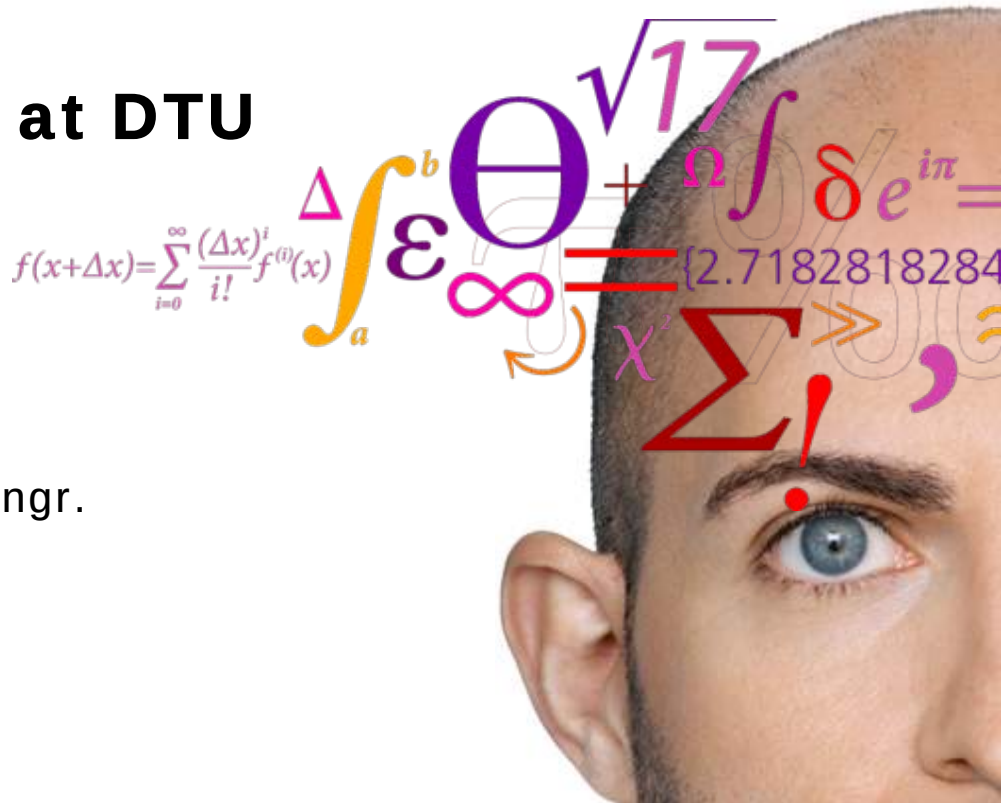
CFM's 2nd. Nordic Conference 29-30 August 2016

Campus Development at DTU



Jacob Steen Møller, PhD, M.Sc. Civ.engr.
Director of facilities and real estate
Campus Service

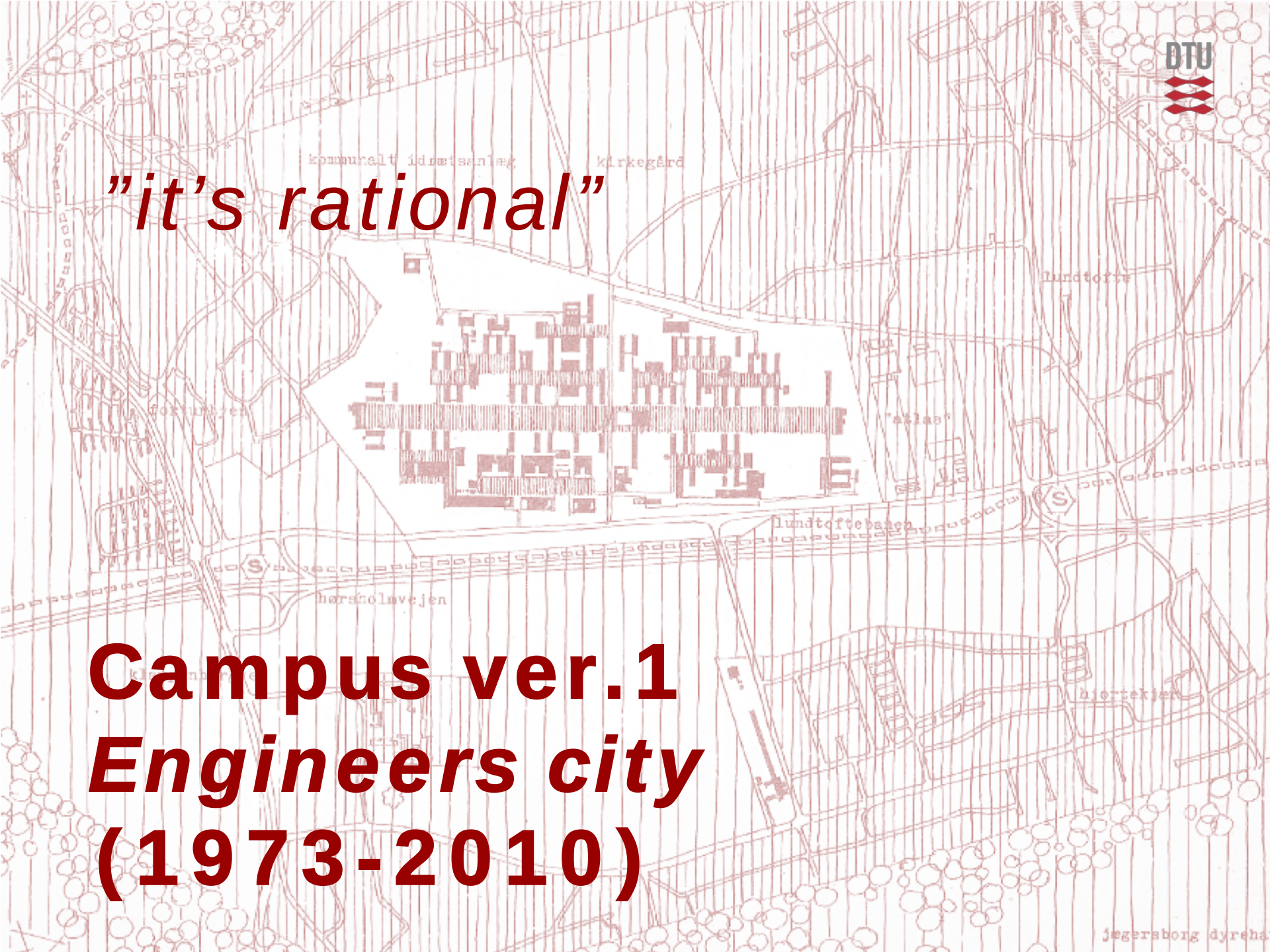


Background and history

DTU History



- Den Polytekniske Læreanstalt (DTU) is founded by H.C. Ørsted i 1829
- Moves to **new campus in Lyngby in 1963**. Official opening 1974
- Self owned with independent board and **ownership of land and facilities** in 2001
- **Mergers** in 2007/2013: Risø National Lab., Food and Veterinary Research, Fisheries Research, Space Research, Transport Research, Copenhagen Engrg. University College



”it’s rational”

Campus ver.1
Engineers city
(1973-2010)

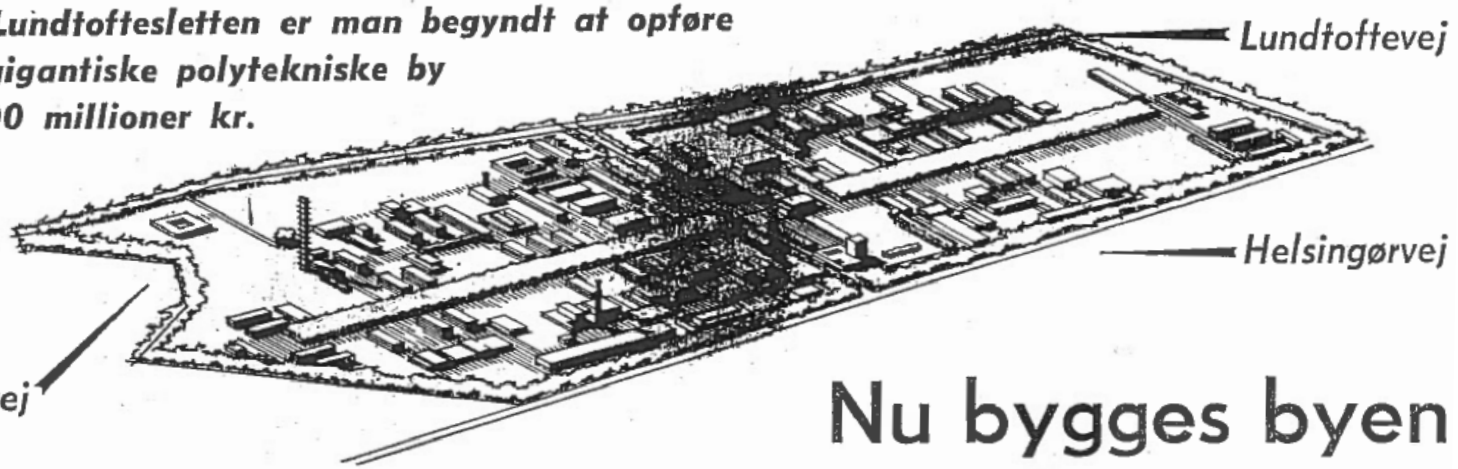
Lundtofte

SØNDAG DEN
16. OKTOBER 1960

Berlingske Tidende

Udgivet af Interessentskabet Berlingske Tidende, Pilestræde 34 — Det Berlingske Officin A/S, København K. — Chefredaktion: Politisk chefredaktør TERKEL M. TERKELSEN — Administrerende chefredaktør: SVEND AAGE LUND
Redaktion: Redaktør AXEL MOOR (ansvarhavende efter presseloven)

Paa Lundtoftesletten er man begyndt at opføre den gigantiske polytekniske by til 500 millioner kr.



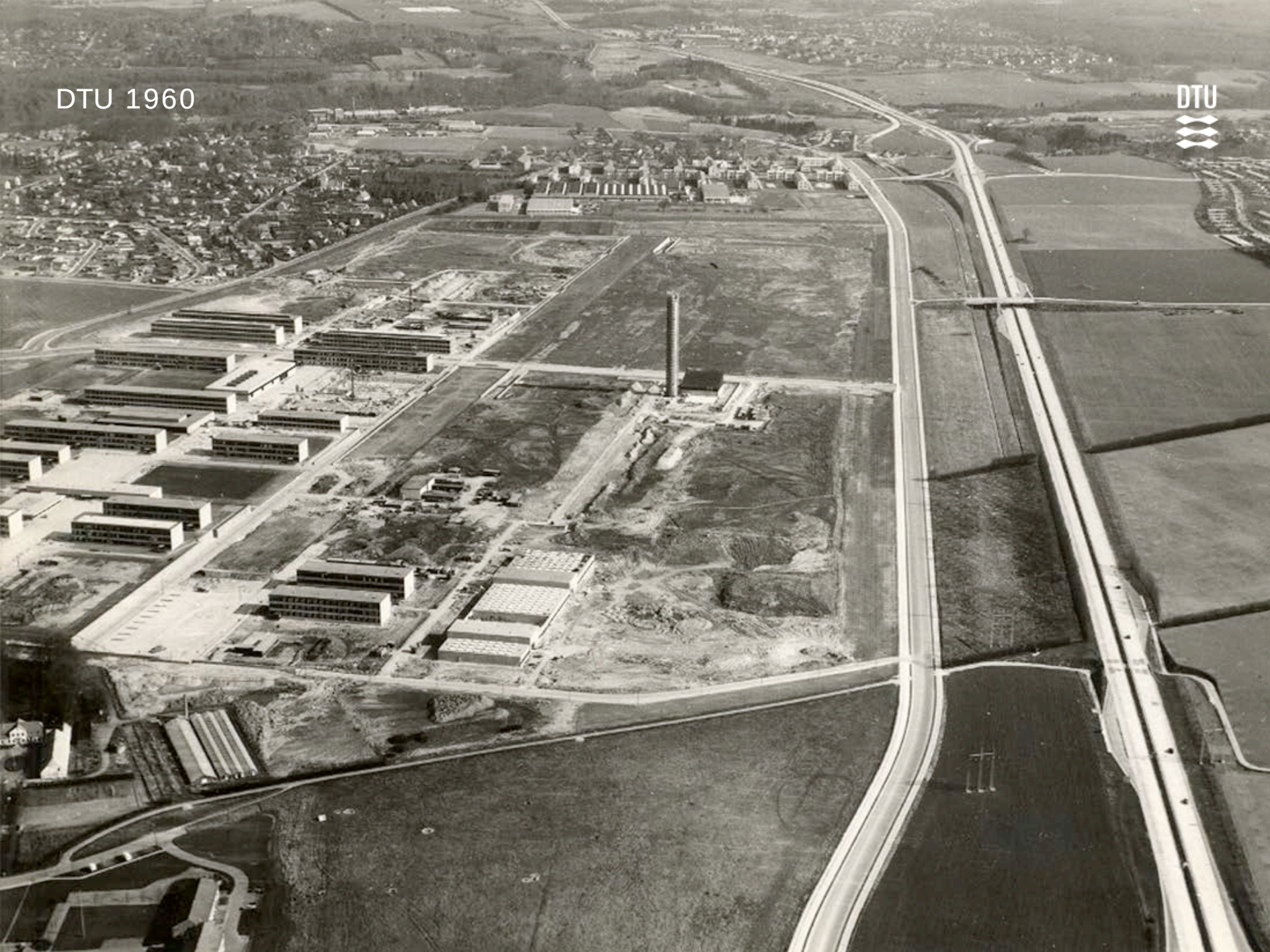
Nu bygges byen til fremtidens teknikere

Tekst: BENT HENIUS
Foto: HAKON NIELSEN

Eva og Niels Koppel i spidsen for et projekt, som staar paa i 10 aar og forbedres fra dag til dag

GRAVEMASKINERNE er gaaet til angreb i Lundtofte. I disse dage har arkitekterne Eva og Nils Koppel givet startsignalet til Danmarks største byggeri. Paa et område mellem Helsingørvejen og Lundtoftevej opføres en hel polyteknisk by. Det er et imponerende projekt til omkring 500 millioner kroner, og det vil først være afsluttet om ti aar. Læserne maa tilgive, hvis det til sin tid viser sig, at oplysningerne i denne artikel ikke har været helt korrekte. Den er baseret paa en samtale med arkitekt Nils Koppel for nogle dage siden, men fra dag til dag sker der ændringer i byggeplanerne.




DTU 1960
DTU

Basic idea



coordinate system – modernist - cars - plateaus – retaining walls – avenue – forrest edge – squares – gardens - patios


DTU 2010
DTU

”we deliver”



Campus ver.2 – *Transforming DTU* (2010-2020)

DTU's strategy and vision 2014-2019

- DTU is a globally recognised and respected technical university –> DTU develops **facilities to higthest international standard**
- DTU strengthen bio-engineering –> DTU's campus plan includes a **bio-engineering centre** at DTU Lyngby Campus.
- DTU considers it crucial to give education an experimental and innovative content –> DTU develops **learning environments to the highest international level**.
- DTU consider the quality of the Campusses as decisive –> DTU **prioritises beautiful and functional campuses with a visible and diverse social life**.
- DTU assumes its responsibility to support sustainability as a national competence –> DTU's **campus development and operation must be sustainable**.

Campus Service key figures 2016

- Owns: 390.000 m2
- Rents: 160.000 m2

- Area Lyngby: 1,0 km2
- Area Risø: 1,8 km2
- + Ballerup, Lindholm, Østerild a.o.

- Operation: 85 M€./year
- Investment (2010-2020): 700 M€

- 215 staff

”we deliver”



Campus ver.2
arkitektural guideline

Campus Plan 2010 – Transforming DTU

1 / Basic structure – coordinate system, avenue, retaining walls

2 / Park and landscape – forest edge, squares, gardens, patios, winter gardens

3 / Space planning – network centres and hierarchy, densification and meeting spaces

4 / Buildings – 'are not islands', new typology, inviting, taller

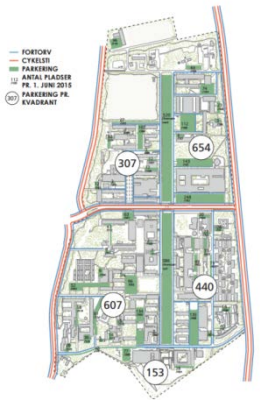
5 / Traffic – approach, roads, paths, parking, bicycles, public transport











1 / Basic Structure

- Coordinate System
- Avenue
- Retaining walls



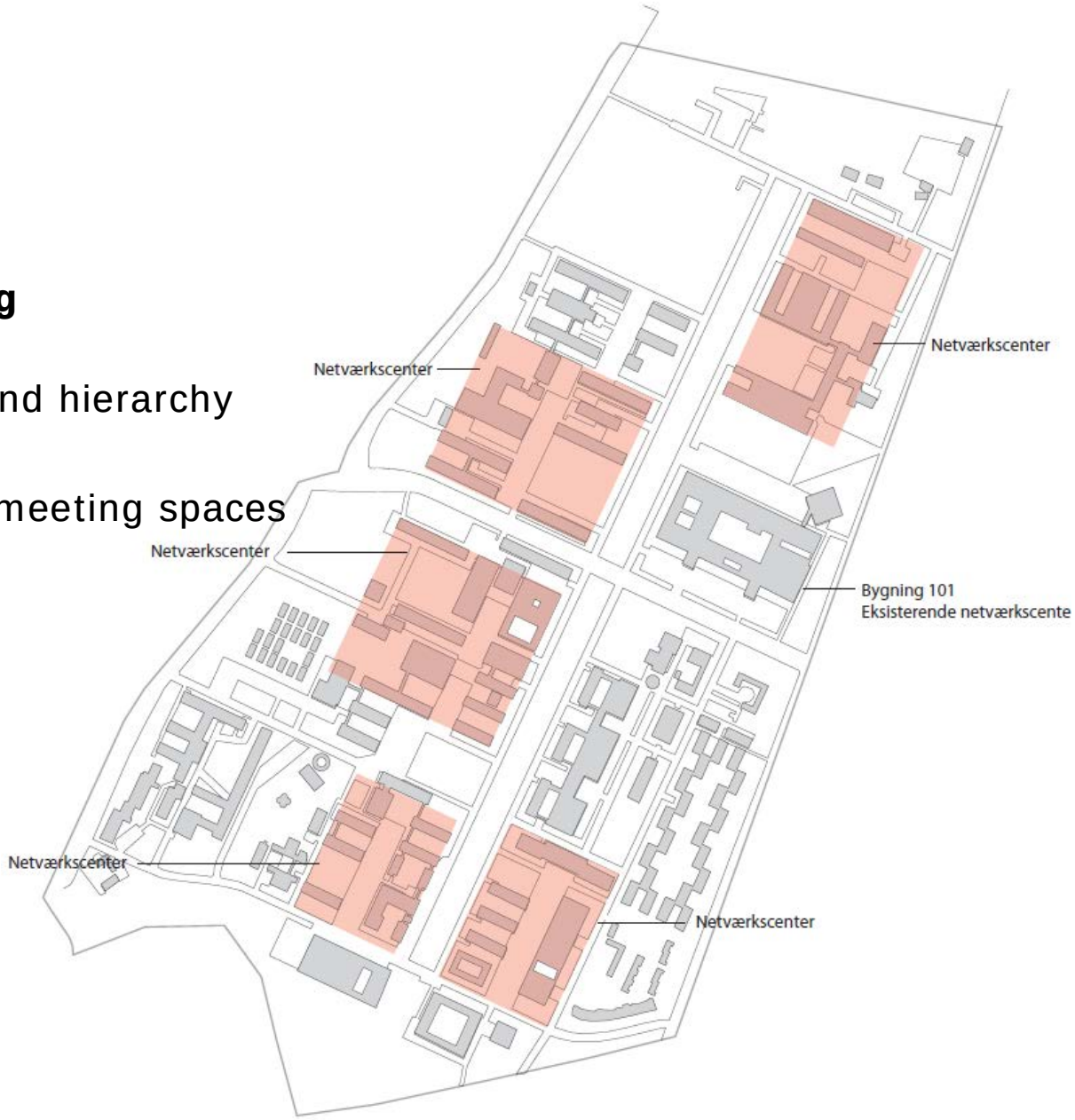
2 / Park and landscape

- Forest edge
- Park
- Square
- Garden
- Patios
- Indoor gardens



3 / Space planning

- Network centres and hierarchy
- Densification and meeting spaces



4 / Buildings

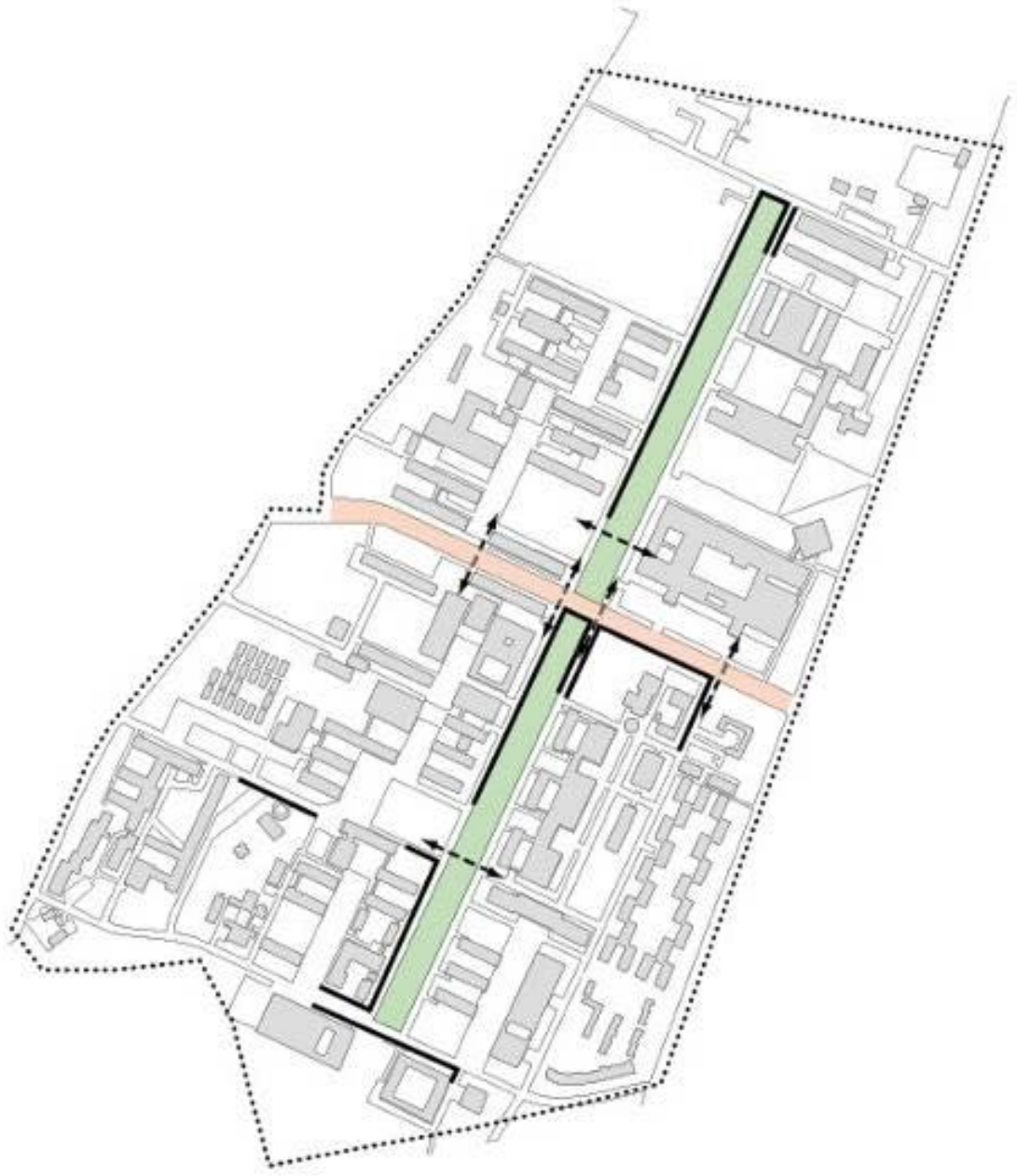
- ‘Are not islands’,
- New typology
- Inviting
- Taller
- Energy efficient




Sigtelinie A
Sigtelinie B
Sigtelinie C
Sigtelinie D
Sigtelinie E
A
B
C
D
E

5 / Traffic

- Approach roads
- Paths, shared space
- Parking
- Bicycle Strategy
- Public Transport



”we deliver”



Campus ver.2
University goals

Campus Plan 2010 - goals

1 / Co-locate

2 / Bio-engineering centre

3 / Growth

4 / Research infrastructure

5 / Learning environment and campus life

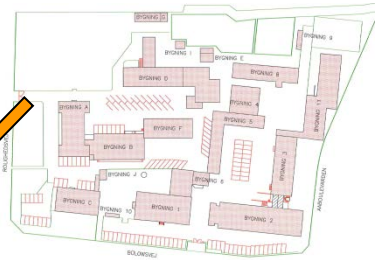
6 / Sustainable



1. Co-locate Bio-engineering 2016



DTU Food
Mørkhøj



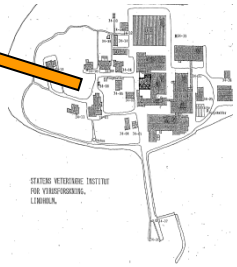
DTU Veterinary
Frederiksberg



DTU AQUA
Charlottenlund



In total 750 employees
40.000 m2



DTU Veterinary
Lindholm og Aarhus

2 / Bio-engineering center



- Co-locate FOOD/VET/AQUA
- DTU Biosustain
- New facilities for DTU Chemistry
- New laboratories for DTU Bio-Engineering
- New upscaling facilities for DTU Chemical Engineering

Life Science & Bioengineering

1. Bygning 201+204
2. Bygning ALD
3. Bygning 202
4. Bygning 205

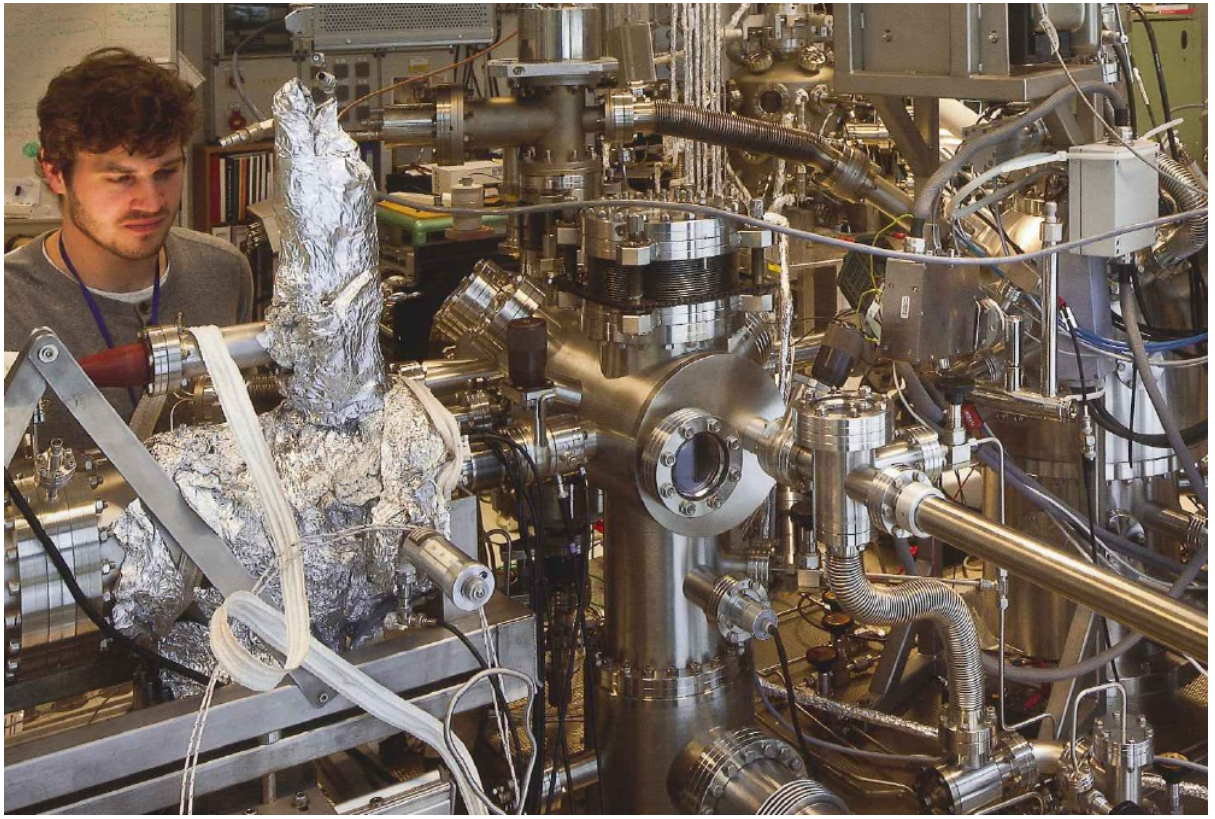


3 / Growth

DTU Key figures 2008-2018	2008	2014	*2018*	*2020*
Turnover (kkr.)	3.483.843	4.857.015	*5.214.719*	*5.333.924*
Anual growth in %/year		6,6%	*1,5%*	*1,1%*
Employees (FTE`s)	4.253	5.813	*6.093*	*6.180*
Students (FTE´s)	4.109	6.862	*7.428*	*7.728*
Students (enlisted)	6.270	10.311	*11.161*	*11.612*
Buildings (m2 Brutto)	529.146	615.142	*638.287*	*581.889*
Turnover/Building (kr./m2)	6.584	7.896	8.170	9.167
m2/employee	124	106	105	94
m2/student	84	60	57	50
m2/(employees+students)	50	38	37	33
FM Costs/Turnover	**23%**	**17%**	**19%**	**19%**

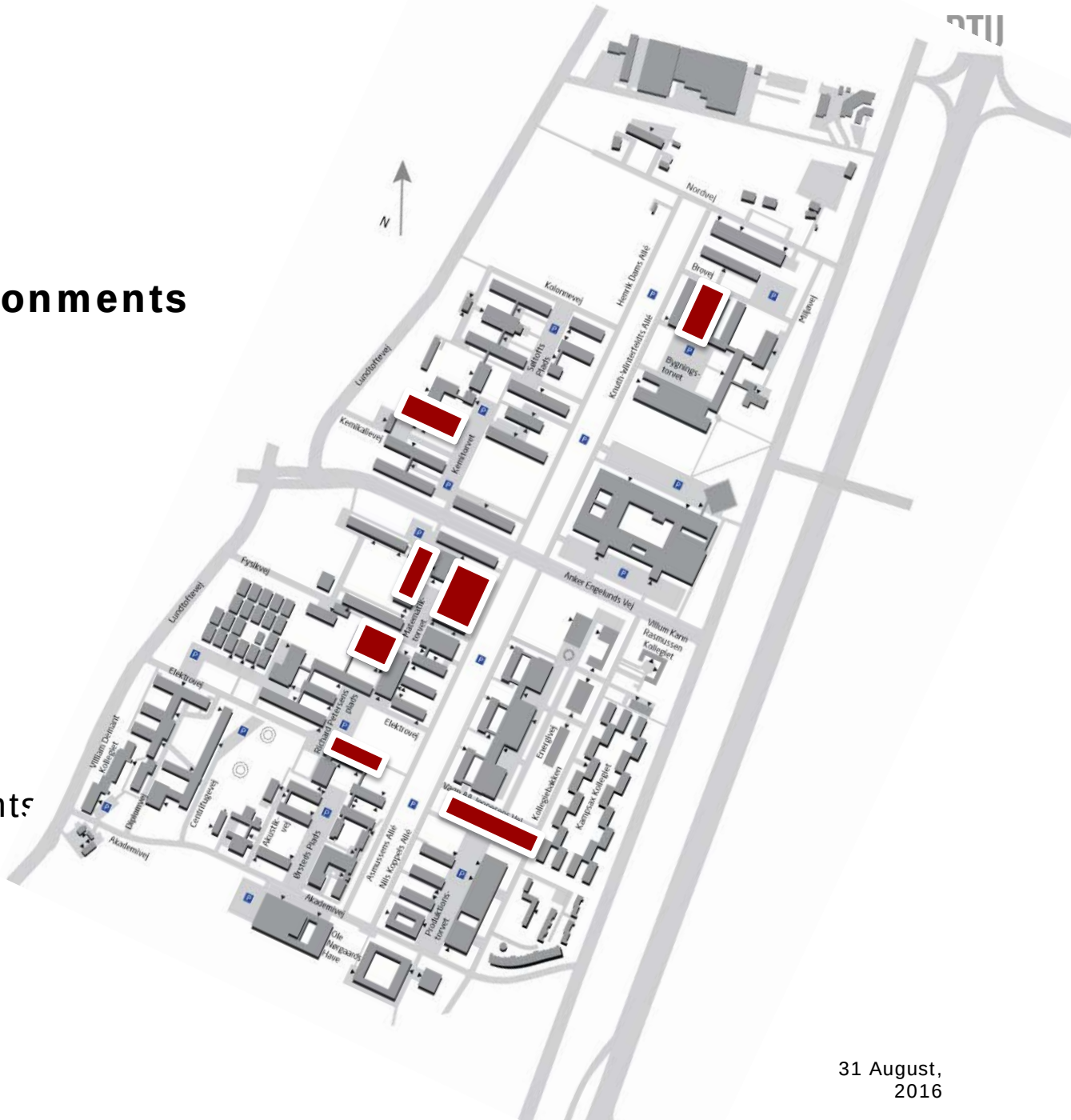
4 / New labs

- Powerlab
- Geo-laboratorium
- Audiovisuel lab
- E-learning
- New Research Vessel



5 / Learning Environments

- 324 Compute
- Auditoriums
- 127 Building Design
- 101 Library
- Street food and events
- Skylab



DTU Skylab B.373

Brutto area: 1550 m2

Budget: 25 mio. kr.

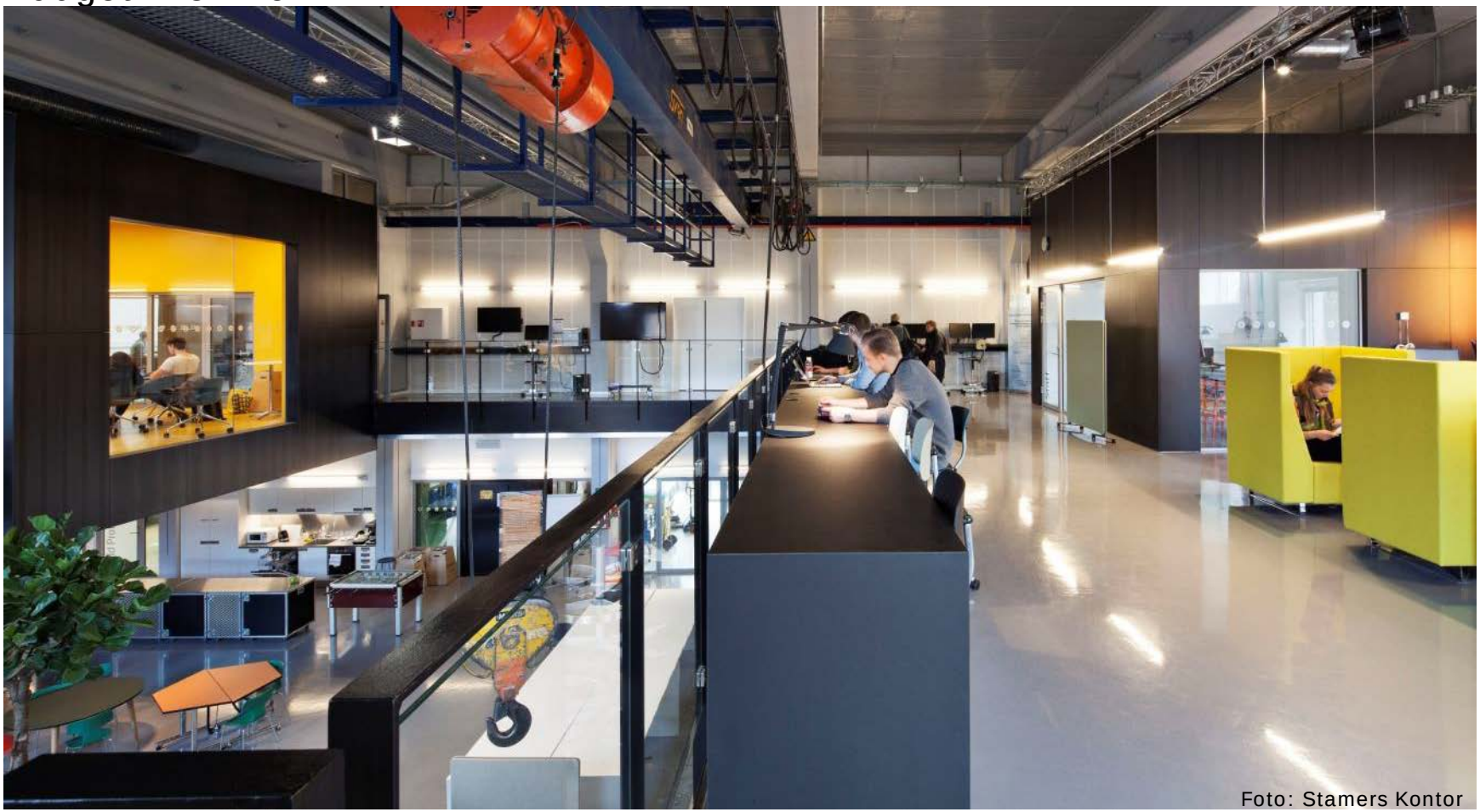


Foto: Stamers Kontor

World Class Facilities – Learning Space



Foto: Stamers Kontor

DTU – Læringsmiljø

Campusliv - Streetfood





6 / Sustainable

- Living Lab/Smart Campus
- Shared and Multifunctional Facilities
- Integrated Energy Planning

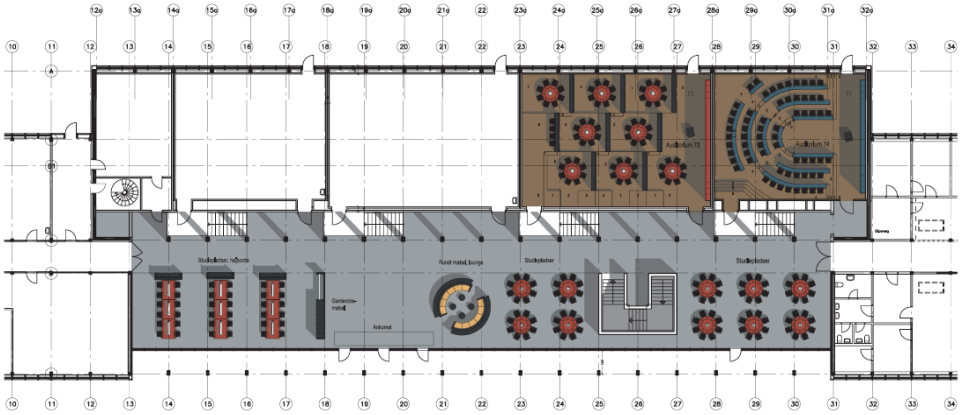




Foto: Stamers Kontor



”all is possible”

Campus ver.3 (2016-2029)

”all is possible”



Campus ver.3
Preconditions

Preconditions for Campus ver.3

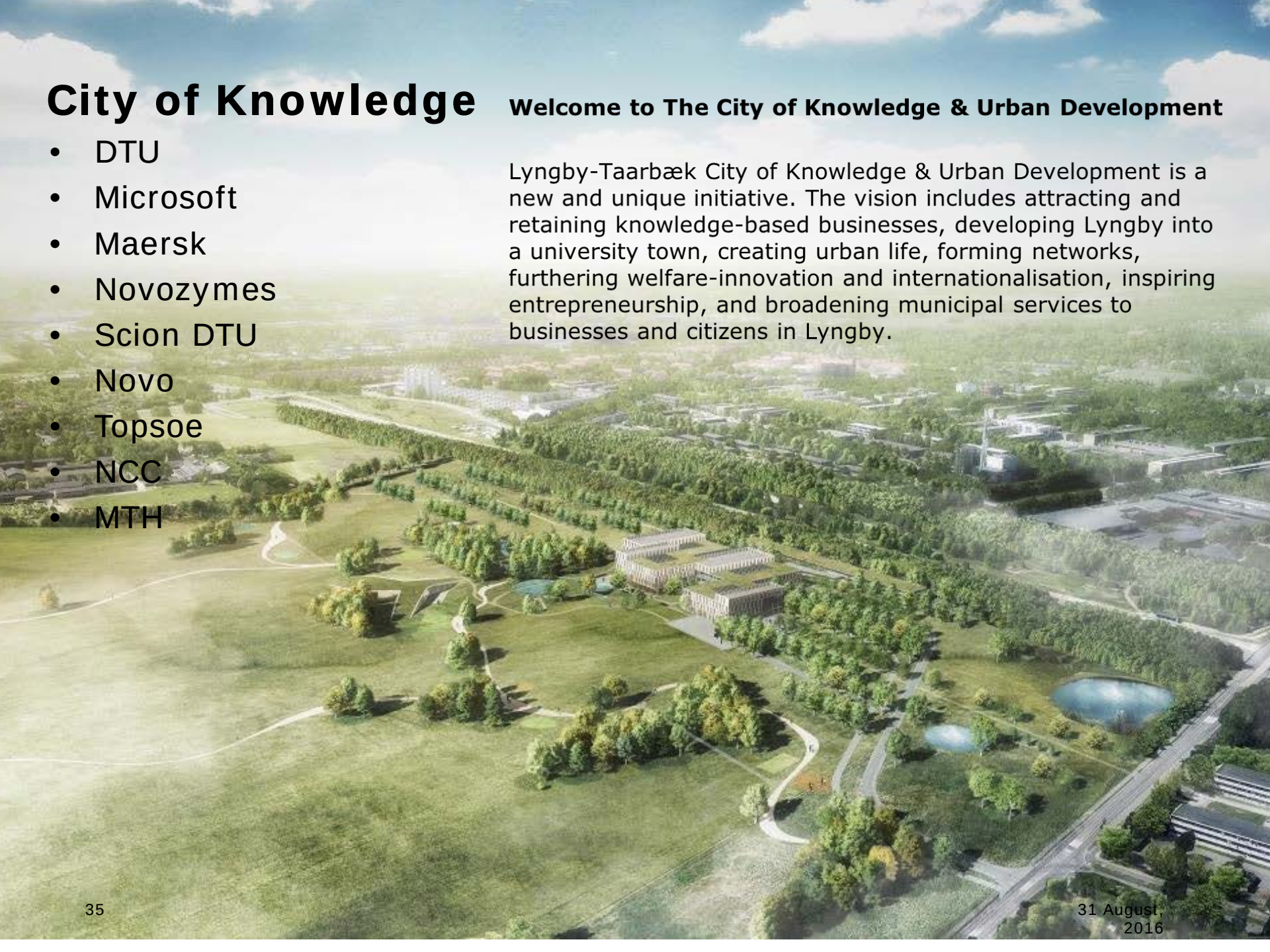
- **City of Knowledge**
- DTU owns **large building rights**
- **Demand for development** space close to DTU.
- DTU wish to contribute to **value creation through real estate development**.
- DTU wish to maintain **university autonomy,** therefore land ownership is maintained
- **Light Rail** through campus

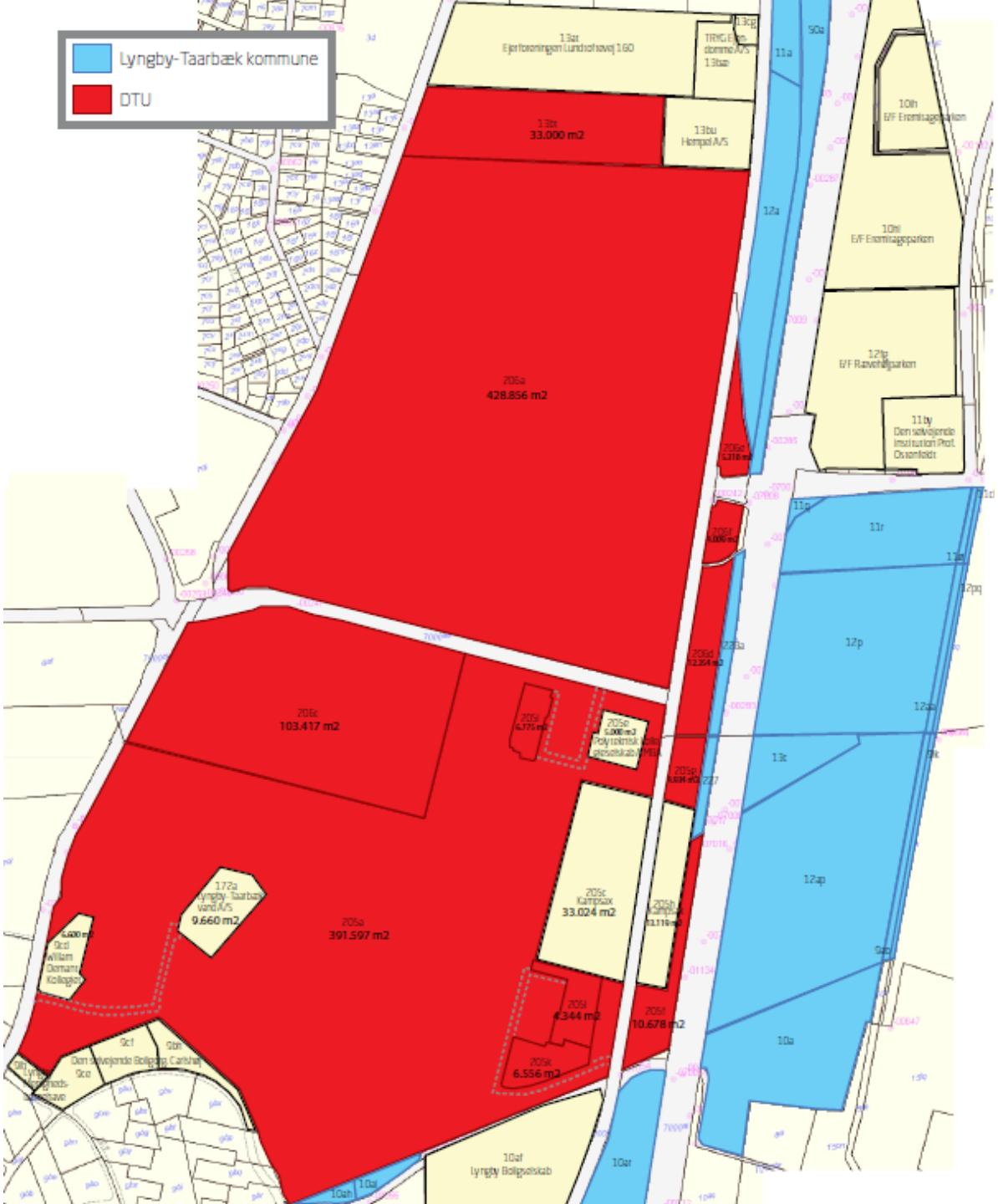
City of Knowledge

- DTU
- Microsoft
- Maersk
- Novozymes
- Scion DTU
- Novo
- Topsoe
- NCC
- MTH

Welcome to The City of Knowledge & Urban Development

Lyngby-Taarbæk City of Knowledge & Urban Development is a new and unique initiative. The vision includes attracting and retaining knowledge-based businesses, developing Lyngby into a university town, creating urban life, forming networks, furthering welfare-innovation and internationalisation, inspiring entrepreneurship, and broadening municipal services to businesses and citizens in Lyngby.




Lyngby-Taarbæk kommune
DTU
13at
Ejerforeningen Lundtoftevej 160
13bu
Hempel A/S
13bt
33.000 m2
206a
428.856 m2
206c
103.417 m2
205a
391.597 m2
205c
Campusx
33.024 m2
205f
10.678 m2
205k
6.556 m2
172a
Lyngby-Taarbæk vand A/S
9.660 m2
10af
Lyngby Boligselskab
10h
E/F Enemærkeparken
10hl
E/F Enemærkeparken
12tp
E/F Ravnehøjparken
11by
Den selvejende Institution Prof. Ostenfeldt
DTU

VÆKSTSCENARIER

SAMMENLIGNING MED KENDTE TÆTHEDER

I studiet "Den tætte by - danske eksempler"* undersøges en række danske byer ift. deres tæthed.

Der undersøges et udsnit på 1200 m X 1200 m, der her anvendes som sammenligningsgrundlag for Lyngby Campus' tæthed.

De nævnte tætheder er bruttobebyggelsesprocenter dvs. incl. veje, parker og andre friarealer.

*Udarbejdet for By- og Landskabsstyrelsen, Miljøministeriet af Center for Byplanlægning, Kunstakademiets Arkitektskole Projektgruppe: Professor Jens Kvorning, Bruno Tournay og Lisbeth Nørskov Poulsen

27 %
HVIDOVRE



83 %
FREDERIKSBERG



119 %
VESTERBRO



125 %
AARHUS CENTRUM



0 %

125 %



36 % DTU 2020

4

JUUL | FROST ARKITEKTER

Parking planning

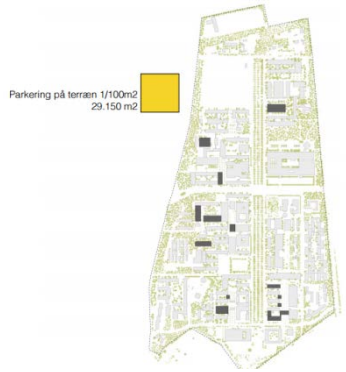
Eksisterende plangrundlag | Ny lokalplan

36% - **50% - 75% - 100% - 125%**















Letbane


THE SCIENCE STRIP
THE SHOPPING HUB
THE EDUCATION CITY
THE HEALTH CENTER
THE ENERGY PARK
THE GREEN WATERFRONT
THE SPORTS ACROPOLIS
THE FOOD STRIP
THE RIVER DELTA
THE INDUSTRIAL LEISURE PARK

Letbane


Anker Engelunds Vej
Akademivej
Lundtoftevej
Lundtoftegårdsvej
Helsingørmotorvejen E47
Niels Koppels Allé
Asmussens Allé
kommende
kollegievej 8000 m2

Guided tours today at 17.00

1. **Behind the scenes:** Anders B. Møller
2. **Recently developed facilites**: Jacob S. Møller
3. **Building sites**: Claus Møller Rasmussen

Site visit

”all is possible”



Thank you