Technical University of Denmark, DTU

‘Evolution of University Learning Facilities on Campus’
About us:

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  Technical University of Denmark – DTU

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DTU Service departments

- AUS: Office for Study programmes and student affairs
- AIT: Office for AV and IT
- CAS: Campus Service
Technical University of Denmark

DTU is an internationally recognized elite university with high standards. Our mission is to develop applicable technical solutions for the greater benefit of society, which are grounded in science.

Lyngby Campus built between 1959-1974
Ballerup Campus built between 1988-1995
Technical University of Denmark
We educate engineers

6,000
staff of DTU

12,000
students at DTU

21%
Ph.d.-students

36%
Teachers & Researchers (vip)

43%
Employees in staff functions

29%
Bachelor of Science (BSc)

35%
Bachelor of Engineering (BEng)

36%
Bachelor of Engineering (BEng)

Programmes
Bachelor of Engineering (BEng) 18
Bachelor of Science (BSc) 22
Master of Science (MSc) 32 + 28 Programmes in co-work with international universities
Transforming DTU 2010-2021
Campus Investments: 800 million euro

More than 25 different building projects have been initiated and are on their way. These aim to create the best conditions for a world-class technical university, which can attract the best researchers and students from all over the world.

The overall vision ‘Transforming DTU’, supports the following 3 areas:

- Life Science Center
- Science and Research Facilities
- Teaching and Learning Environments
DTU shall strengthen and develop formal and informal environments including experimental learning facilities for students

DTU’s strategy 2014-2019
STRATEGIC CAMPUS DEVELOPMENT

Strategic Themes:
- Value creation
- Excellent university environment
- Identity
- Campus environment.

Physical themes:
- Mobility
- Landscape
- Architecture
- Utilities
DTU Projects within Teaching and Learning Environments

- **2013 New building**
  - Building 127

- **2013 New building**
  - Building 324

- **2015 New building**
  - Building 329A

- **2011 Remodelling**
  - Building 421

- **2014 Remodelling**
  - Skylab

- **2016 Remodelling**
  - Building 303
We prioritize the PREDESIGN phase

The objective is to bring clarity to the following topics:

- Clear mission goals for the project
- Establishing project boundaries.
- Specification’s program (user needs), investigation of the full potential within the facilities.
- Risk analysis.
- Well structured project organisation.
- Project plan, time schedule with approval gateways (Steering committee).
Case study: Lechture hall building remodelling project

Building 303A

ca. 3,300 m²
6 lecture halls
3 databars

Remodelling
Executed: 2013-2016
Budget ca. 12,5 mio. Euro
The Project’s process

Dreams, wishes, needs

Room-and geometry

BUDGET

Architecture

Structure

Experience from other projects

Inspiration

User-process

Developing roomtypes:
- Traditional lecture hall
- Flexible lecture hall
- ALC Databar
- Informal Student environment
1. Traditional lecture hall
2. Flexible lecture hall
3. Active learning classroom
4. Informal student environment
Experiences

- Survey (2016)
- Preliminary interview series (2018)
- Effective teaching
- Effects of the teaching and learning environment
Traditional Lecture Hall

- Large classes
- Attention on the teacher
- Not ideal for group work
Flexible Lecture Hall

- Switching back and forth between short lectures and group work session (20 mins ~ 5-10 mins)
- Not ideal for long lectures
- Not ideal for long group work sessions
Active Learning Classroom

- Long sessions of group work
- Not ideal for lectures
Conclusions

• Different class room types support different styles of teaching
• Different class room types support different styles of student activities
• Synergy vs. Non-synergy
• Flexibility is important!
• Low-tech equipment is important!
• Class room instruction manual
• Diversity of available facilities
Future?

WHAT WE DO KNOW
WHAT WE DON'T KNOW

10 YEAR

1 YEAR
Future: Analysis

**Pedagogy**
Developing new didactics

**Strategies for IT**

**Capacity scenarios**
Number of programs and development in student numbers

**Building registration**
Condition + maintenance + development potential
Future: Tools

Tools – suitability
Campus, building, room and IT/AV

Tools – investment model
Recovery and development
Thank You! 😊