

Bygg- og anleggskolen  
10.11.2021  
Rune Augenstein,  
CTIO





## Noen Trender

- Hybride arbeidsmodeller krever økt fleksibilitet
- Økt fokus på bærekraft og rapportering
- Overgang til “Space-as-a-service”
- Økt fokus på kundeopplevelse
- Bedrifter søker sammen i klynger
- Digitalisering av eiendomsbransjen
- Sirkulær økonomi og forretningsmodeller gjør sitt inntog
- Retrofirst



## 5 modeler for fremtidens arbeidsplass (Post Covid)

- **As it was:** Employees return to the office and resume a regular nine-to-five routine. The office might be a bit more hygienic and flexible, but mostly this is the centralized office as it was before the pandemic.
- **Activity-based working:** Employees work from an office but don't have an assigned desk. Instead, they spend their day moving between a variety of workspaces, such as meeting rooms, phone booths, hot desks, and lounges. Prior to the pandemic, most Australian activity-based offices had approximately eight desks for every 10 people (since people often worked elsewhere in the office). After the pandemic, firms are looking to shrink this as low as five desks between 10 people, anticipating that many of their employees will be out of the office, working from home a couple of days per week.



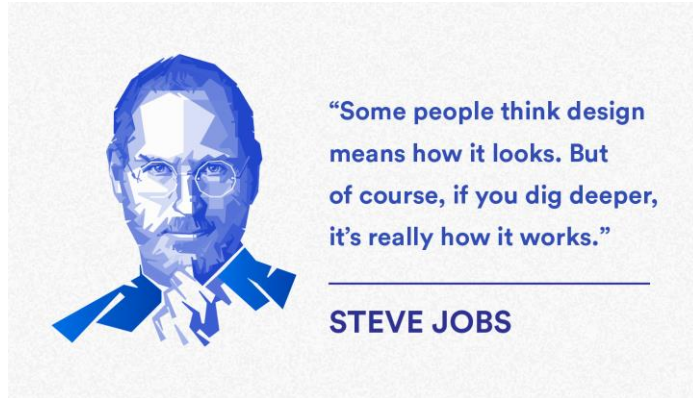
## 5 modeler for fremtidens arbeidsplass (Post Covid)

- **Clubhouse:** A hybrid model where employees visit the office when they need to collaborate and return home to do their focused work. The office serves as a social hub — the place people go to meet, socialize, and work together.
- **Hub and spoke:** Rather than traveling to a large office in the central business district, employees work from smaller satellite offices in the suburbs and neighborhoods closer to where they live. This saves them the commute to a central office while still providing the benefits of face-to-face interaction with colleagues.
- **Fully virtual:** Employees work from home — or anywhere else they like — allowing companies to ditch expensive leases and build on what they started during the pandemic.



## Økt fokus på kundeopplevelse og tjenestetilbud

"Tenants and end-users are largely looking forward to doing more with the physical space. They are increasingly looking at innovative and personalized technology-enabled experiences"



## Bedrifter søker sammen i klynger

"Campus – the working environment for companies willing to optimize real estate, collaborate, co-create, innovate, attract talent and grow"



Kilde: Deloitte, Real Estate Outlook 2020



# Fremtidens arbeidsplass?

- Fleksible arealer som er enkle å tilpasse både i størrelse og utforming
  - bygget skal kunne ha cellekontorer og med en teknisk grid
- Delingsøkonomi - større bruk av fellesfasiliteter
- Fleksible leiekontrakter
- Fokus på miljø og miljøsertifisering i bygget(EU taksonomien)
- Skille mellom hjemme og kontoret blir mindre
- Det må være enkelt å komme seg på jobb uten å ha bil
- De ansatte må kunne yte sitt beste når de er på jobb



# Fremtidens arbeidsplass?

- Brukeren i førersetet, ikke lenger utleier
- Bærekraftig og funksjonell bruk av kontoret
- Utvisking av skillet mellom den tradisjonelle arbeidsplassen og andre måter å jobbe på
- Organisasjonsutvikling; økt samspill på tvers av ulike avdelinger
- Økt areal med fellesfunksjoner, mindre eksklusive arealer
- Sunne bygg, interiør og samfunn hvor mennesket er i fokus





# BREEAM® NOR



Energy



Health and Wellbeing



Innovation



Land Use



Materials



Management



Pollution



Transport



Waste



Water





## TEN CONCEPTS



AIR



WATER



NOURISHMENT



LIGHT



MOVEMENT



THERMAL  
COMFORT



SOUND



MATERIALS



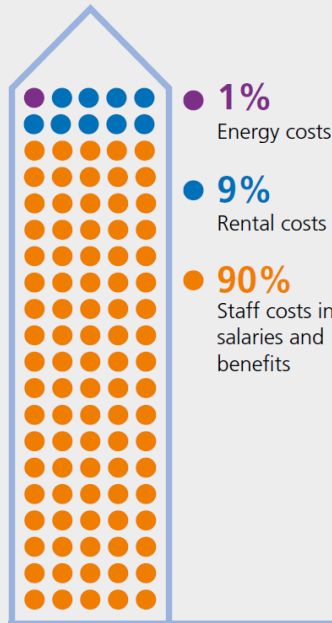
MIND



COMMUNITY



## Typical business operating costs<sup>1</sup>



### 10% Variation

A 10% variation applied equally to each cost has a far from equal impact

+/- **0.1%**

Energy costs

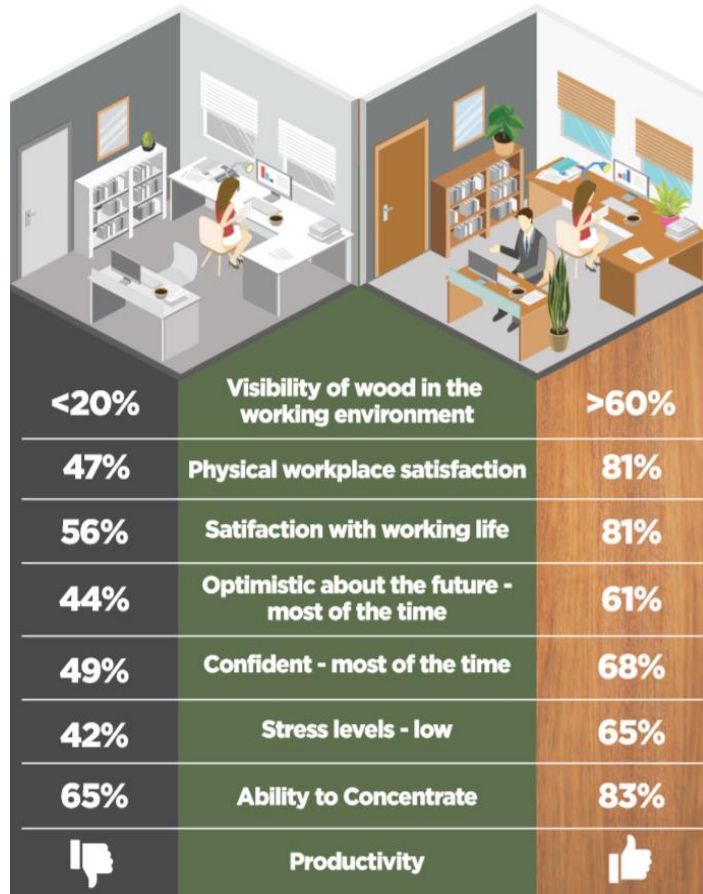
+/- **0.9%**

Rental costs

+/- **9.0%**

Staff costs

**Mennesker**  
er bedriftens viktigste  
ressurs og står  
for **90%** av kostnadene



Et miljøvennlig bygg øker produktiviteten til de ansatte med opptil **15%**

Kilde: Nieuwenhuis, Marlon & Knight, Craig & Postmes, Tom & Haslam, S.. (2014). The Relative Benefits of Green Versus Lean Office Space: Three Field Experiments. Journal of experimental psychology.

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life@work

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# Et marked i endring

Tidligere satte bransjen og fagfolk premissene. Nå digitaliseres svært mange tjenester i bygg og tilbudet utvides.

Byggene forenkles og blir mer tilgjengelige med digitalisering, samtidig blir brukeren mindre tålmodig og mer krevende gjennom kunnskap og innsikt fra samtiden og media.



# Effekten av å være en tjenesteyter

## Tiltrekker seg mulige leietaker

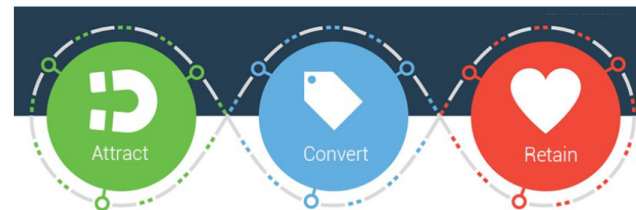
- Attraktivitet og merkevarebygging
- Innovative løsninger
- Selvbetjening

## Konverterer til leietakere

- Samhandling, fellesskap, merverdi, nye muligheter
- Fleksible løsninger
- Effektiv, integrert, automatisert hverdag




## Beholder med oppfølging og tilpasninger

- Kontinuerlig samhandling og dialog
- Bruke kunnskap om ansatte til å tilby merverdi
- Innsikt hvordan ansatte oppfører seg
- Hver ansatt sine egne tilpassede løsninger
- Bonusprogram










### Weather


Mon  Clear and Sunny  
**26°**  28 km/h  
 20°-30°  42%

### Indoor Air Quality

 **93**  
 Air Quality Good\*  
 \*Based off the Air Quality Index


 380 CO2 PPM  
 42% Humidity  
 200 VOCs  
 26° Temp. C

### Targets

 **4% LESS CO2**  
 Almost There!  
 1% left!

This month were aiming to produce **5% Less CO2.**

### Food Waste

 **7% LESS WASTE**  
 Almost There!  
 3% left!


The Cantine has **+10 meals left up for grabs!** Grab one to help **reduce our food waste by 10%.**

## My Building

BREEAM In USE WELL BREEAM 

### Your Buildings Performance



 The clouds size and color is directly impacted by the buildings CO2 output. (White/small is good)

This month our clouds are turning darker due to our **increased CO2 output!**


### Building Metrics

 **CO2**  **Energy**  **Water**  **Waste**

**▲16.1%** **▲12.1%** **▼2.8%** **▼6.8%**

This month we roughly cut **X trees worth of CO2 (X)**. A **X% decrease** from last month!




### Your Consumption this month

 This month you produced enough CO2 to cut down **8 Trees!**

Compared to **X Company's tenants**, they were 25% more efficient than you producing CO2.

## Your Building This Month




### Top 3 Sustainable Companies

-  Smedvig ↑1
-  Kruse Smith ↑1
-  Faber Bygg ↓1

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14 Your Company ↑2

### Reward this Month

-  Free Smoothies
-  X
-  X

 If you ride your bike to work 3 days a week, this could save **3 trees worth of Co2** from your usual consumption!


Actions to help reduce your footprint this month Offset your carbon footprint by X%!


Ride your Bike to Work

Take The Bus

Go Plastic Free

Reduce Food Waste

  
**87%**  
 User Satisfaction  
 87/100

  
**28%**  
 User's Cycling  
 5%+ then last month!  
 Saving X Trees



**Smedvig** Dashboard > Comparing Assets

Back to Dashboard | Analyze | Certifications and Measures | My Building

### Comparing Assets

**BREEM In Use** **WELL** **BREEM**

#### Analyze and inspect your data

Energy | KWh/Per Tenant | 01 Jan 2021 - 30 November 2021

Temperature | Energy | Temperature | Annotated data | Anomaly | Target

#### Energy for Area

120 KWh/M2

OPERATIONAL 74.2% EMBEDDED 25.8%

#### Renewable Energy

21 KWh/M2

SUSTAINABLE 17.1% GHG FUEL 82.9%

#### CO2

KWh/Per Tenant | 01 Jan 2021 - 30 November 2021

CO2 for Area

120 KG/M2

OPERATIONAL 74.2% EMBEDDED 25.8%

#### Renewable Energy

21 KWh/M2

SUSTAINABLE 17.1% GHG FUEL 82.9%

#### Compared Assets

**Building Name** OFFICE BUILDING

CO2 Energy Water Waste

+2.8% +12.1% +2.8% +6.8%

**BREEM In Use** **WELL** **BREEM**

**Building Name** OFFICE BUILDING

CO2 Energy Water Waste

+9.8% +12.1% +2.8% +6.8%

**BREEM In Use** **WELL** **BREEM**

**Building Name** OFFICE BUILDING

CO2 Energy Water Waste

+2.8% +12.1% +2.8% +6.8%

**BREEM In Use** **WELL** **BREEM**

**Smedvig** Sustainability Dashboard

Back to Reporting

### GRESB Tool

GRESB Reports

Asset	Report	Final	Last Modified
Building E1 - Park	E1 rev	Finished	5/26/21 at 09:12
iPark	iPark.csv	Missing Data	5/26/21 at 09:12
Building E2 - Park	E2 rev	Finished	5/26/21 at 09:12

Choose Assets to use the tool on

Building X	Building X	Building X	Building X	Building X	Building X
OFFICE BUILDING	OFFICE BUILDING	OFFICE BUILDING	OFFICE BUILDING	OFFICE BUILDING	OFFICE BUILDING
LAST UPDATED	LAST UPDATED	LAST UPDATED	LAST UPDATED	LAST UPDATED	LAST UPDATED

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**Smedvig** Datacenter Dashboard

Back to Reporting

### Eu Taxonomy Tool

Eu Taxonomy Eligibility Reports

Asset	Report	Final	Last Modified
Building E1 - Park	E1 EU Taxonomy.pdf	Eligible	5/26/21 at 09:12
Building E2 - Park	E2 EU Taxonomy.pdf	Eligible	5/26/21 at 09:12
Building E3 - Park	Doc_E3.csv	Finished	5/26/21 at 09:12

Eligibility Suggestions

Building X	Report
Building X	Report
Building X	Report
Building X	Report
Building X	Report

Current Requirements

**Primary Energy needs**

New construction should be 10% lower energy requirements than NBS

Existing buildings must be setting the top 15% most energy-efficient buildings in its country/region to have energy label A-

Renals must result in at least 36% reduced energy requirements

For new buildings over 5000 sqm, requirements for leakage test and test of thermal integrity

**Climite**

New construction and older buildings for assessment of physical climate risk and climate adaptation

New construction over 5000 sqm: Requirements for CO2e (greenhouse gas accounts)

**Criteria for a building that does not "significantly harm"**

Requirements for water saving equipment in commercial buildings

Track Biomass

Shower & Handwash

WFI flow & Flush Tank coverage 3.5 liter / flush

Shower & Hand Wash

Flushing devices: Max 1 liter / flush

**Water**

The amount of water must be minimized according to EN Construction and Transition Water Management Protocol.

Building design must be created, one may also be able to demonstrate the "assessability or adaptability of buildings" as. According to ISO 20091 or equivalent.

A minimum of 10% of non-toxication construction and condition water must be "treated for reuse, recycling or other beneficial purposes to be used by the operations/long-term occupants of the building"

**Limit values degrading**

Formaldehyde: 0.05 mg/m3

Radon: 200 Bq/m3

Recent category 1A-1B carcinogens: 0.001 mg/m3

**Extra**

**Smedvig** Sustainability Dashboard

Back to Reporting

### CRREM Tool

CRREM Reports

Asset	Report	Final	Last Modified
Building E1 - Park	E1 rev	Finished	5/26/21 at 09:12
iPark	iPark.csv	Missing Data	5/26/21 at 09:12
Building E2 - Park	E2 rev	Finished	5/26/21 at 09:12

Choose Assets to use the tool on

Building X	Building X	Building X	Building X	Building X	Building X
OFFICE BUILDING	OFFICE BUILDING	OFFICE BUILDING	OFFICE BUILDING	OFFICE BUILDING	OFFICE BUILDING
LAST UPDATED	LAST UPDATED	LAST UPDATED	LAST UPDATED	LAST UPDATED	LAST UPDATED

**Smedvig** Environmental Dashboard

3 more updates

### Dashboard

8 Anomalies Detected

24 Targets Reached

6 Campaigns need making

Highlights

Portfolio CO2 Output 14.3 % +3.74%

Assets User Satisfaction Average 91/100 +10.74%

Your Assets

Building 13	Building 13	Building 13	Building Name
OFFICE BUILDING	OFFICE BUILDING	OFFICE BUILDING	OFFICE BUILDING
CO2 Energy Water Waste	CO2 Energy Water Waste	CO2 Energy Water Waste	CO2 Energy Water Waste
Targets	Targets	Targets	Targets

Compare Assets

24 Targets Reached

8 Anomalies Detected

# Innoasis - Hensikten



## Innoasis

- Muligheter skapes der mennesker møtes.
- Innoasis skal være det naturlige navet som sikrer den beste prosessen fra idé til produkt.
- Her møtes startups, etablerte bedrifter, investeringsfond, offentlig sektor og akademia.
- Innoasis blir en innovasjonsarena som skal gi tilgang på kompetansen, nettverket og verktøyene for å utvikle og skalere nye produkter og tjenester for et smart og bærekraftig samfunn.
- Målet er å etablere tjenester, programmer og et fysisk miljø som tilrettelegger for dette, samtidig som Innoasis blir det naturlige møtestedet for kompetanseheving og nettverksbygging.

# NORDIC EDGE

Cluster of >100 actors working together to develop, test and export tomorrow's solutions for smarter, more resilient and sustainable societies



Startups &  
SMBs



Investors



Public Sector



Academy

## ACTIVE CITIZENSHIP AND KNOWHOW

Diverse and inclusive  
learning communities

## ON THE MOVE

Blue and green mobility and  
transport solutions

## URBAN ENERGY

The renewable  
transformation challenge;  
Smart energy concepts for a  
cleaner and leaner future

## SPACES AND PLACES

Reinventing our human-  
made surroundings

# Nordic Edge cluster – the vision and mission



**Vision: Create a new and large Norwegian export industry.**

This will ensure that Norway take part in a rapidly growing international market in sustainable and robust living environments, cities and communities.

**Mission: To be a driving force for the development, testing and export of smart city technologies and solutions on behalf of cluster members.**

This is to realise the potential of developing and exporting products and services created through the Nordic model of trust building, co-operation and co-creation.

# INNOVATION

Misjon

Det du trenger for å utvikle og skalere løsninger for smarte og bærekraftige samfunn

Måles på

# ideer / problemer

# piloter & tester

\$MNOK i finansiering

# samarbeidsprosjekter

# talentrekrutteringer

Verktøy

Byutviklingslab

Bygget som living lab

Startuppakke

Tjenestetilbud

Testing & pilotering

Forretningsutvikling, vekst & kapital

Finansiering og søknader

Struktur samarbeidsprosjekter

Talentrekruttering

Suksessfaktorer

Innovativ, inkluderende og inspirerende kultur

Synlighet nasjonalt

Høy aktivitet

Skreddersøm

Partnere



SMEDVIG

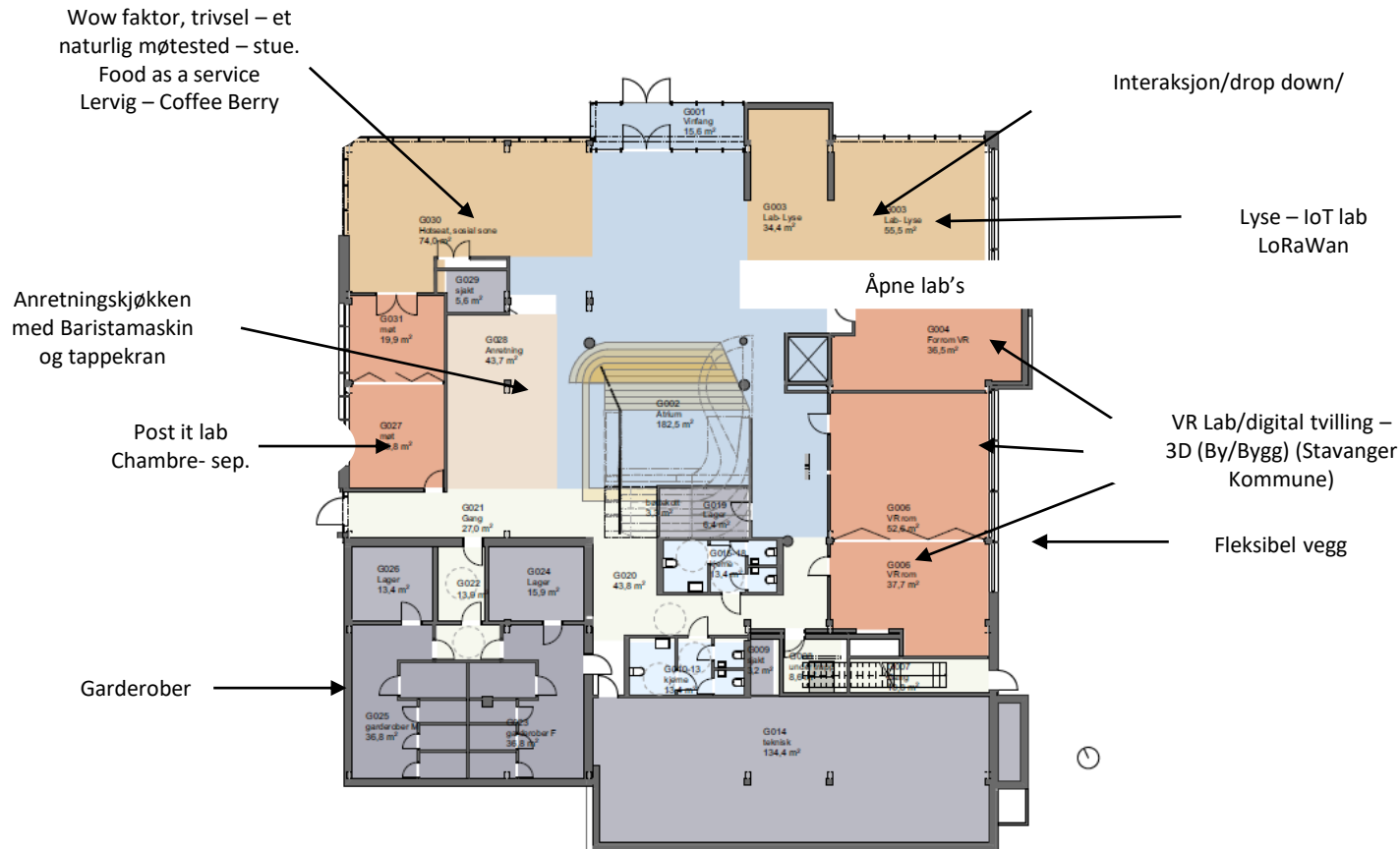


SpareBank 1 SR-BANK



Universitetet i Stavanger

NORDIC  
EDGE





2 etasje.  
Følg sperrebånd inn i trappetur til 4 etasje.

