

The development implementation of new competences
and new technologies for clean water, energy and food

STIG Workshop, Trondheim Octobre 5th 2011



Upgrade Frankfurt

"Passive house"

School, Germany



Xavier DEQUAIRE,
Siv. Ing.

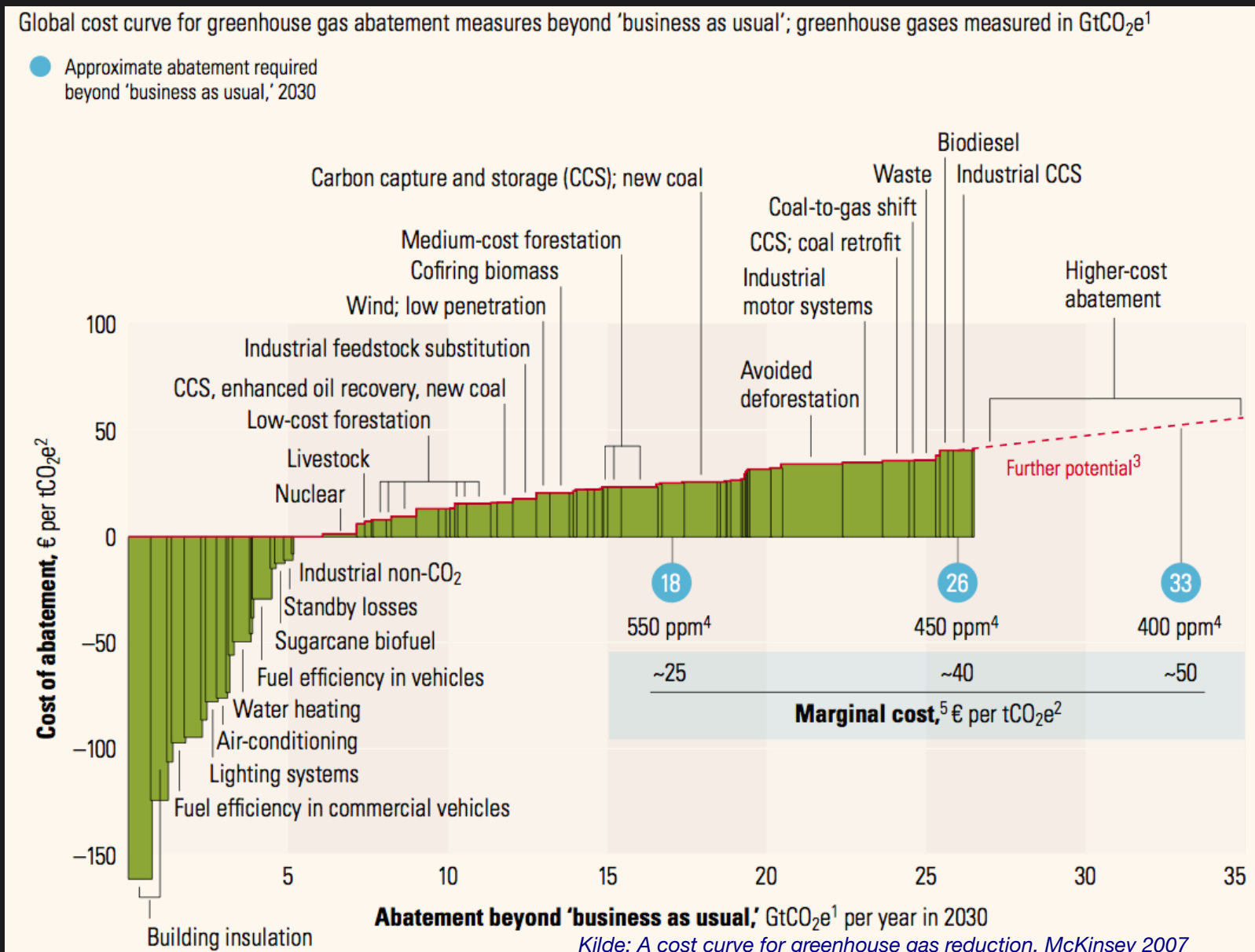


HØGSKOLEN I OSLO
OG AKERSHUS

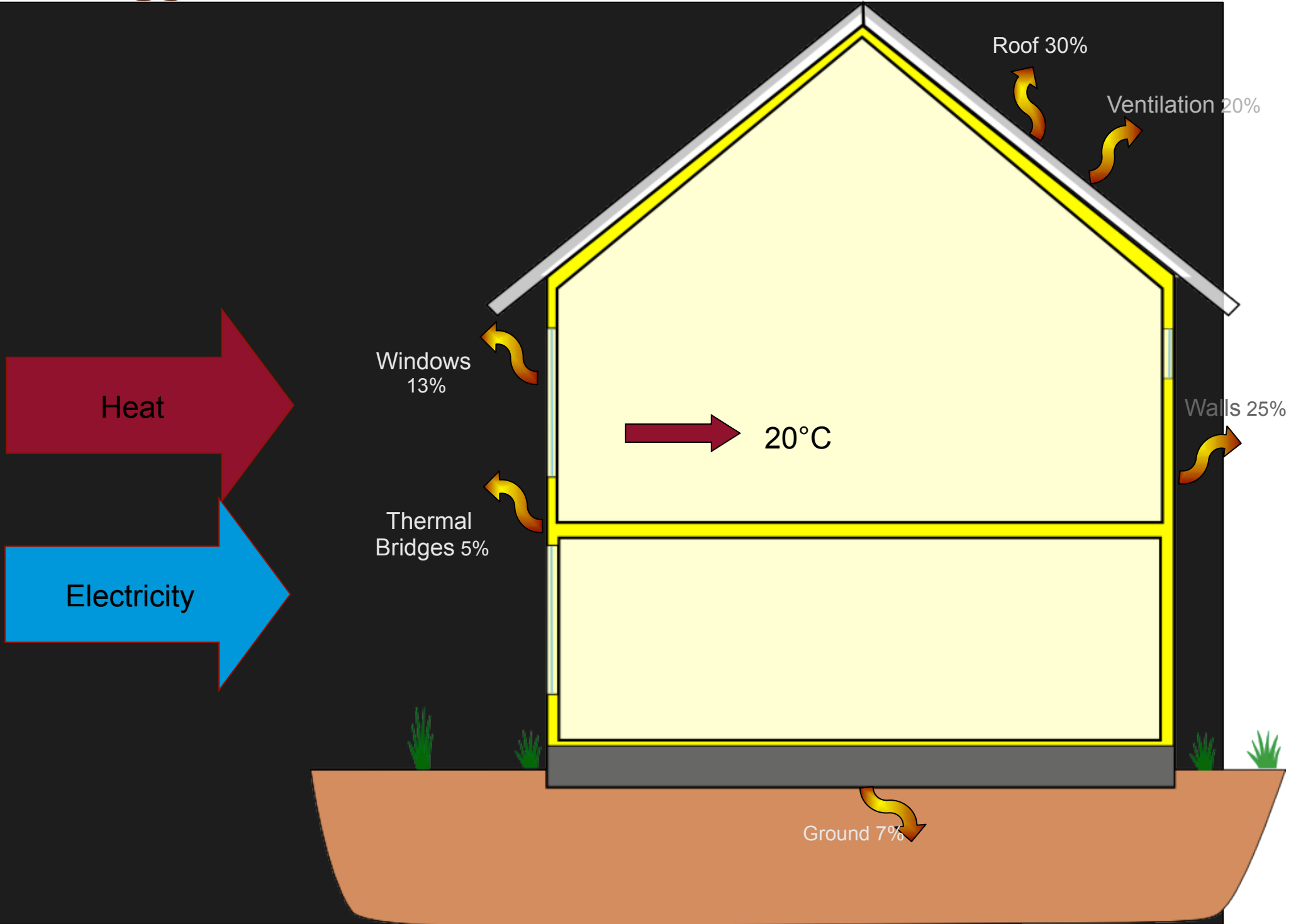
European master in Renewable Energies
PhD student at Hioa

Energy, greenhouse gas, economy

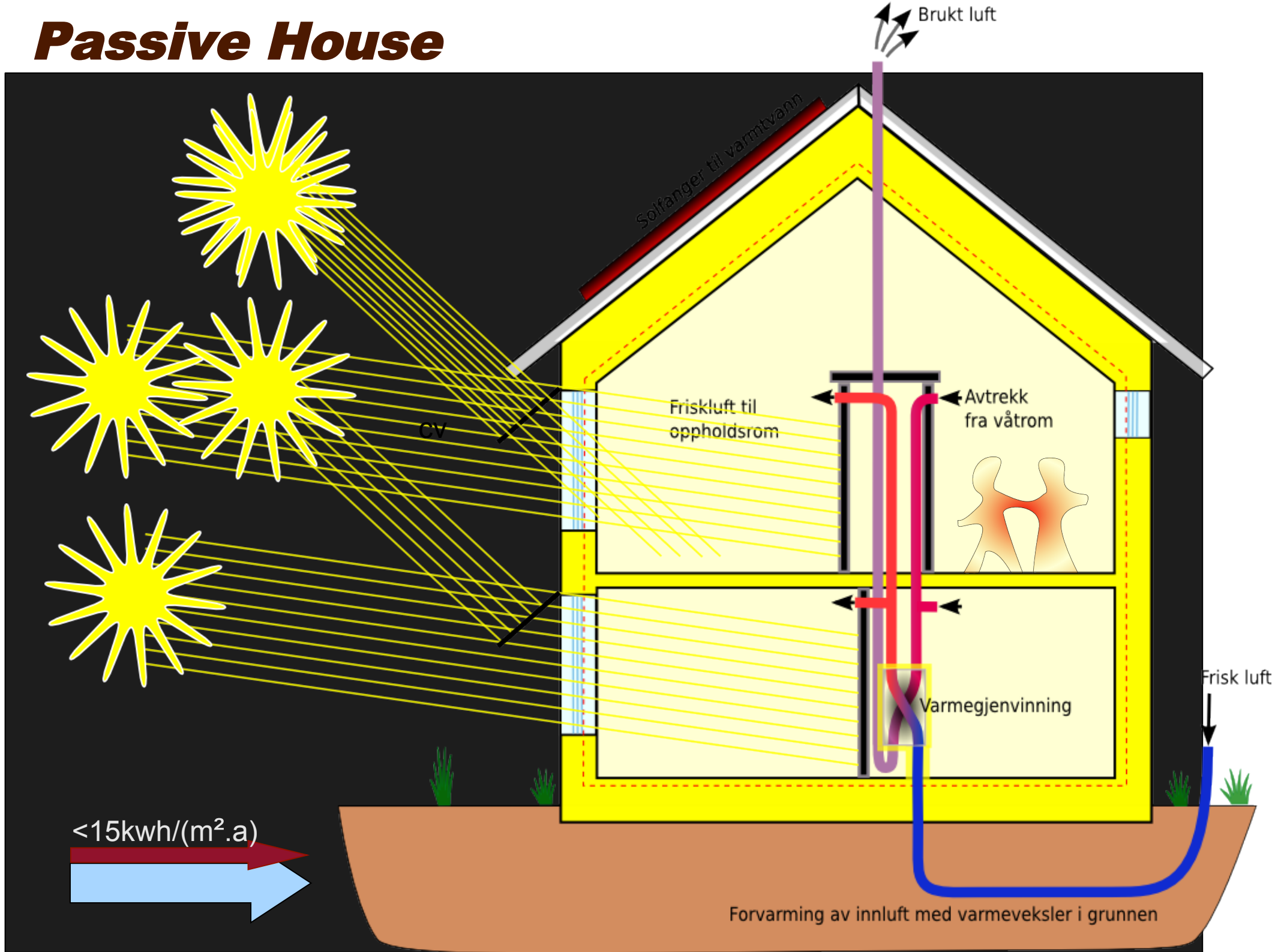
Buildings = 50 % energy use og 25 -35 % of greenhouse gas emissions



Energy consumer?



Passive House



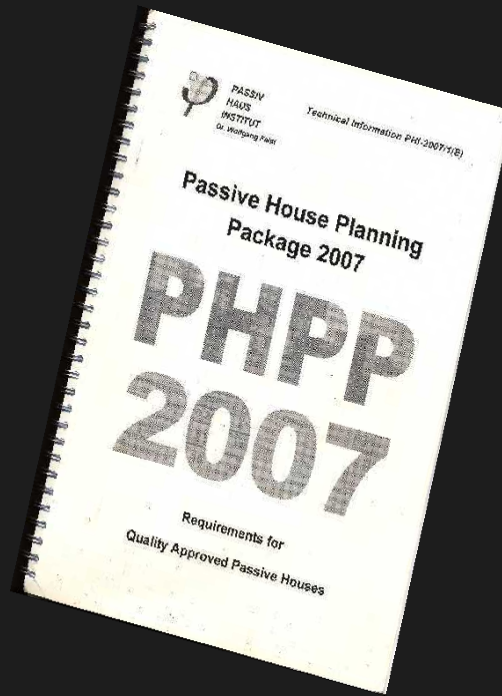
International passive house standard



Heat demand + cooling
< 15 kWh/(m².y) el. < 10 W/m²

Air tightness
< 0,6 AC/t [50pa]

Primary energy
< 120 kWh/(m².y)



A ++

A

B

C

D

E

F

G



Kilde: <http://www.passivehousedatabase.eu/>



Foto: XD

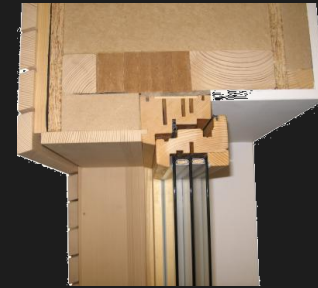


Kilde: <http://www.passivehousedatabase.eu/>

Implications

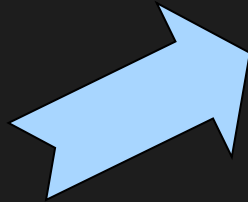


PASSIV
HAUS
INSTITUT
Darmstadt



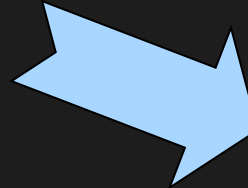
Technologies

Science
of
Building
Physics



Innovations

Passive
house
standard



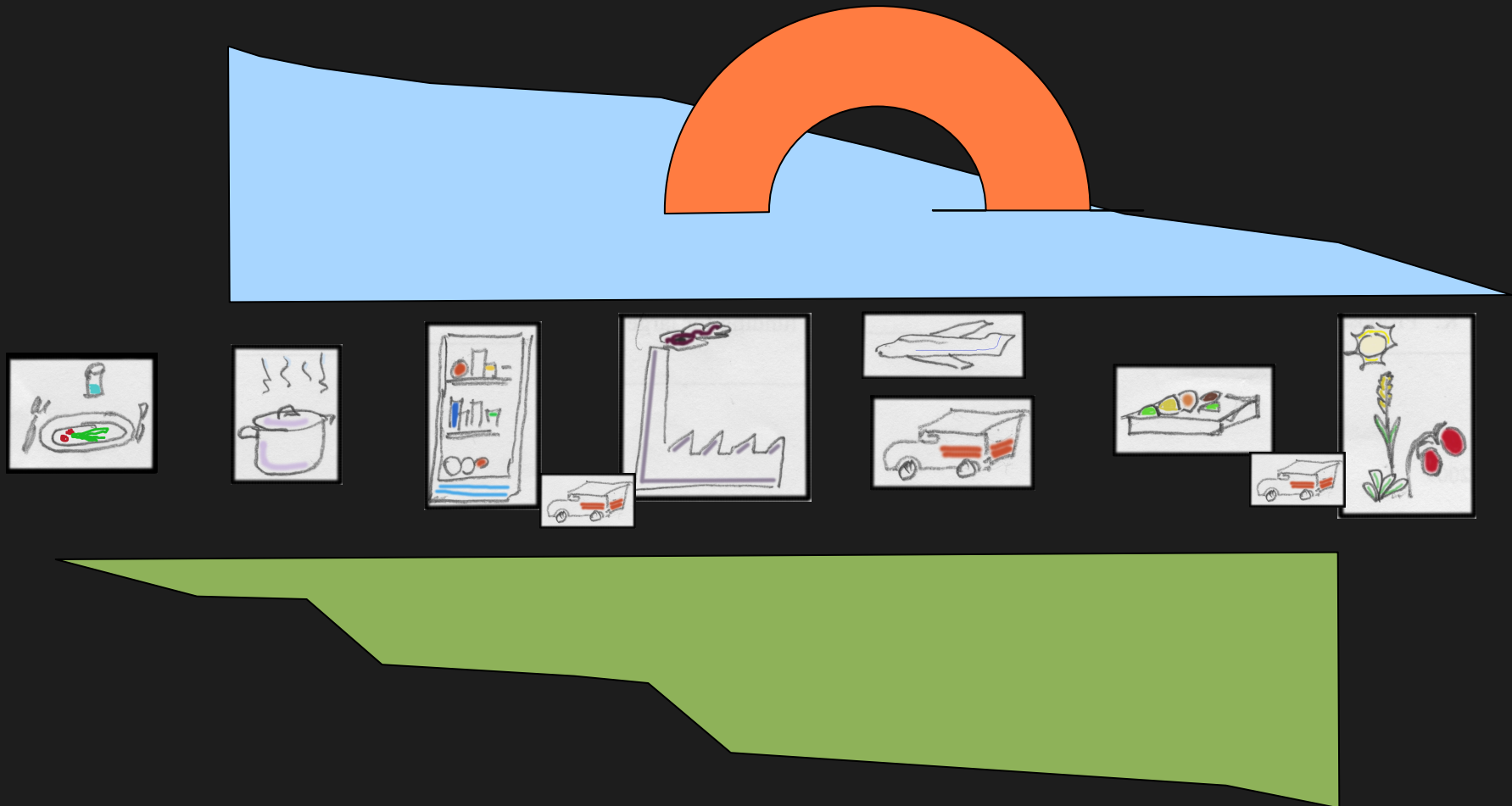
Darmstadt – Kranichstein Kilde: PHI



House for people - house for plants



Energy chain for food





*Even after all these years, the Sun never says to the earth:
“You owe me.”
Look what happens—with a love like that,
it lights the whole sky.*

— Hafiz, the Great Sufi Master



TAKK !

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