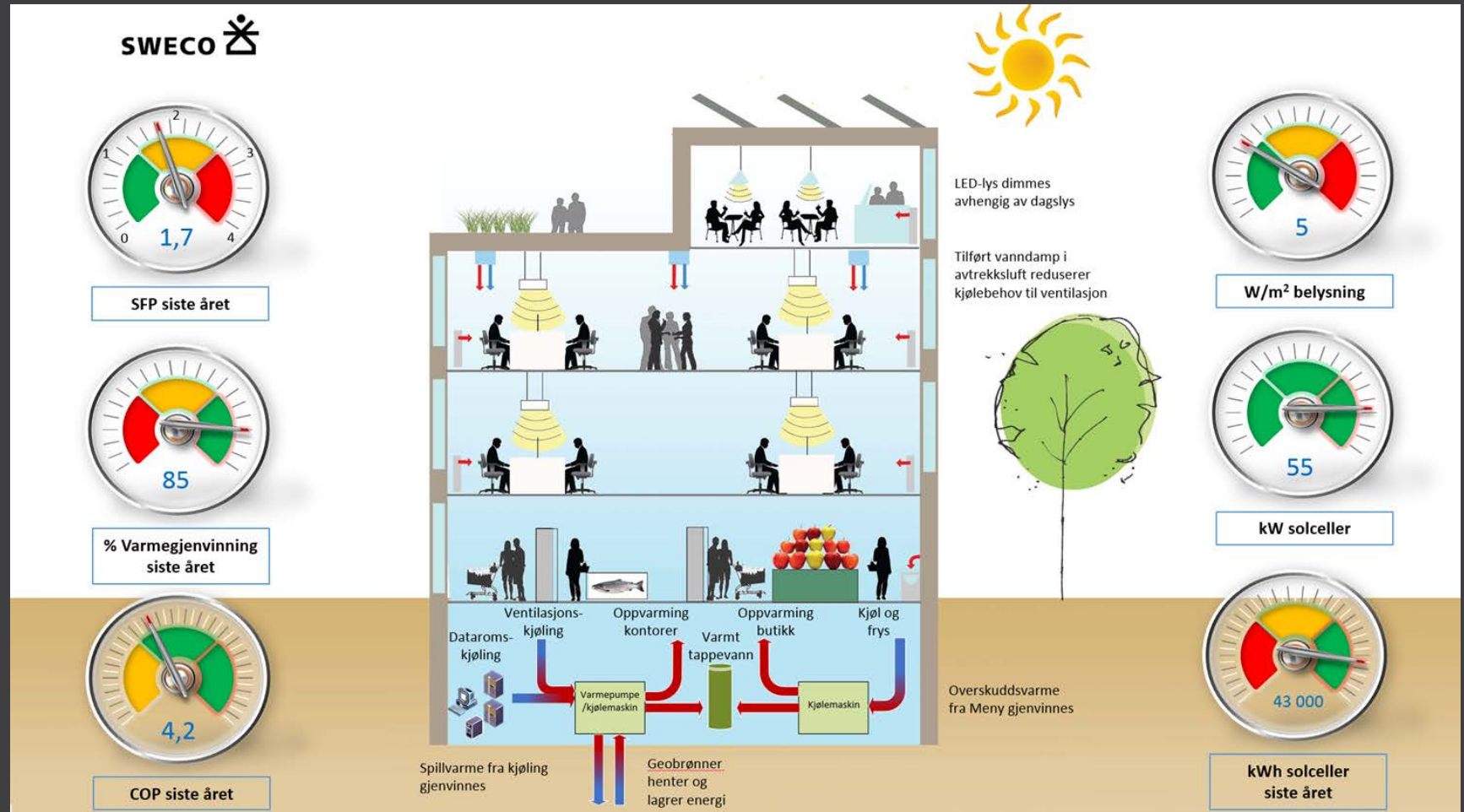
# THIS IS HOW WE REACHED A YEARLY ENERGY USE OF 35 KWH/M2 AND BREEAM EXCELLENT

- UTILIZE KNOWN TECHNOLOGY
- COMPLEX SOLUTIONS OPTIMIZED TO THE CONDITIONS GIVEN FOR THE BUILDING
- KEEPING THE ENERGY WITHIN THE SYSTEM





# CONTROL AND MONITORING



THANK YOU FOR YOUR ATTENTION!

