



Norwegian University of
Science and Technology

Future learning environments

NUAS 2015

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NTNU2060
VISIONS FOR CAMPUS DEVELOPMENT

JANUARY 2014



Norwegian University of Science and Technology

Agenda

1. NTNU Campus development
2. Linking education, research and innovation
3. Playing with ideas & preparing for the future
4. Follow-up workshop: Future learning environments



08.09.15: Government support to
NTNU campus development.
Prime minister Erna Solberg



1996

2000

2002

2006

...

2012

2013

KVU FRAMTIDIG
LOKALISERING AV
CAMPUS NTNU
KONSEPTVALGUTREDNING



RAMBØLL

NTNU
NTNU2060
VISJONER FOR CAMPUSUTVIKLING



January 2014

June 2014



August 2015



September 2015

NTNU campus development

Trondheim



The city:
185.000 inhabitants

NTNU Campus:
31.000 students
5.800 employees
680.000 m²



Experimental learning



Across disciplines



Cooperating with businesses and society



Aiming at sustainability





Dragvoll



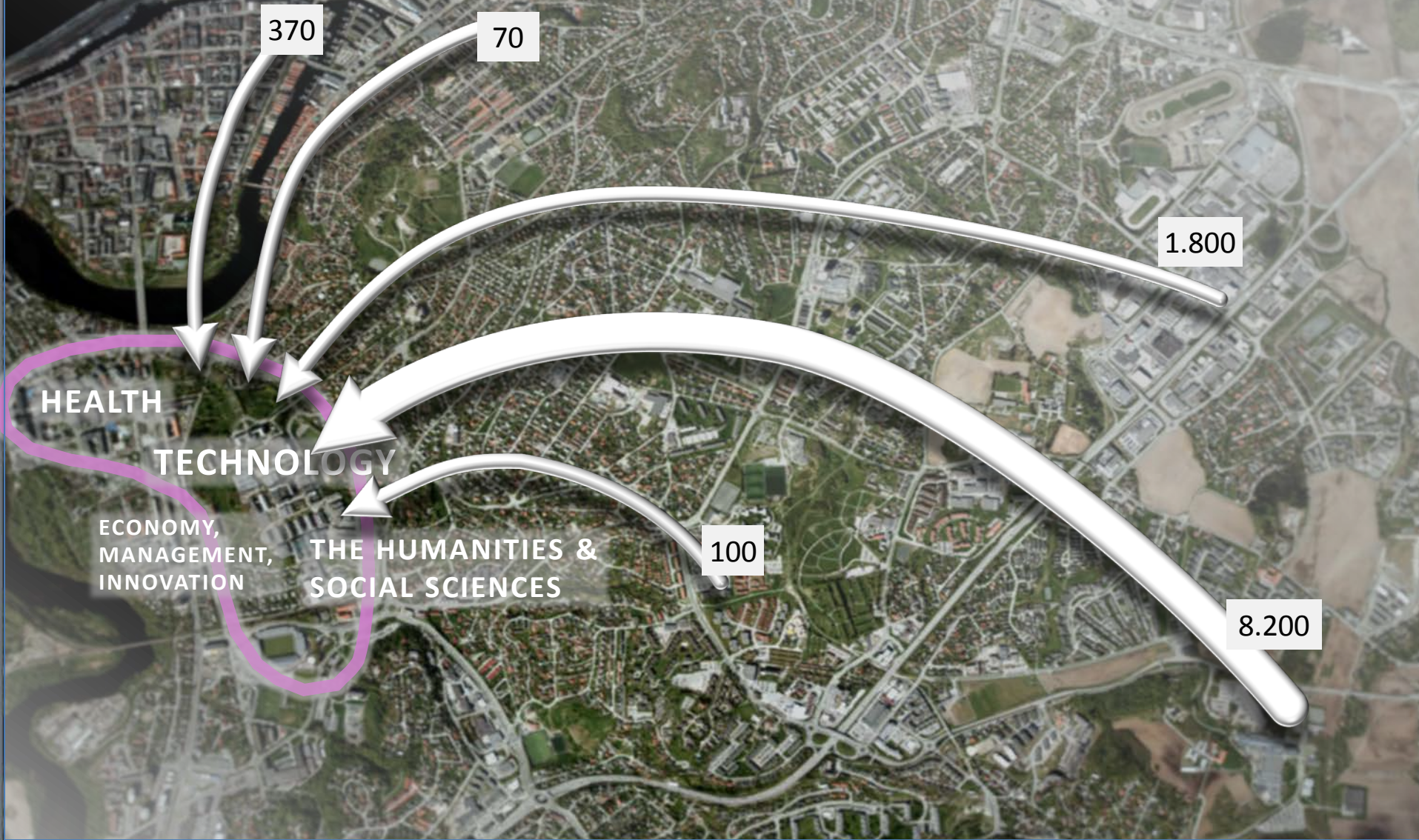
Gløshaugen



Øya

Merging campuses –

Availability, attractiveness, effectiveness, flexibility



Kategori 1: SAMMENSLÅINGER

14 institusjoner blir til 5

- Universitetet i Tromsø – Norges arktiske universitet (UiT)
- Høgskolen i Harstad (HiH)
- Høgskolen i Narvik (HiN)

- Universitetet i Nordland (UiN)
- Høgskolen i Nesna (HiNe)
- Tentativt Høgskolen i Nord-Trøndelag (HiNT)

- Norges teknisk-naturvitenskapelige universitet (NTNU)
- Høgskolen i Sør-Trøndelag (HiST)
- Høgskolen i Gjøvik (HiG)
- Høgskolen i Ålesund (HiÅ)

- Universitetet i Stavanger (UiS)
- Høgskolen Stord/Haugesund (HSH)

- Høgskolen i Buskerud og Vestfold (HBV)
- Høgskolen i Telemark (HiT)



Kategori 2: Sammenstående som vil utredes

5 statlige institusjoner kan bli til 2
4 private institusjoner kan bli til 1

- Universitetet i Bergen (UiB)
- Kunst- og designhøgskolen i Bergen (KHiB)

- Arkitektur- og designhøgskolen i Oslo (AHO)
- Kunsthøgskolen i Oslo (KHiO)
- Norges musikkhøgskole (NMH)

STATLIGE

- Diakonhjemmet høgskole (DH)
- Misjonshøgskolen (MH)
- Haraldsplass diakonale høgskole (HDH)
- Høgskolen Betanien (HB)

PRIVATE

Kategori 3: Fremtidig plass avklares på grunnlag av kvalitetskriterier

- Høgskolen i Molde – Vit. høgskole i logistikk
- Høgskolen i Bergen (HiB)
- Høgskolen i Hedmark (HiHe)
- Høgskolen i Lillehammer (HiL)
- Høgskolen i Oslo og Akershus (HiOA)
- Høgskolen i Sogn og Fjordane (HiSF)
- Høgskolen i Volda (HiVo)
- Høgskolen i Østfold (HiØ)
- Norges Handelshøgskole (NHH)
- Norges idrettshøgskole (NIH)
- Norges miljø- og biovitenskapelige universitet
- Universitetet i Agder (UiA)
- Universitetet i Oslo (UiO)

Kartet viser institusjonens hovedcampus.



Meld. St. 18

(2014–2015)

Melding til Stortinget

Konsentrasjon for kvalitet

Strukturreform i universitets- og høyskolesektoren



VEKST

ELITE

DIGITAL

URBAN



Elite



Aalto Universitet



UNAM



Growth



Tsinghua



Cambridge University



M.I.T.



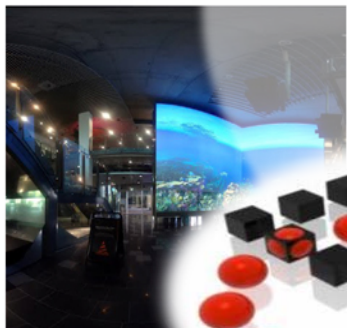
Karolinska



Harvard University



Hong Kong University



London Met



M.I.T. Media Lab



Khan Academy



TU Delft



University College London



ET Zürich



TU Berlin

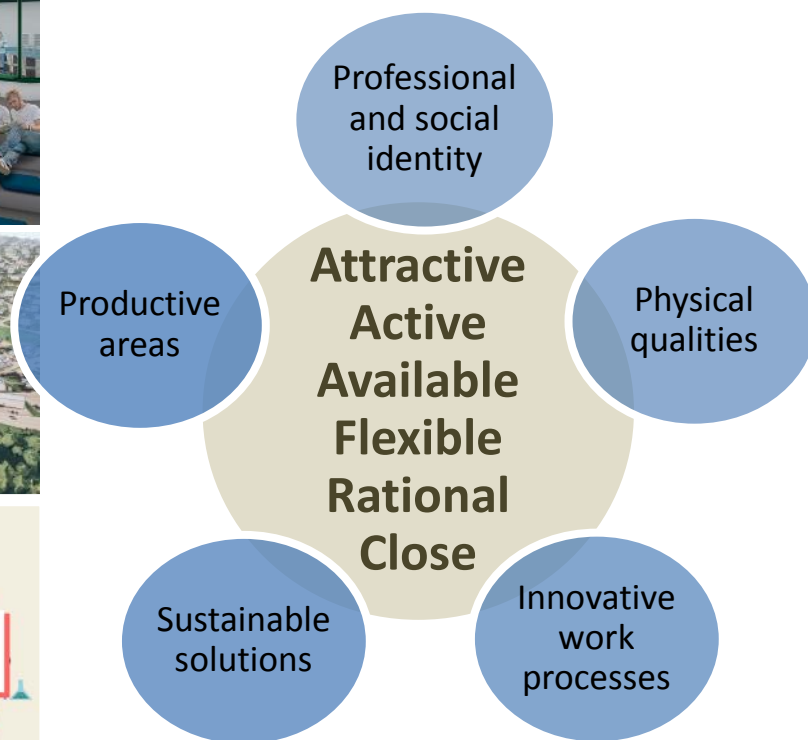


Bilgi University

Digital

Urban

NTNU campus tomorrow and in 2060

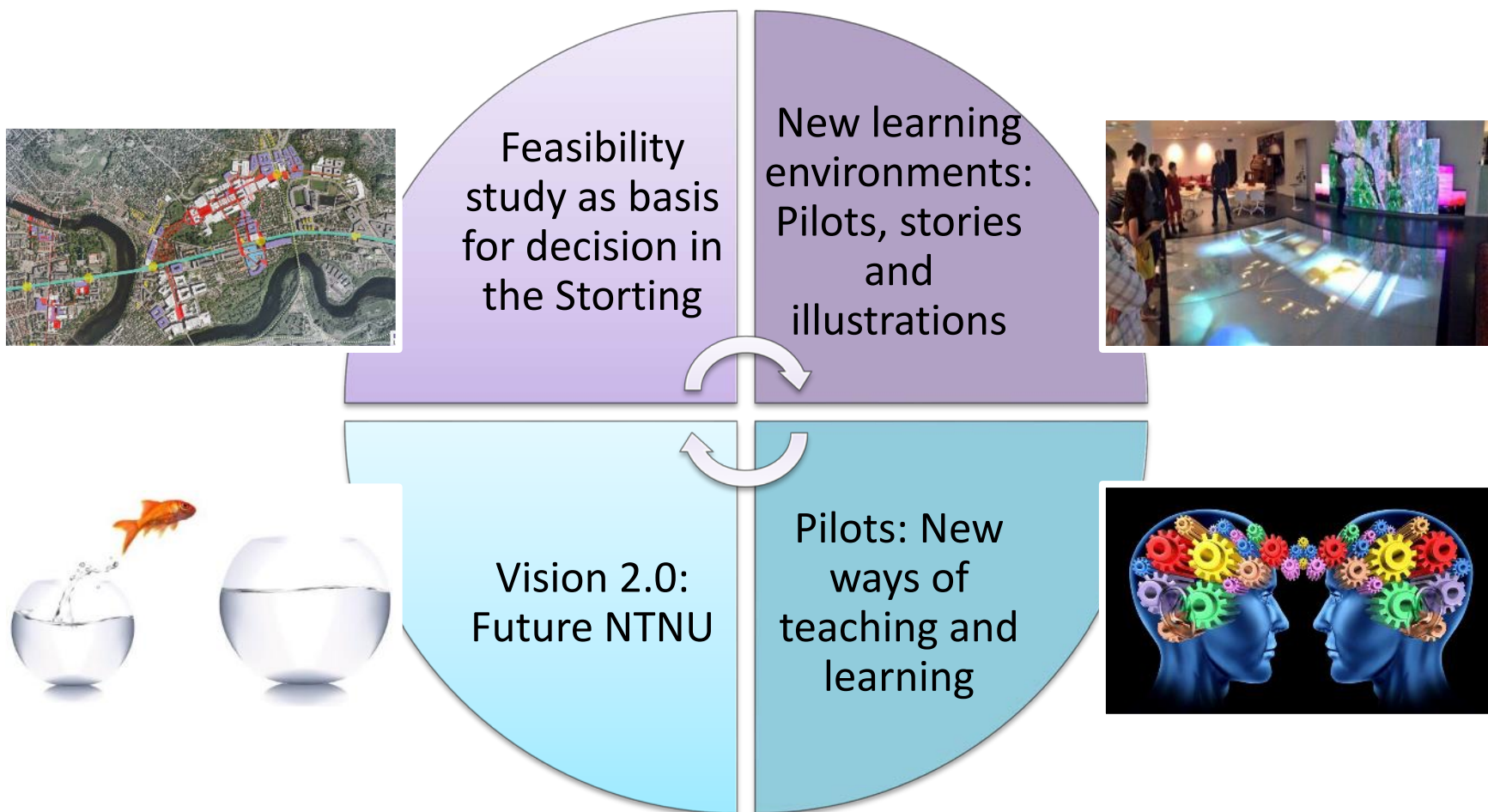


Work, learn, experience, and live 24/7



Illustrasjon: Bergersen arkitekter og SiT

Lines of work

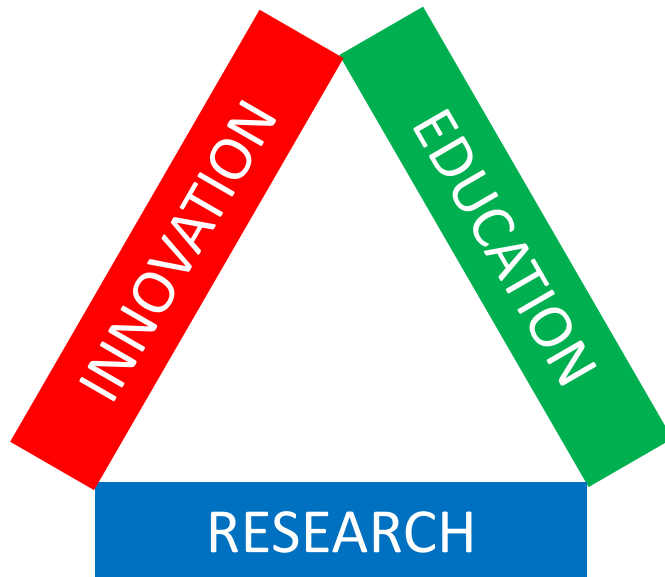


Linking Education, research and innovation

International trends



Trends in education



Changing student - teacher interaction

Student-centred thinking

Multidisciplinary

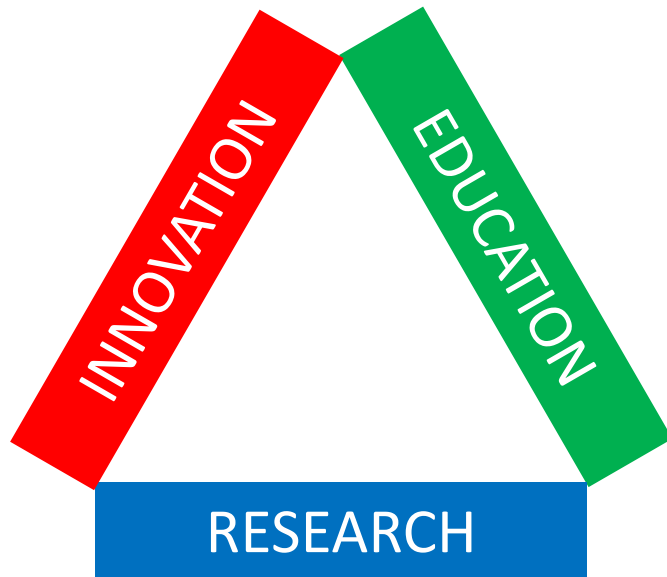
Close to practice

Teamwork and experimentation

Virtual work forms

Mobility

Trends in research



Multidisciplinary

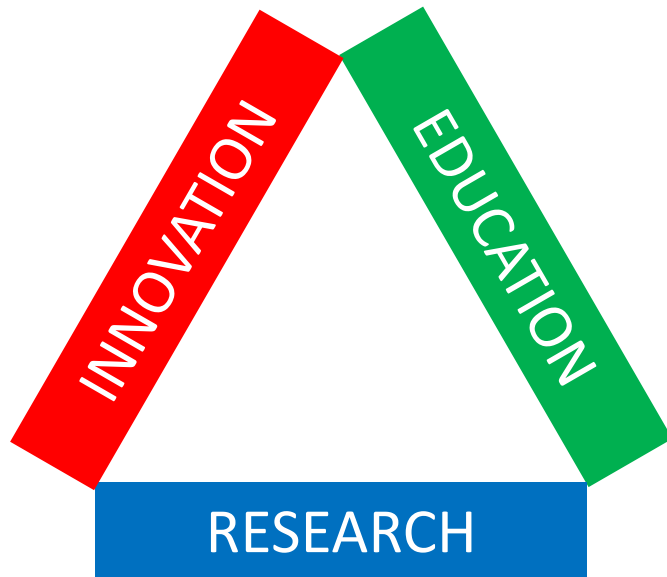
Close to practice

Virtual work forms and
mobility

Experimental

Centre establishments

Trends in innovation



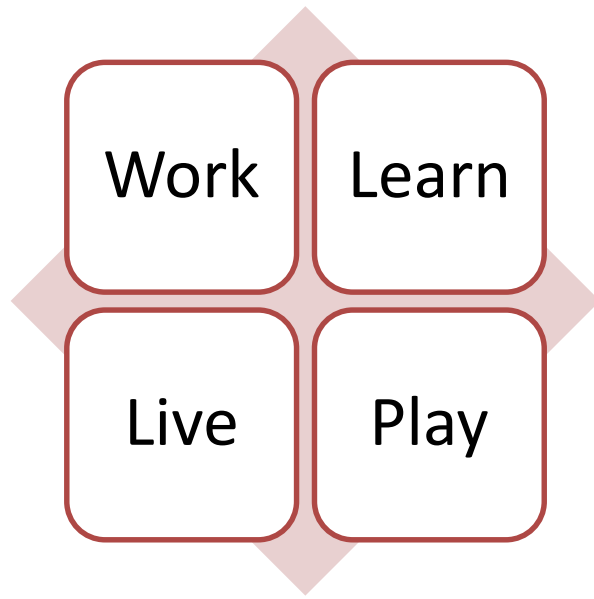
Multidisciplinary

Experimental

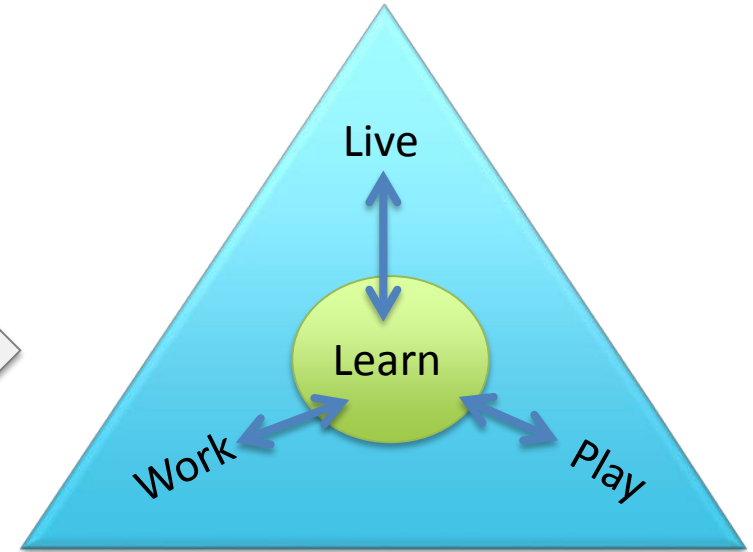
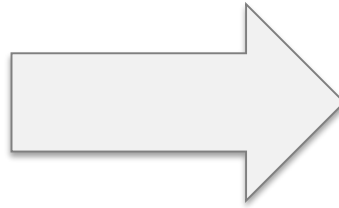
Close to working life and
society

Centre establishments

Learning is in the core



Before:
Everyday life divided into
separate activity zones

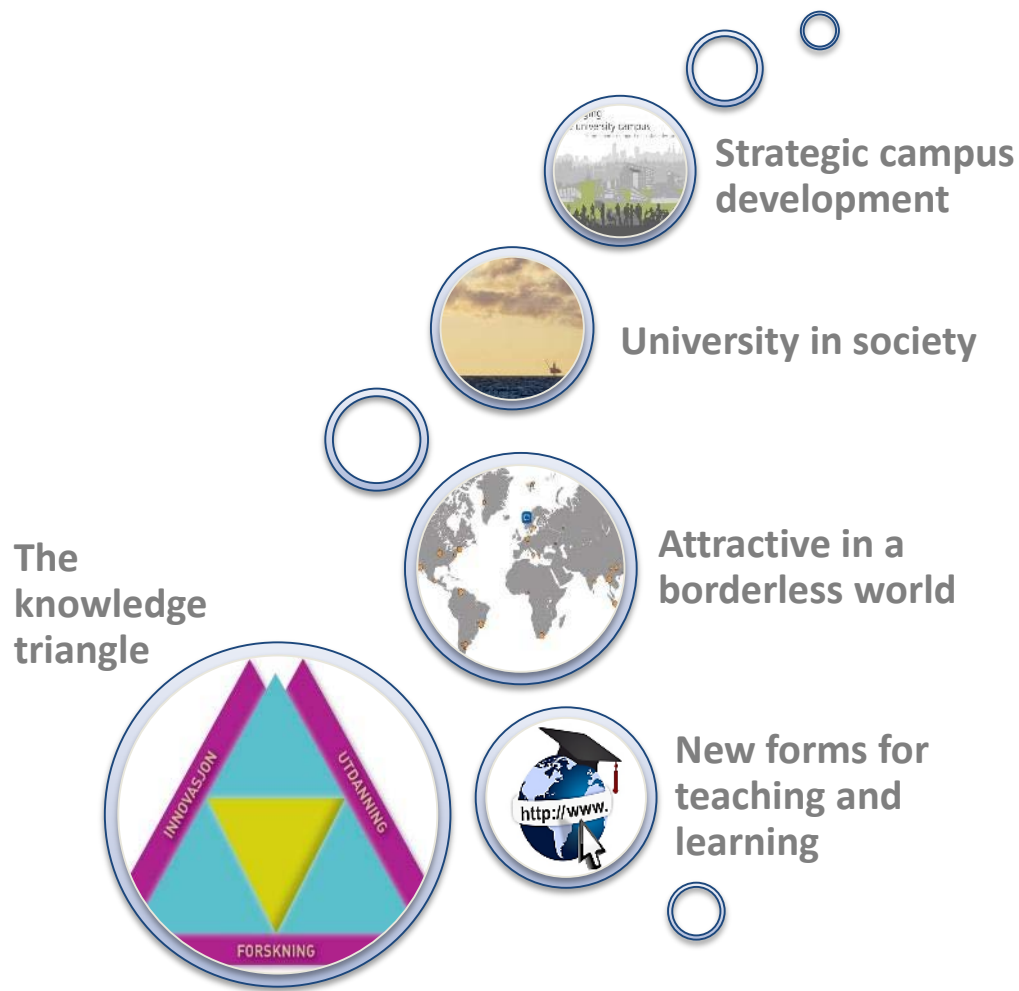


Today:
Different parts of everyday life
become integrated through
learning

**- Consequently, ideas
about campus must also
change**

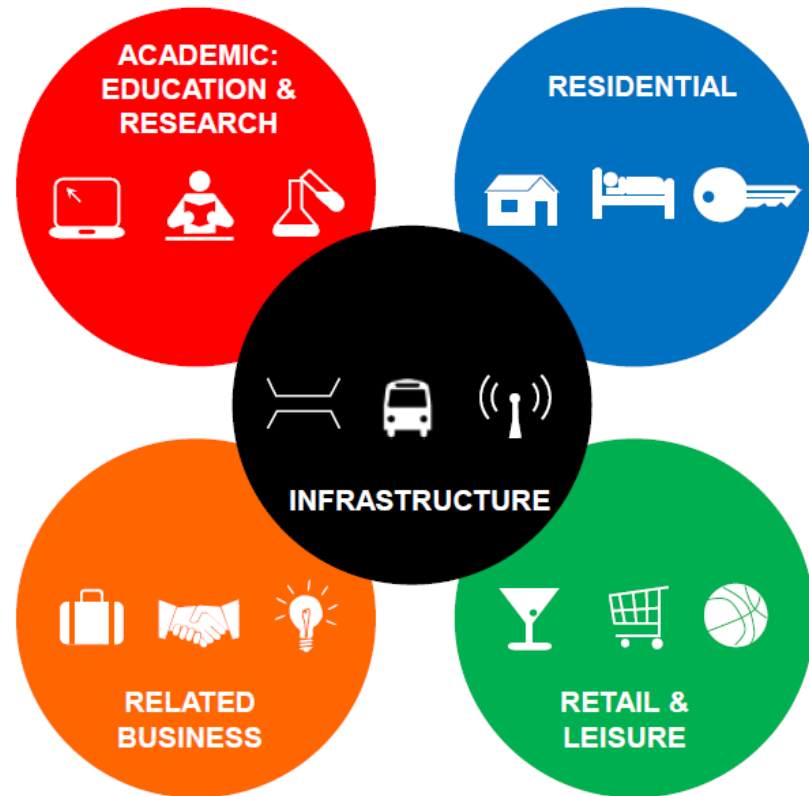
Trends interpreted

- Attractive, available and shared meeting places for formal and informal learning
- Flexible premises easily adaptable to new purposes
- Open areas for visibility and availability of learning
- Co-location of different activities and functions, areas used by various groups
- Co-location and short distance between activities



- the functional definition of "campus" must change

- **ACADEMIC**
classrooms, library, offices,
laboratories, lecture halls, ...
- **RESIDENTIAL**
student housing, hotels, ...
- **RELATED BUSINESS**
start-ups, incubators, industry, ...
- **RETAIL & LEISURE**
sports, restaurants, cafes, ...
- **INFRASTRUCTURE**



© Alexandra den Hejer, MSc PhD, TU Delft - <http://managingtheuniversitycampus.nl/>



Co-localization as enabling factor

Proximity

- enables better use of experimental areas and educational facilities, as well as of common services.

Teamwork and experimentation

Co-localization and public meeting places stimulates cooperation across traditional organizational and disciplinary borders.

Multidisciplinary

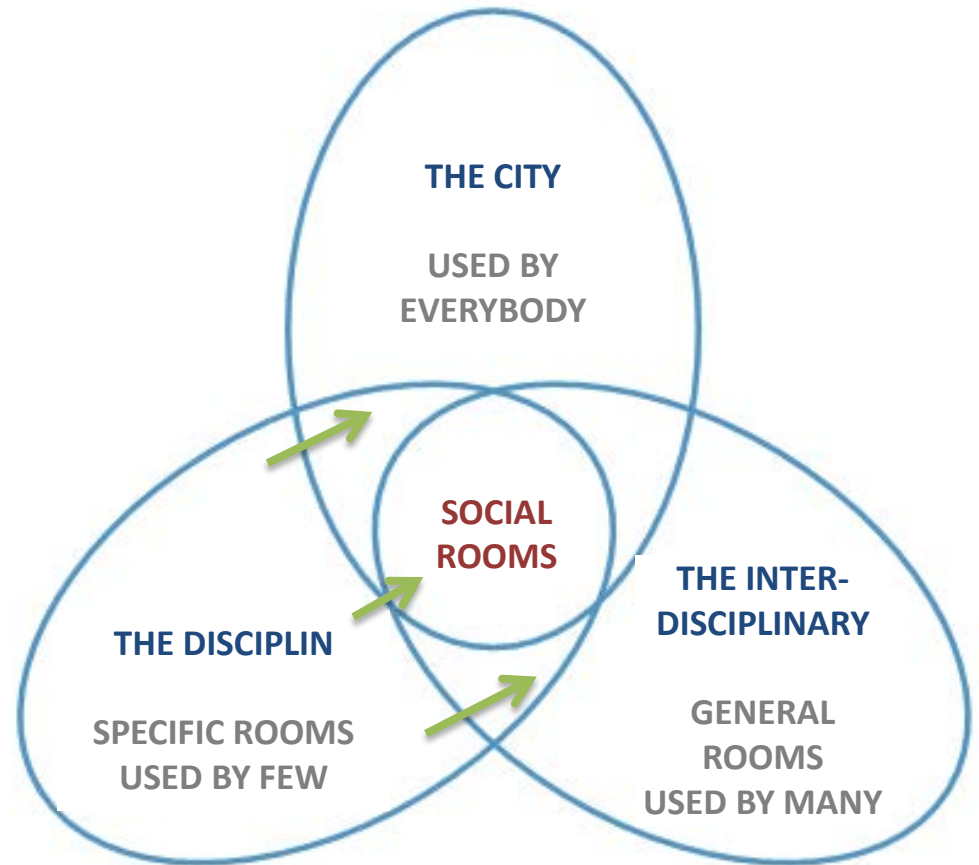
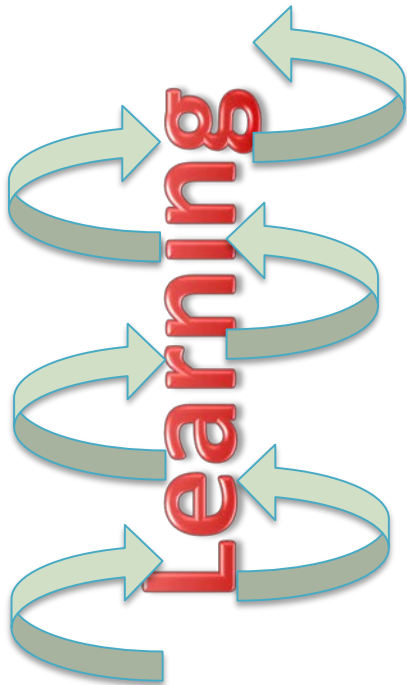
Accessible and attractive meeting places facilitates communication in and across communities of practice.

Close to working life and society

Distance

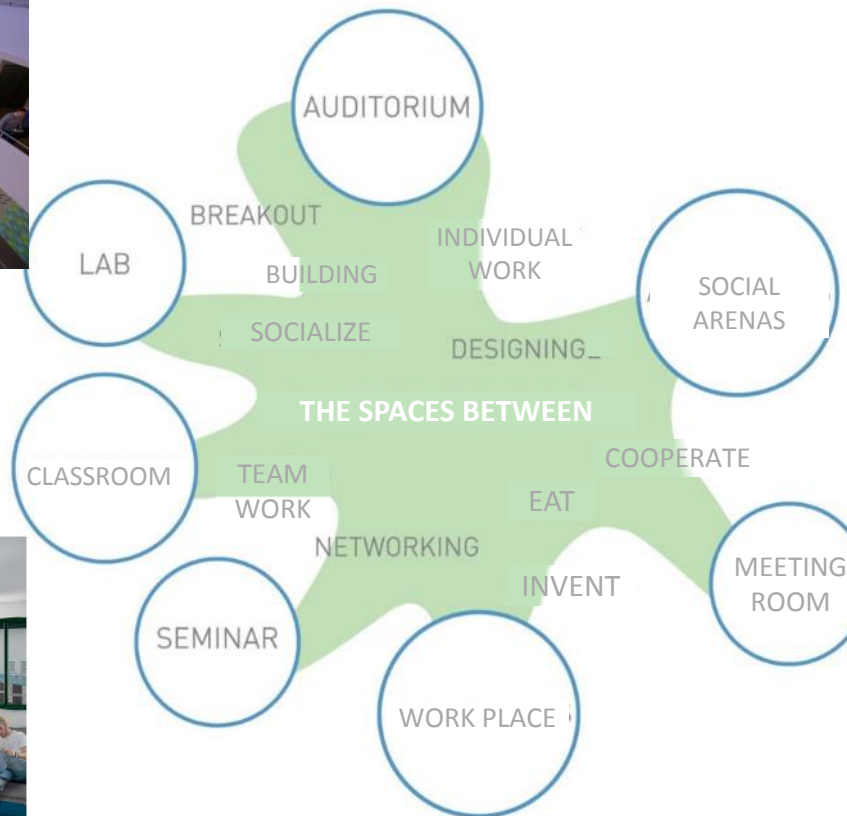
Administration and educational planning are impeded by travel time and geographical distance.

Geographical distance inhibits students opportunity of selecting topics across traditional organizational and disciplinary borders.



Integration of knowledge →
Changing approaches to learning →
New spaces, learning tools and support systems

Innovative work processes – integrated, multidisciplinary, productive





The expectation about 'rationality'

NTNU is expected to develop a physical design for 'rational education and research'

Pedagogic rationality

- Suitable ways of teaching

Research-related rationality

- Dependant on the ontological, epistemological and ethical basis of research

Economic rationality

- Cost-benefit evaluations

Playing with ideas

Active spaces in between



Attractive and open



Available and close



Visible knowledge development



Flexible areas for teaching and learning



Productive areas

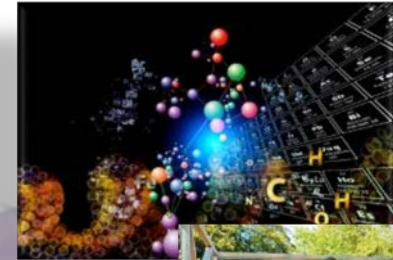
– flexibility and multiuse



Preparing for the future



Incentive
systems



Development
projects



Educational
merit system

NTNU

EXCELLENT TEACHING

University
schools

Teaching
support and
skills
development



ICT in
education



Alternative
approaches
to evaluation



Live Studio at NTNU receives prize for educational quality

Architect project is rewarded with one million NOK from the Ministry of Education and research

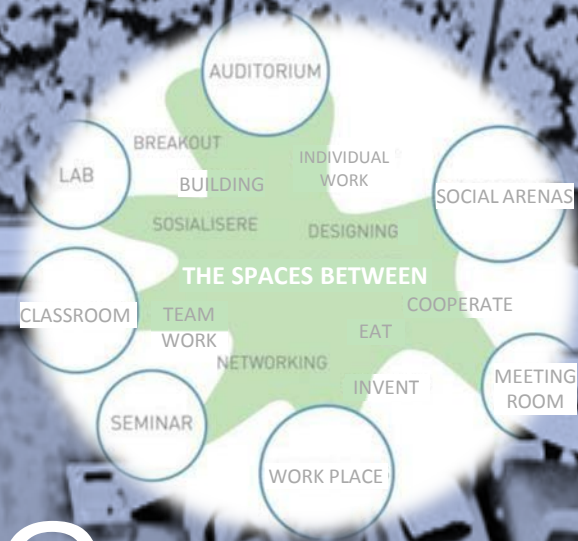
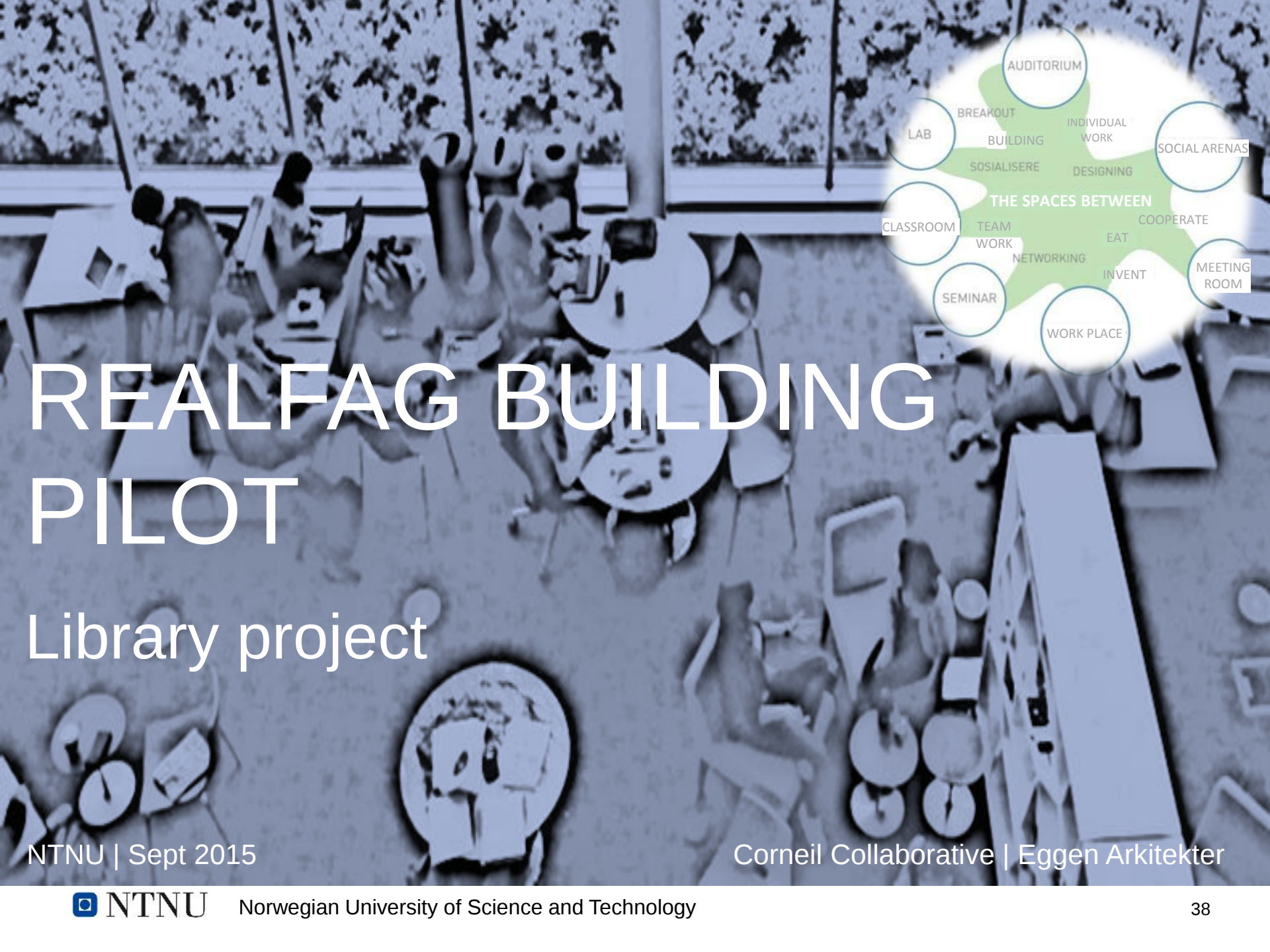




Zero Emission Building: Living lab at NTNU



Illustration: Snøhetta



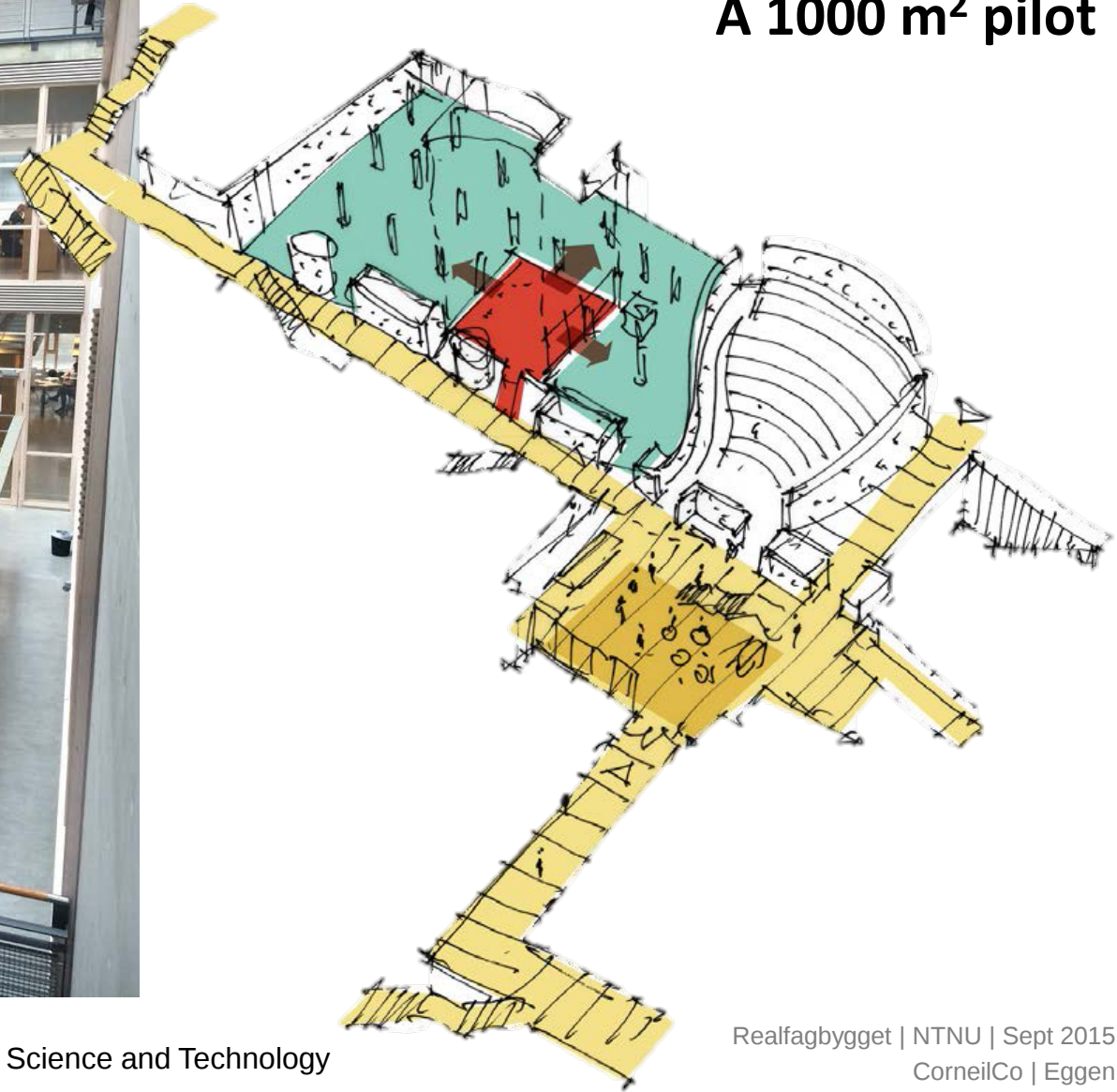
REALFAG BUILDING PILOT

Library project

NTNU | Sept 2015

Corneil Collaborative | Eggen Arkitekter

Innovative learning areas and informal meeting places: A 1000 m² pilot





Thank you for your attention!