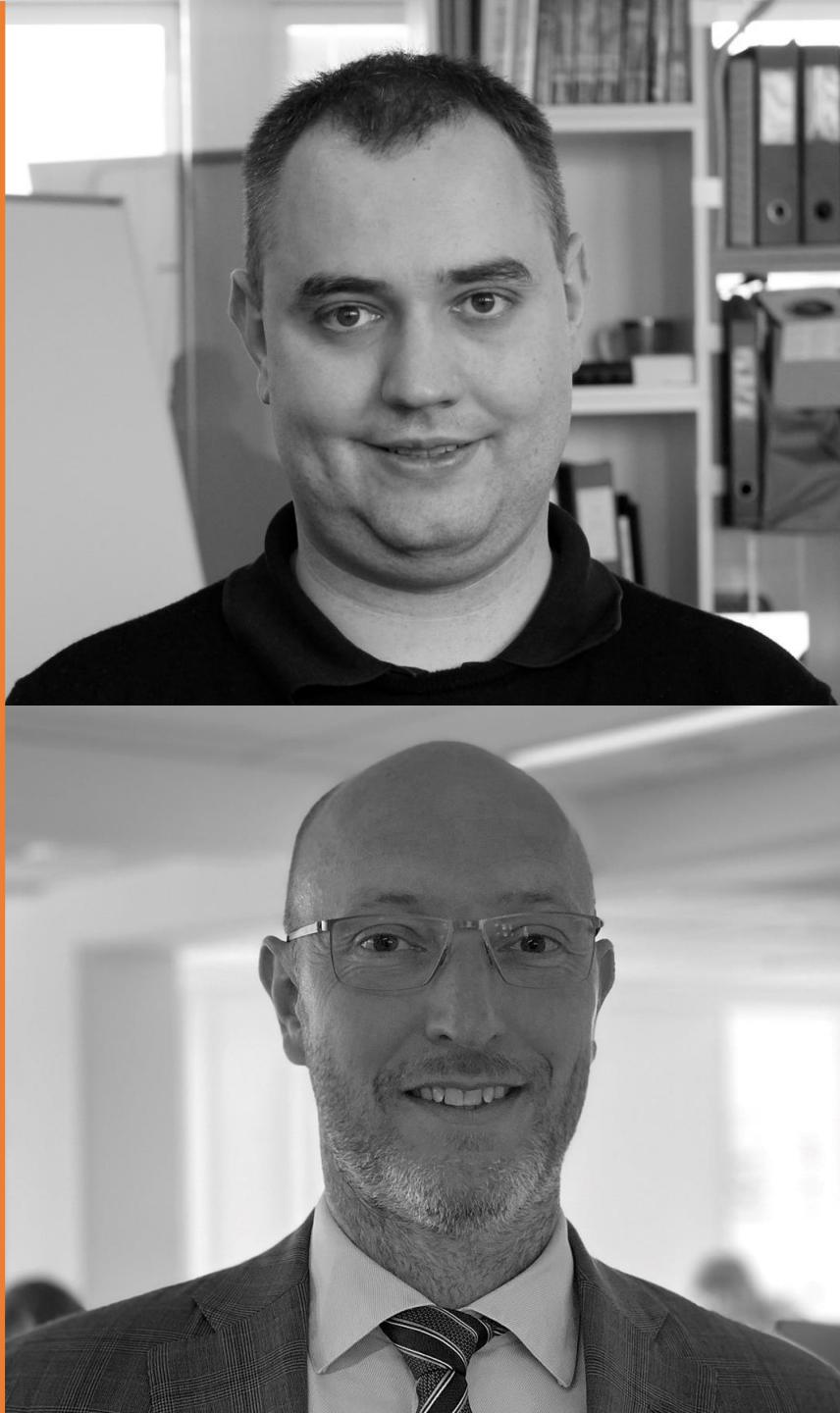
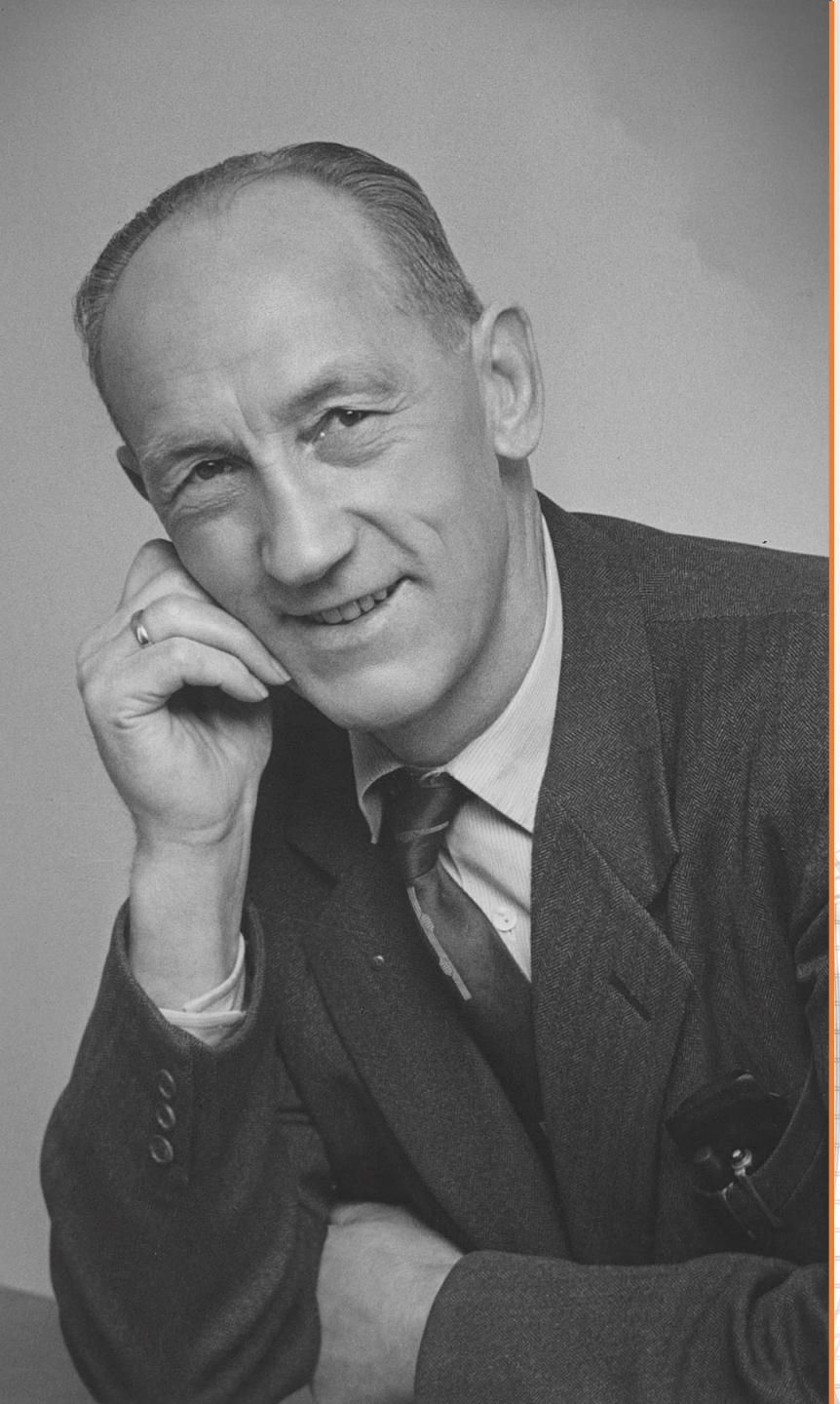
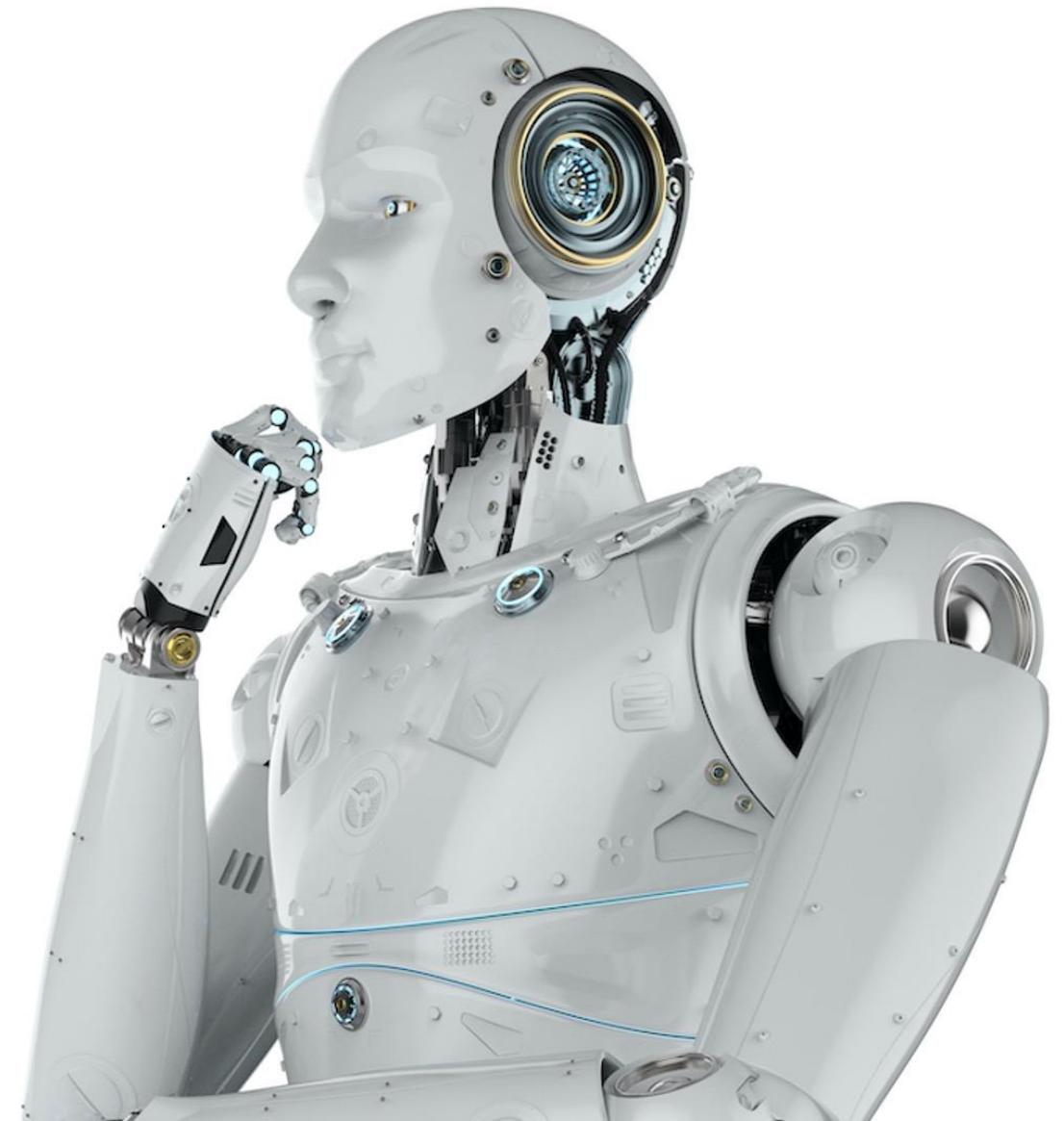


*Kundskaber og
det udviklende
byggetekniske
paradigme*





Society

Ownership

Organisation

Portfolio

Projects



a:gain

Hyfer

NEW NORDIC
ENGINEERING

GREENDOZER

TRANSPARENCY

Søren Jensen

ESG

DIGITALIZATION



Future
trends



Implement
now

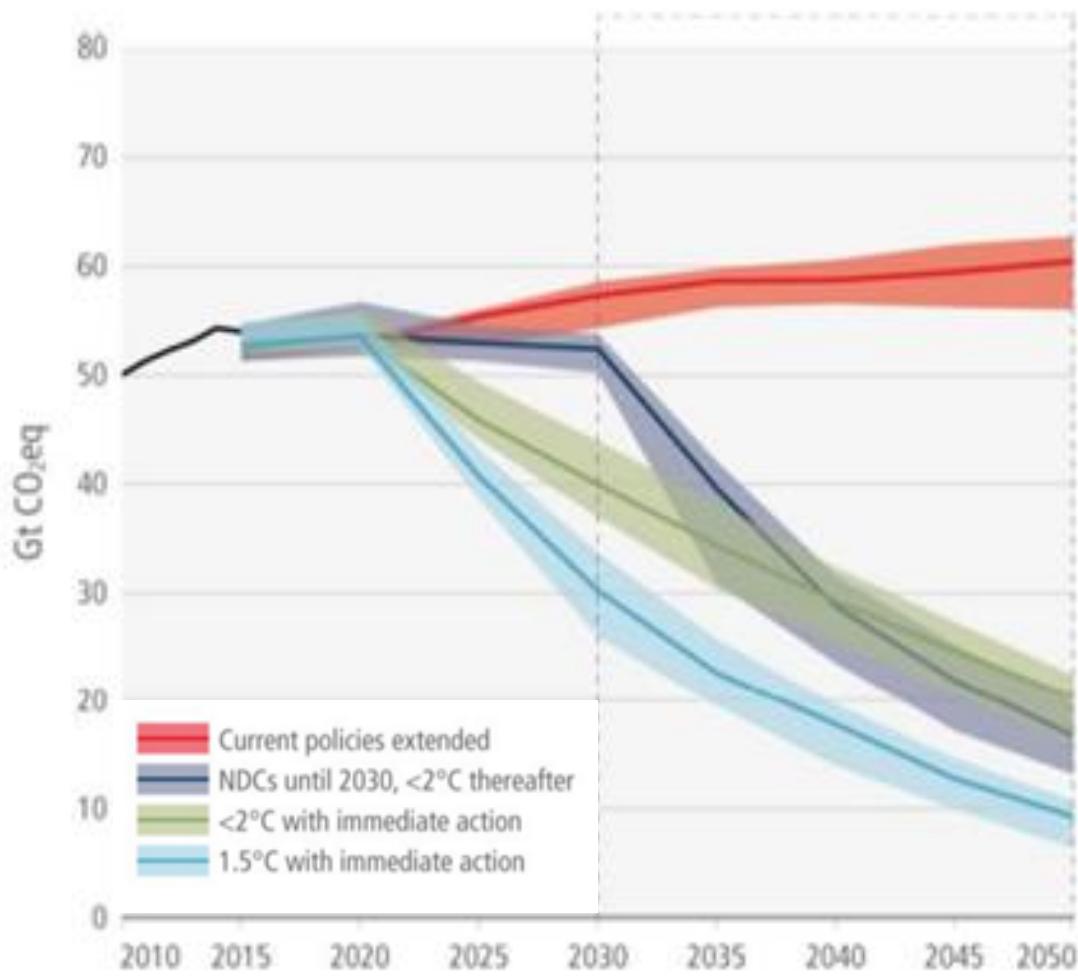
*Livet må forstås baglæns,
men må leves forlæns*

Søren Kirkegaard - 1843

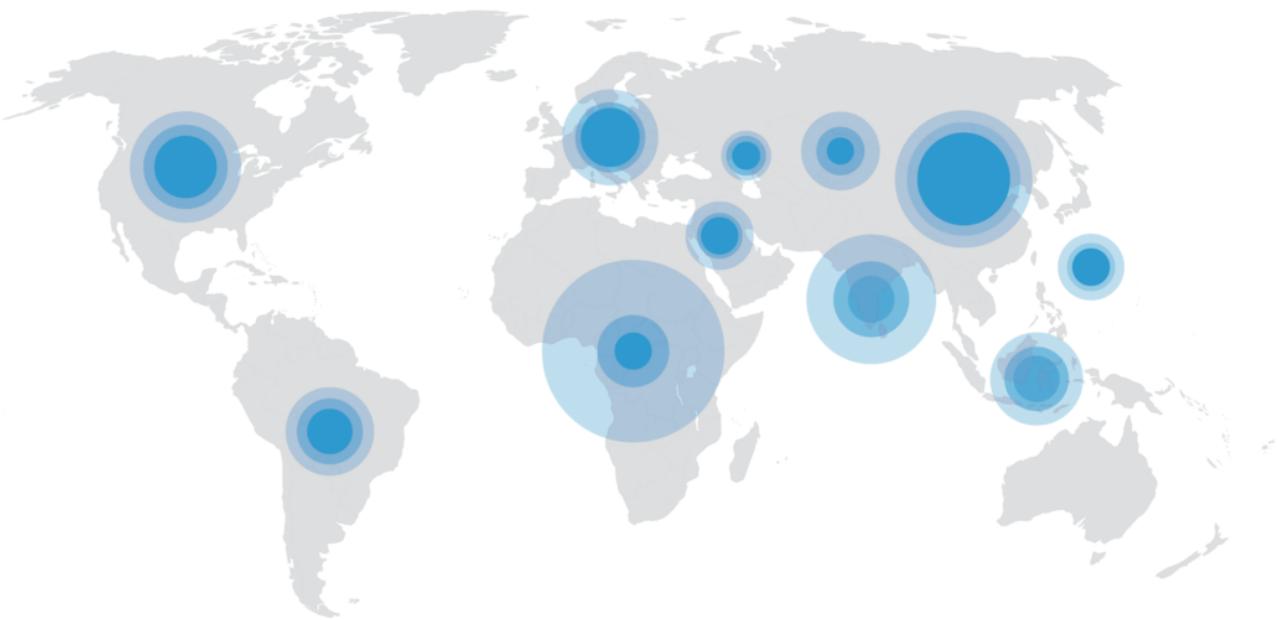
*Det udviklende
byggetekniske
paradigme*

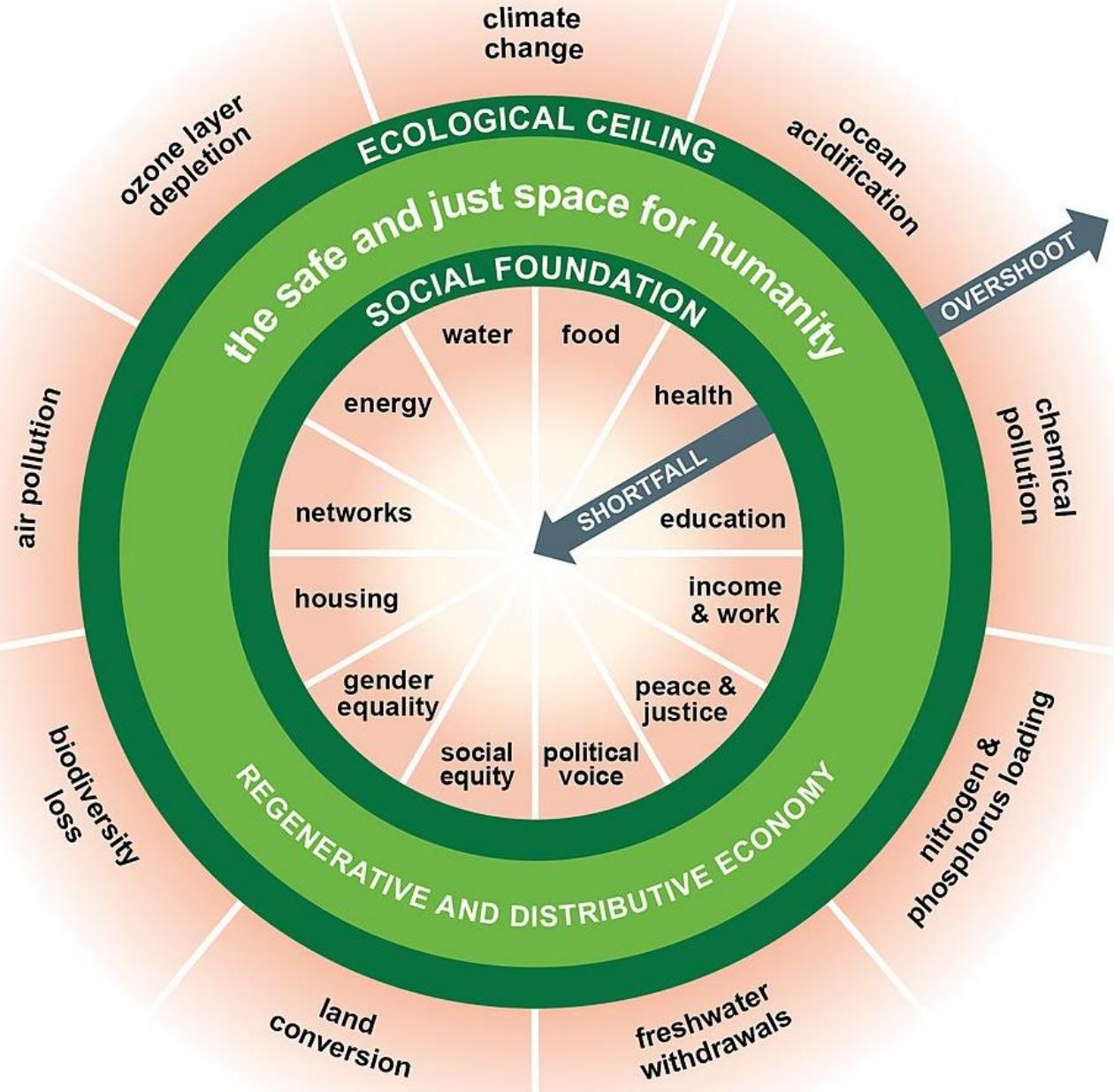
Sustainable

*Doing a bad thing less bad
so we can keep doing it*



Global building floor area
is expected to **double** by 2060.

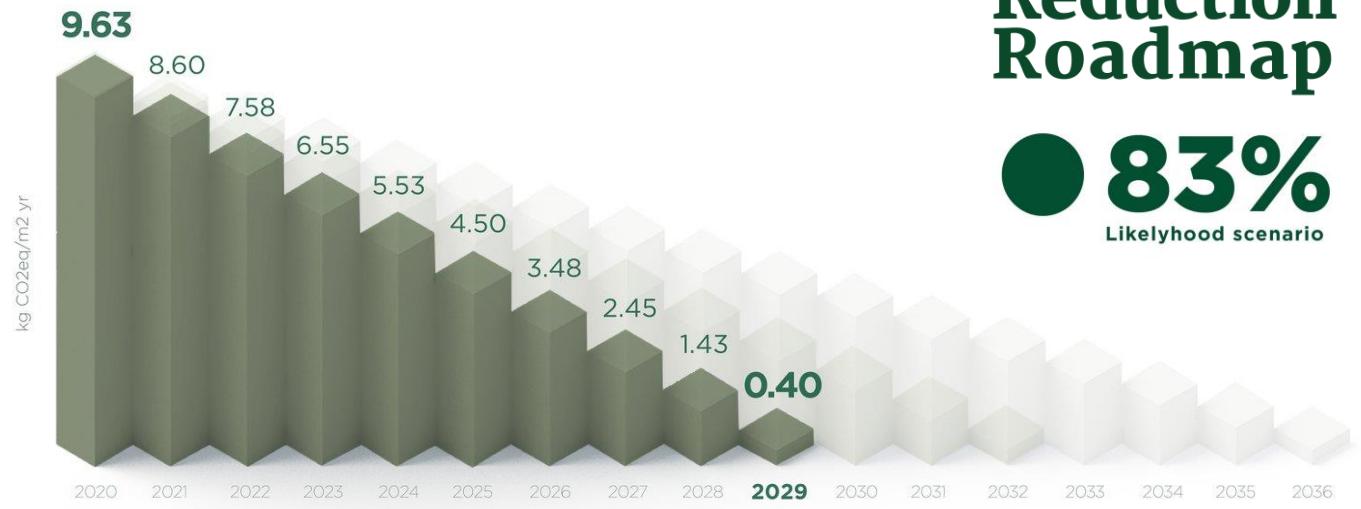
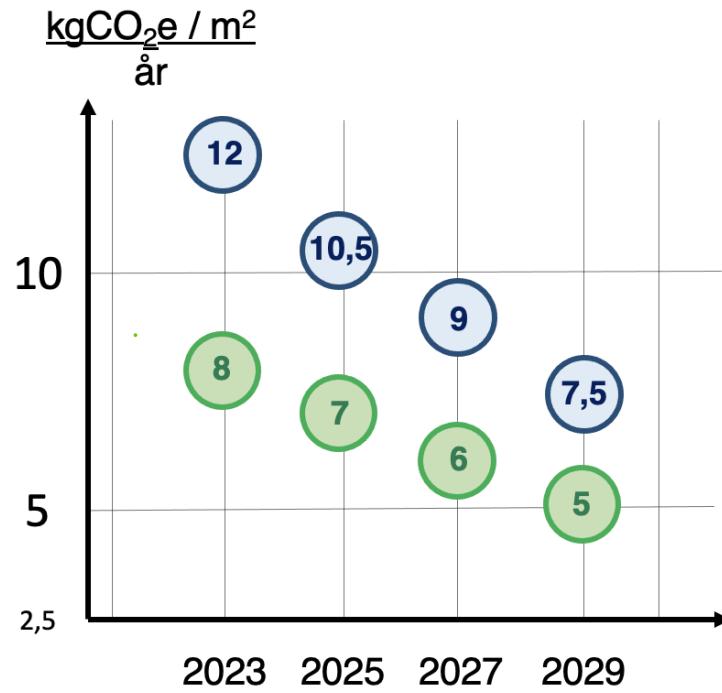


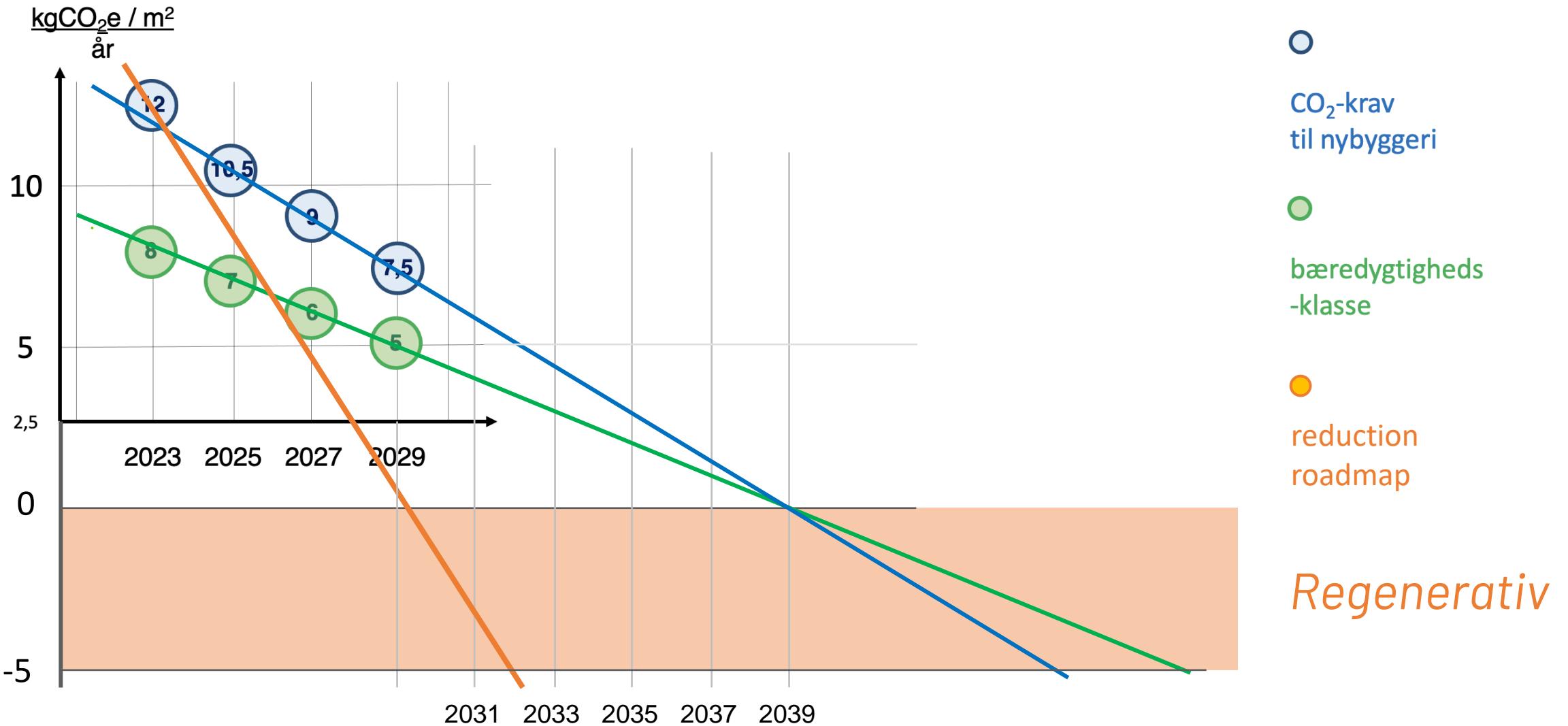


Regenerativ

FN's klimapanel (IPCC) har i deres seneste rapport beskrevet hvordan begrænsning af CO₂ udledningen ikke længere er tilstrækkelig.

Det bliver derfor nødvendigt at aktivt indfange CO₂ fra atmosfæren er nødvendig for at opnå mitigere de værste klimaforandringer.





USA

In New York, Local Law 97, sets carbon reduction targets of 40% by 2030, and 80% by 2050, for NYC real estate.

To achieve these goals, Local Law 97 sets building CO₂ emissions limits and a building that exceeds these limits after 2023 will be subject to a \$268 per metric ton (MT) tax.

EU

From 2023 onwards, all office buildings in the Netherlands will be required by Dutch law to have an energy label of C or higher, meaning that the use of office buildings with a D energy rating or lower will become illegal. From 2030 label A will be required.

Penalties for non-compliance with these new energy performance certificate (EPC) regulations can include a government order to cease the use of the building.

Building owners beware – the Polluter Pays for legacy contamination

"Put simply, the EPA says that the 'appropriate person' to clean up land is the person who 'caused or knowingly permitted' the contaminating substances to be in, on or under the land. This person is known as a Class A appropriate person.

If, after reasonable enquiry, no Class A person is found, then liability will fall to the current owner or occupier, the Class B person.

In addition, there are various statutory exclusion tests and hardship provisions."

"It has been suggested that in cases of past pollution, that is, once the original polluters are no longer available, we should resort to asking those who benefited from their pollution to pay towards compensating the harm thereby created. This claim is intuitively appealing. However, the mere fact of having benefited cannot provide the necessary grounds for establishing such obligations. What generates the obligations is either moral responsibility or the ability to pay."

Regenerative

To avoid buildings becoming stranded assets the entire building stock must seek 'Life time carbon neutrality'.







A photograph of an industrial HVAC system in a facility. On the left, there is a large stainless steel cabinet with various pipes and valves. To its right is a large, rectangular, light-colored unit with a dark grey base. A small digital display screen is mounted on the front of this unit. The word "soletair" is written in white, and "power" is written in green, separated by a thin line. Above the unit, a large, flexible metal duct is visible, supported by a metal frame. The floor is made of polished concrete, and the ceiling has several long, linear fluorescent light fixtures.

soletair power

De andre kriser

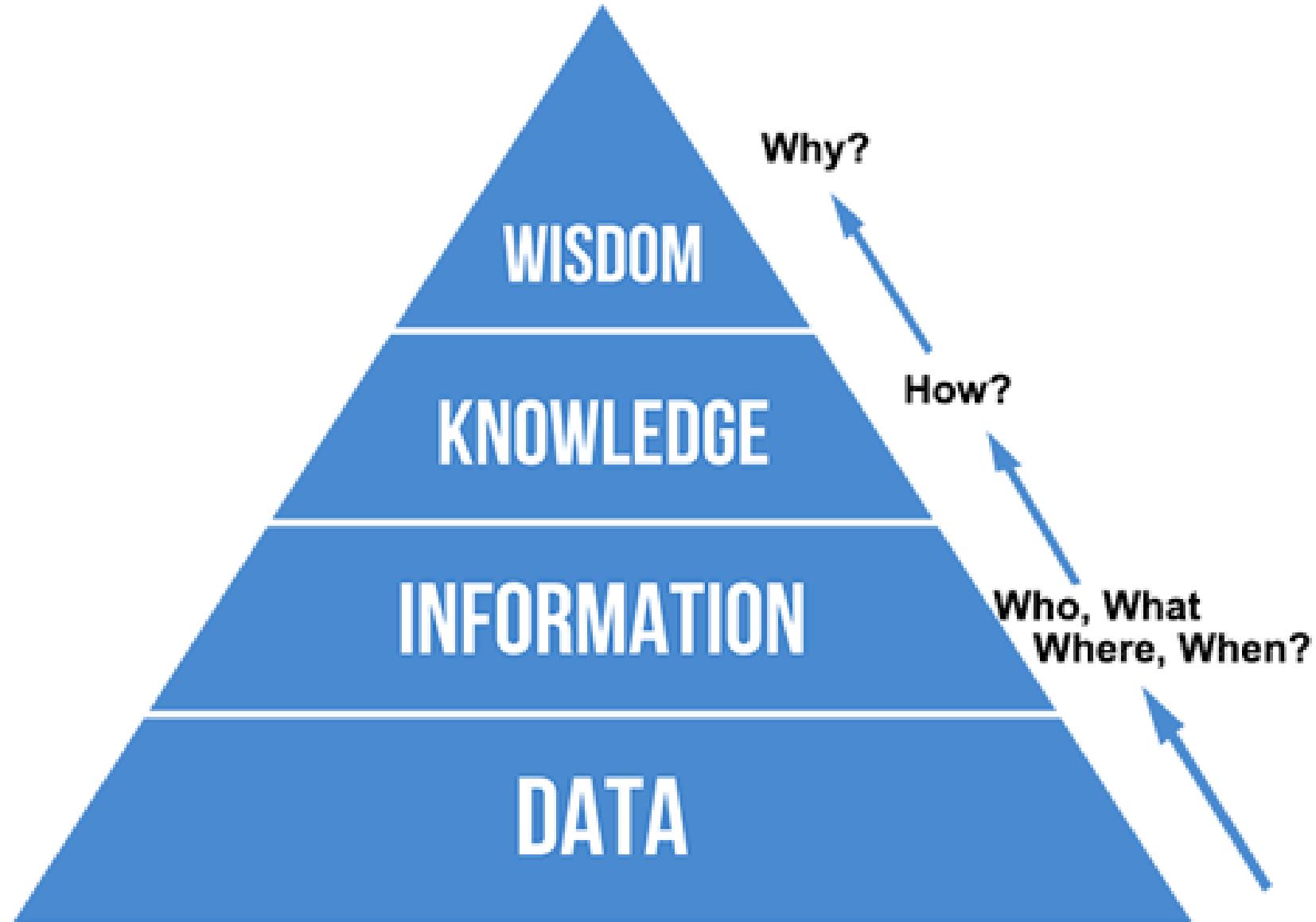


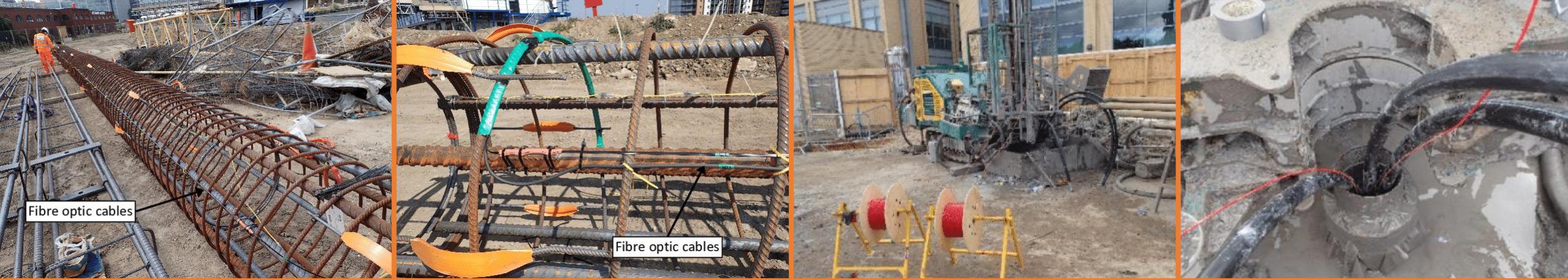




Sustainability is the mechanism by which technology is injected into real estate

Anthony Slumber - 2022





CO₂

Controlled ventilation keeps CO₂ levels below 1,000 ppm to increase overall productivity by 2 – 18%



Fine dust (PM2.5)

Room automation helps to monitor and control PM2.5 fine dust pollution and improves health and well-being



Occupant presence

Understand how your spaces are used, drive room specific strategies in HVAC based on room analytics and occupant behaviors

VOC

Improving ventilation control reduces the impact of the sick building syndrome caused by indoor Volatile Organic Compounds (VOCs) by reducing absenteeism and improving productivity

Relative humidity

Keeping humidity levels between r.h. 40 – 60% reduces virus transmission by up to 70%



Mål: 2035 paradigmet

Øget trivsel og sundhed blandt mennesker og dyr.

Regenerativ indenfor energi, CO₂ og biodiversitet.

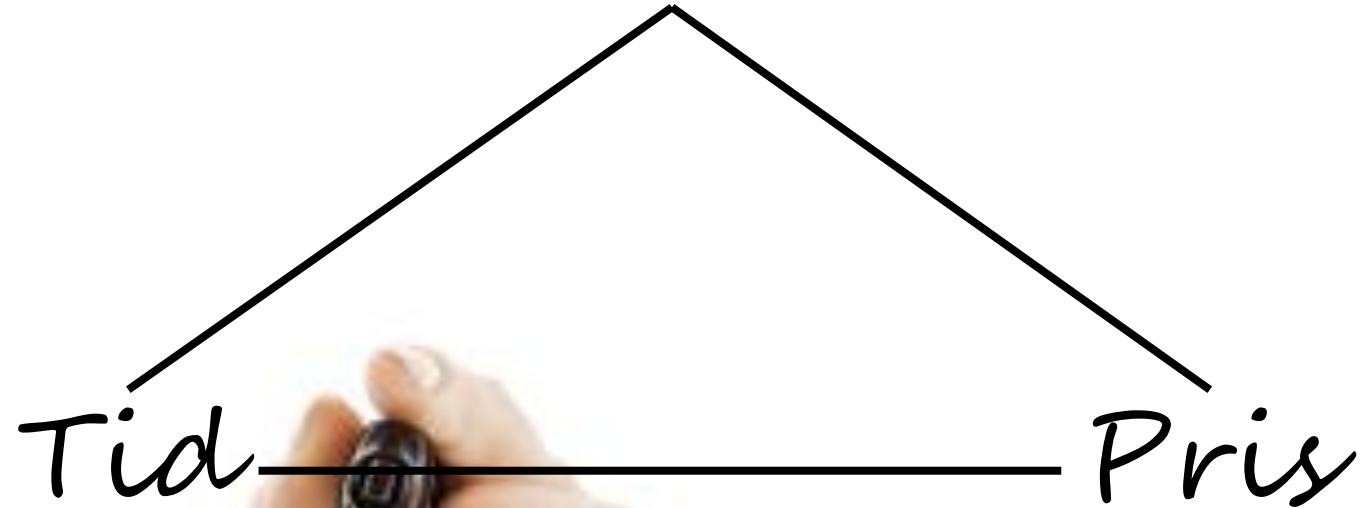
Max. 50% råstofforbrug, heraf 0% jomfruelige.

Incitament til kun at bruge det man har behov for.

(regnestokken skal ikke længere gange med 2)

Kundskaber

Kvalitet



Kvalitet

Tid

Pris

Digital Ansvarlig



Personlige kundskaber

Nysgerrig og tilpasningsparat.

Mestre overblik, effektivitet & målstyring.

Arbejder trans- eller multi-disciplinært.

Udfører erfa-opsamling systematisk.



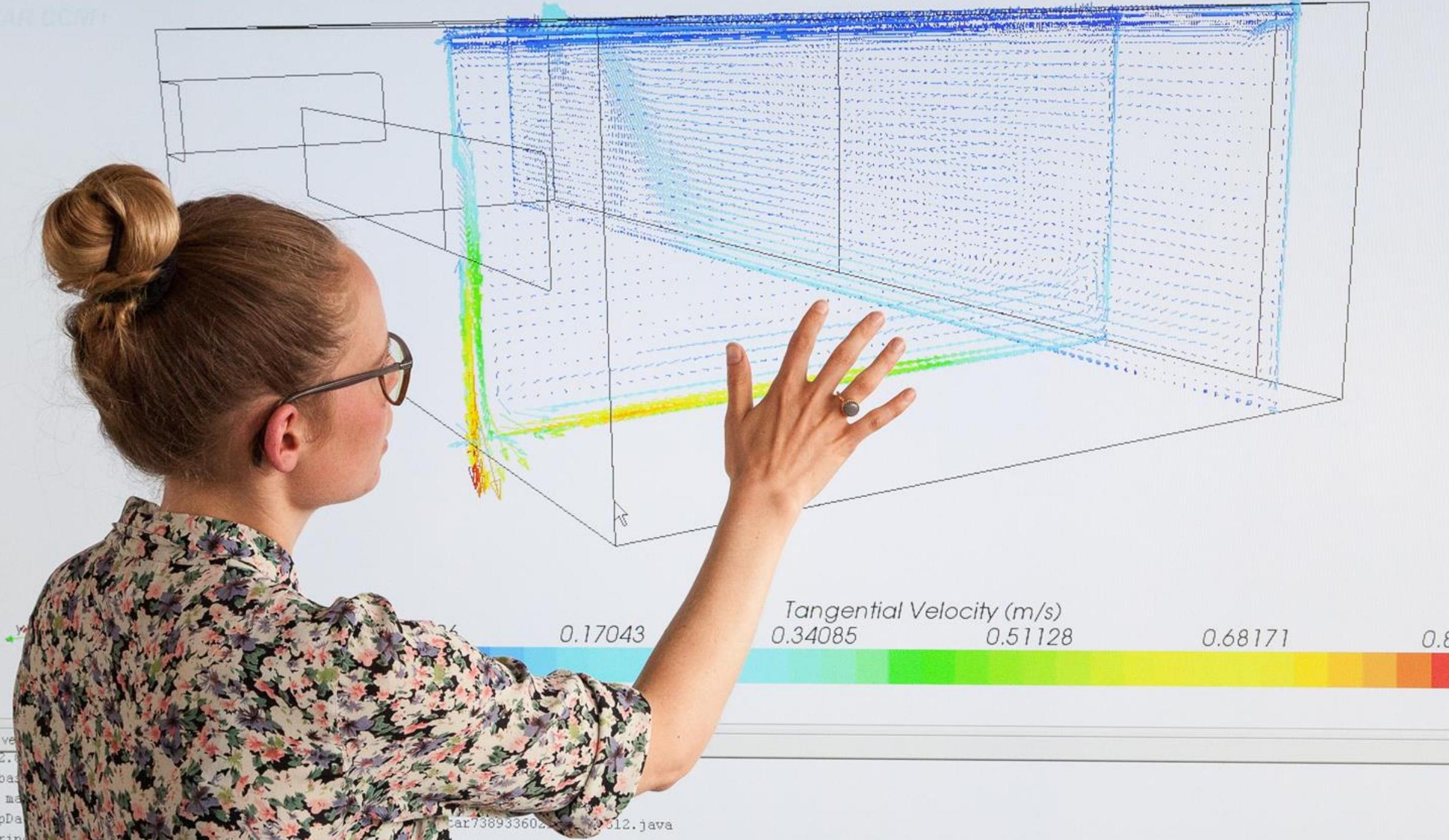
Faglige kundskaber

Hvorfor bygger vi og "de først principper".

101 i krisestyring - Ressourcer, CO₂, Bio m.fl.

Proces og grænsefladeforståelse.

Stigende, nuværende og aftagende viden.



Digitale kundskaber

Være digital pilot.

Tale det digitale sprog.

Kvantificering og evaluering af performance.

Selvforståelse af rolle i det digitale økosystem.

Uddannelse

Overall, we estimate that 49 percent of the activities that people are paid to do in the global economy have the potential to be automated by adapting currently demonstrated technology.

McKinsey - January 2017



Uddannelse & paradigme

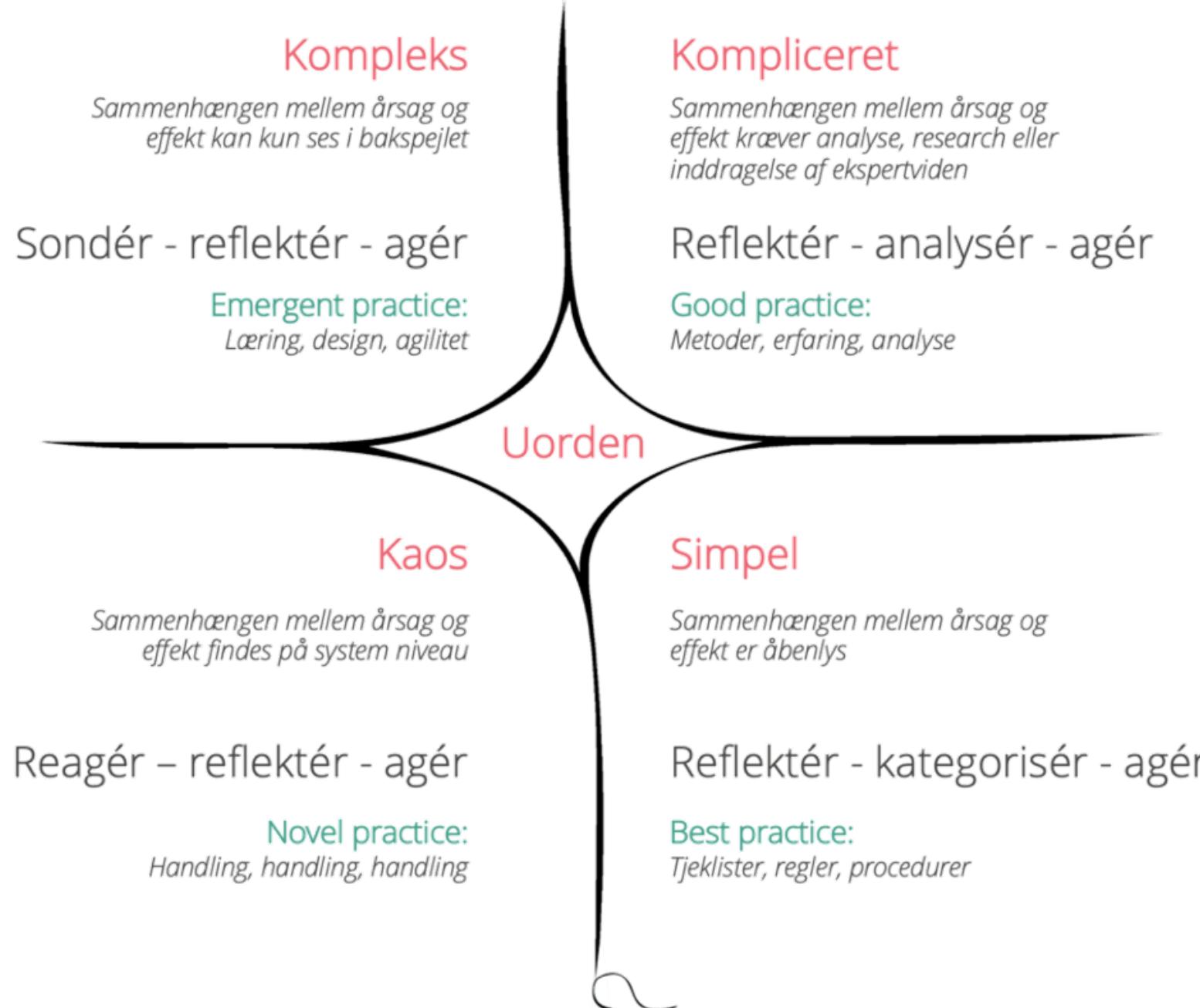
Rød tråd fra tradition over arkitektur til assets.

De centrale første principper.

Større bredde via perifere ”start pakker”.

Understøtte den enkeltes udviklende vidensbehov.

Rammeværk til forståelse af problemstilling.



Branchekarikatur

Byggeri

Praksisfællesskab
Opsplittet
Tavs viden
Materialeitung
Lang levetid
Produktion til projekt
Produkt er investering for kunden

Industri

Virksomhedsdrevet
Hierarkisk
Formaliseret viden
Materialeminimerende
Kort levetid
Produktion til lager
Produkt afskrives af kunden

Service, viden, underholdning

Interaktionsdrevet
Netværk
Netværksviden
Immateriel
Ingen levetid
Processen er produktet
Produkt er omkostning for kunden

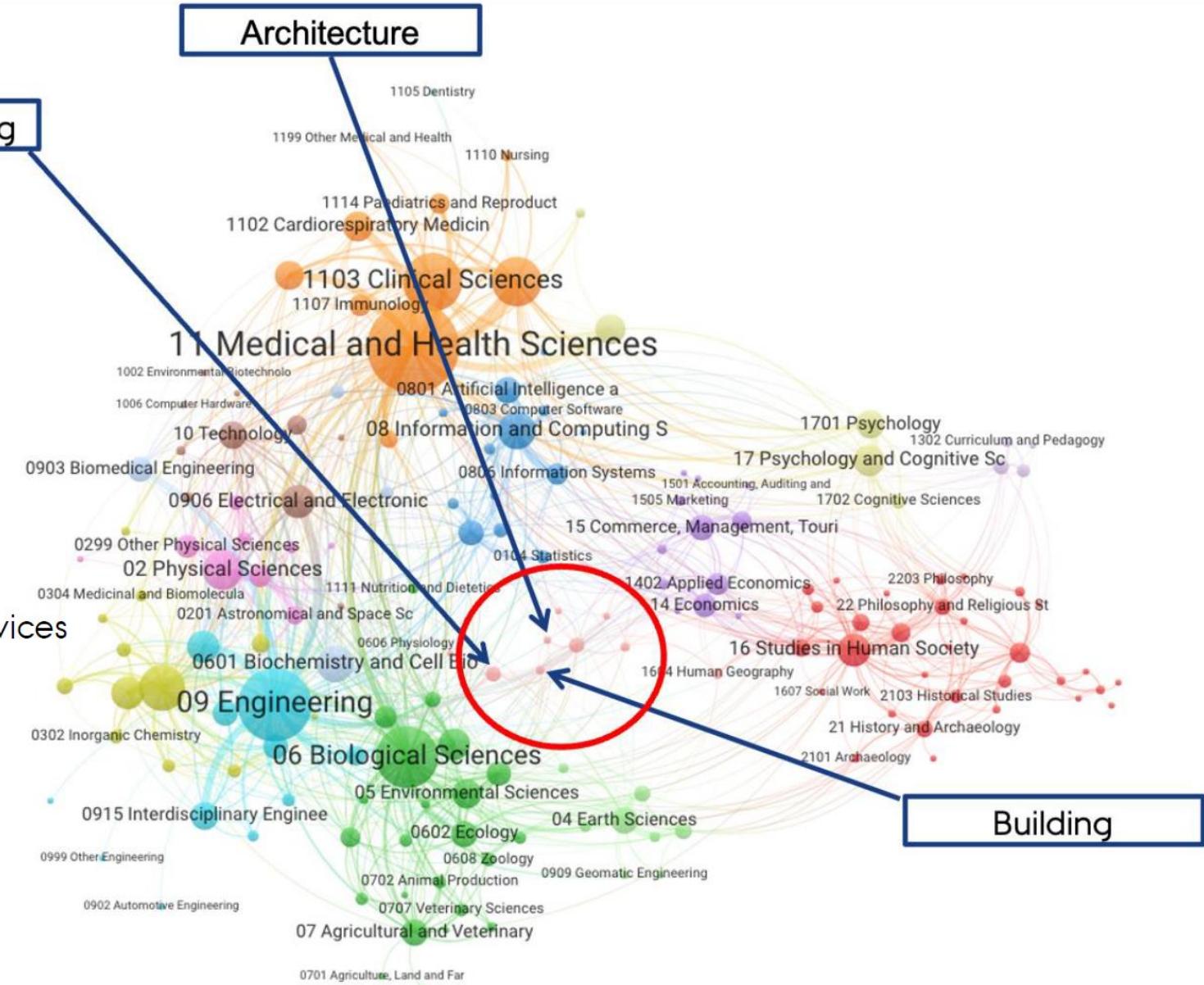
Derfor:

IPR-fremmed
Innovation og forskning ses som
omkostning

IPR-orienteret
Innovation og forskning ses som
investering

IPR-fjendsk/forvirret
Innovation og forskning ses som et
produkt

- 01 Mathematical sciences
- 02 Physical sciences
- 03 Chemical sciences
- 04 Earth sciences
- 05 Environmental Sciences
- 06 Biological sciences
- 07 Agricultural and veterinary sciences
- 08 Information and Computing sciences
- 09 Engineering**
- 10 Technology
- 11 Medical and Health Sciences
- 12 Built environment and design**
- 13 Education
- 14 Economics
- 15 Commerce, management, tourism and services
- 16 Studies in Human Society
- 17 Psychology and Cognitive science
- 18 Law and legal studies
- 19 Studies in creative Arts and writing
- 20 Language, Communication and culture
- 21 History and Archaeology
- 22 Philosophy and Religious studies



Uddannelse & markedet

Lære organisationer at arbejde trans-disciplinært.

Uddannelsesinstitutionerne og projektkulturen.

Økonomi & risiko: allokere/minimere/optimere.

If a typical person can do a mental task with less than one second, we can probably automate it using AI either now or in the near future.

Andrew Ng

Uddannelse & digitalisering

Hvad laver vi og hvad laver A.I.?

Første principper for Data til Wisdom.

De digitale værktøjer er perifere.

Konklusion



*It was the best of times,
it was the worst of times*

Charles Dickens - A Tale of Two Cities - 1859

Vi definerer og skaber
næste generations byggeri

Søren Jensen

Hvor hardcore ingeniørviden og nyeste
teknologi kombineres med passion og drømme.
Det giver inspirerende ingeniørkunst.

