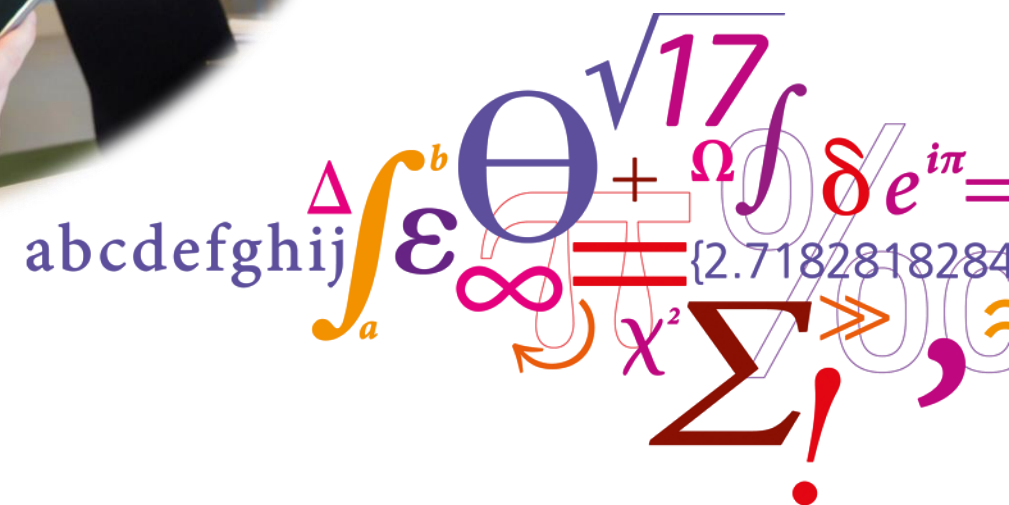




# SMART Library

An indoor living lab, part of DTU SMART campus



WHY ?



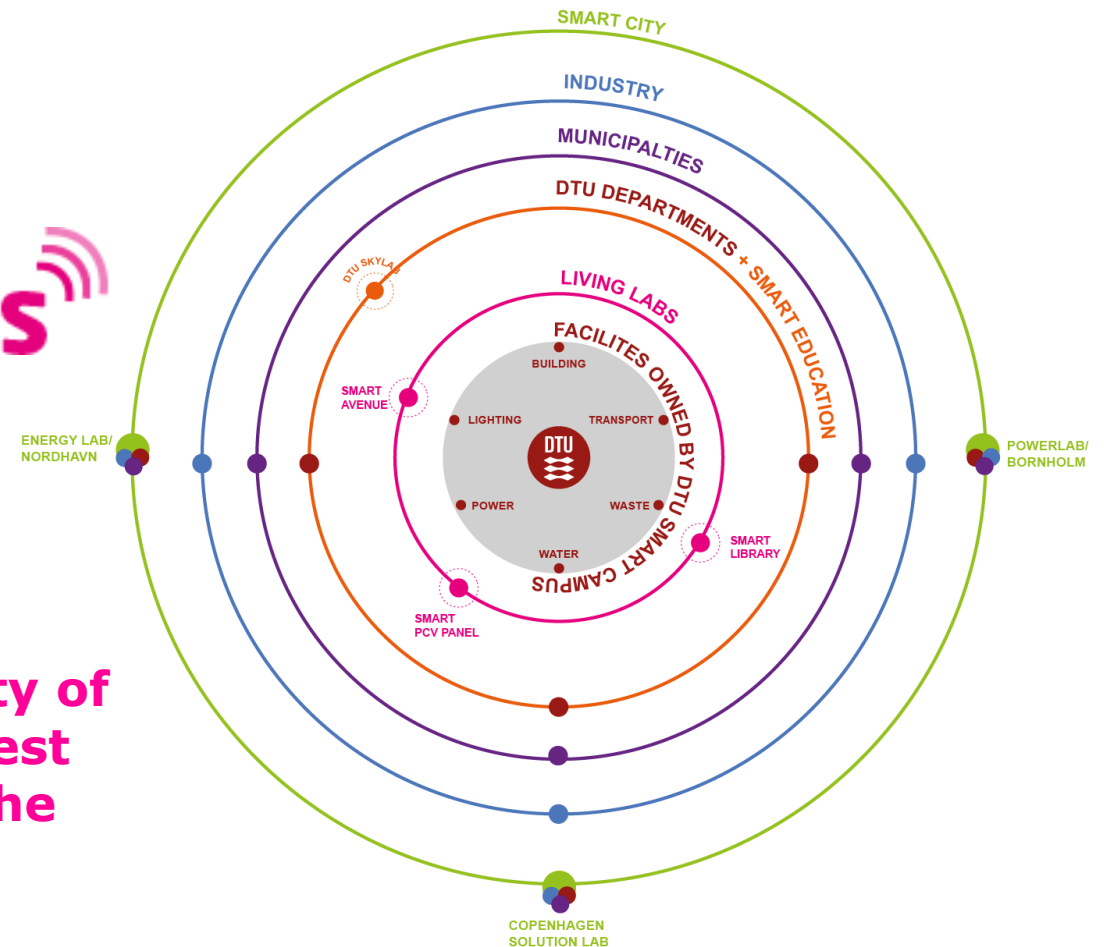
# CAMPUSES, RESEARCH AND TEST FACILITIES:



## SMART CAMPUS

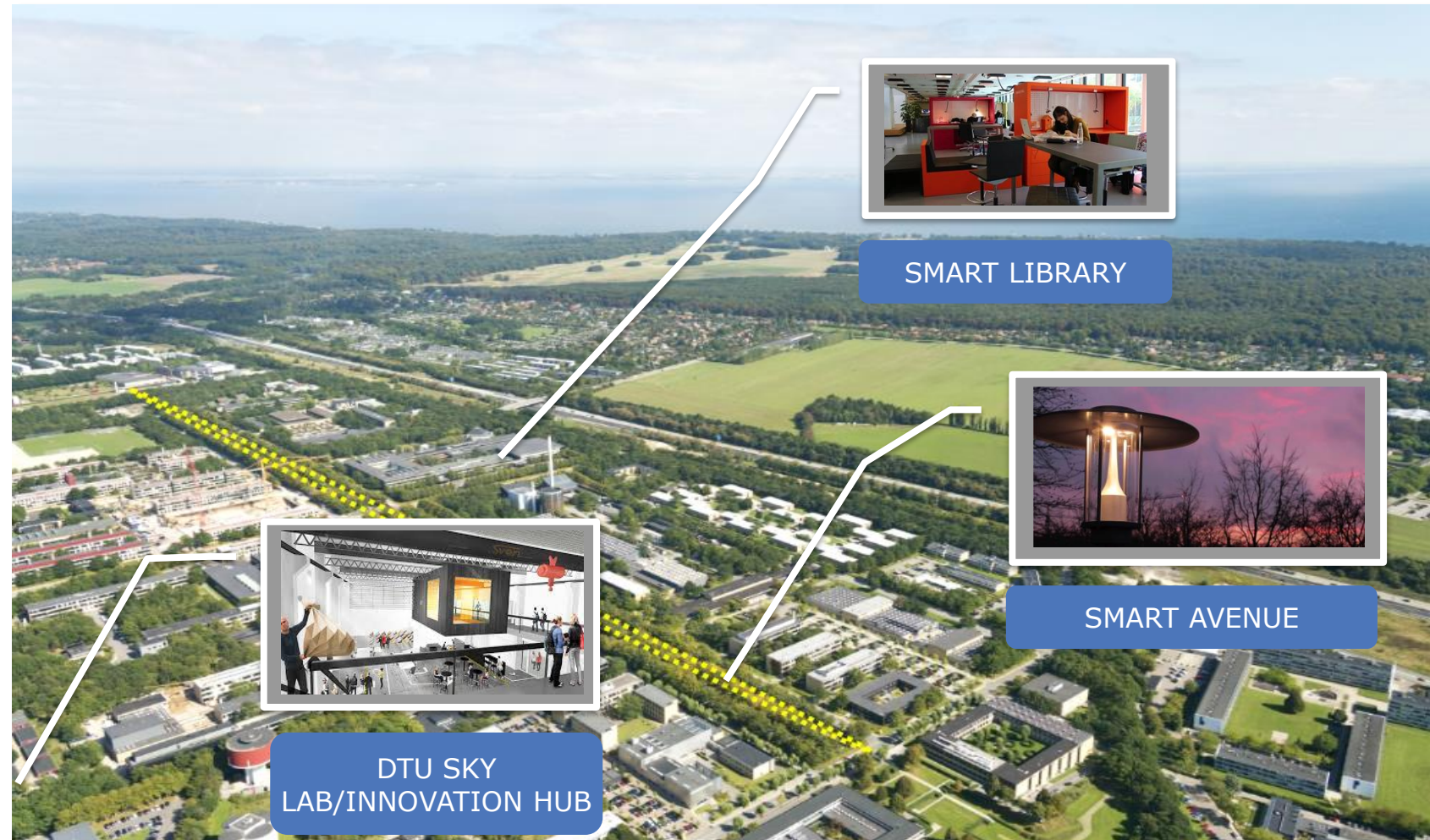
### What if....

### The Technical University of Denmark is the greatest Smart Living Lab in the world ?



# LIVING LAB ON SMART CAMPUS:

- Controlled experiments
- Consequences limited
- Test persons informed



## THINK BIG BUT START SMALL



# SMART

IOT – connecting everything

Fast growing industry - Revenue

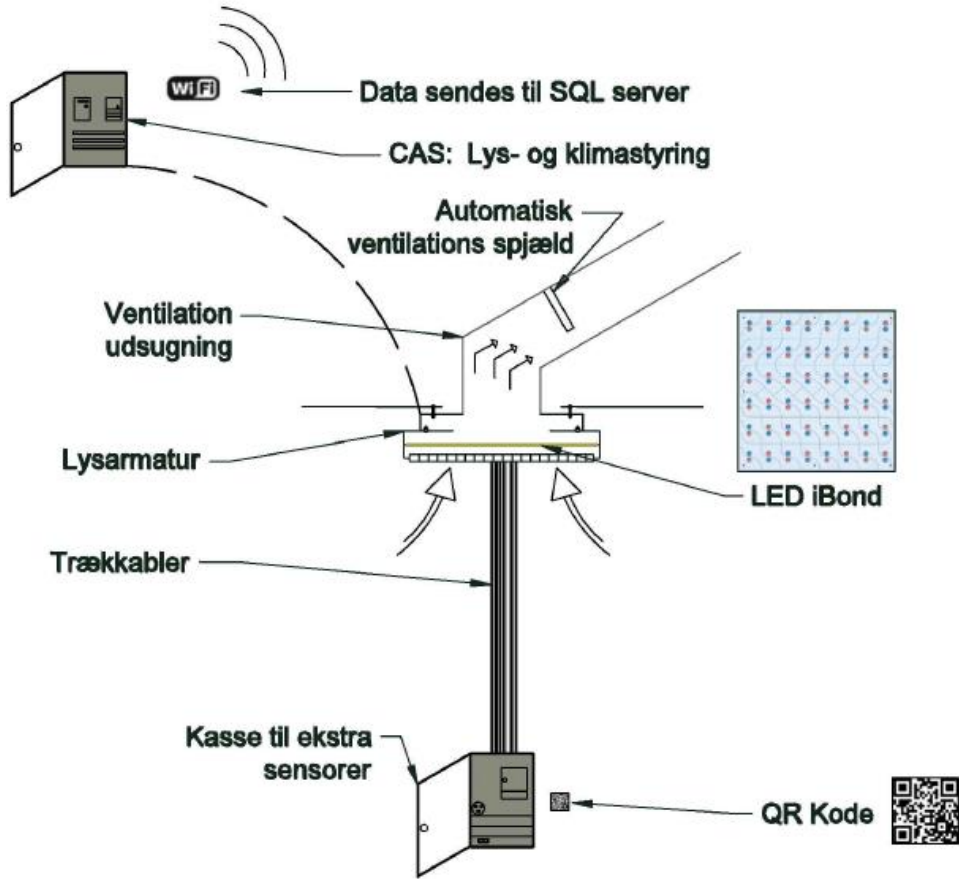




## Vision for SMART Library

The library space will be an indoor living lab, where students, researchers and entrepreneurs can develop, test and demonstrate SMART technologies, analyze the collected data and conduct research- and student projects, while optimizing the indoor climate, lighting and acoustics and therefore boosting the chances of learning.









**PERSONAL  
COMFORT**



**OPEN DATA  
REPOSITORY**



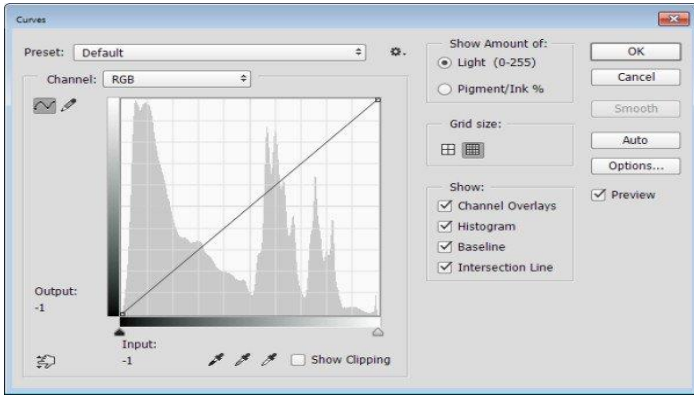
**TECHNOLOGICAL  
PLAYGROUND**



**ENVIRONMENTAL  
AND  
ECONOMIC  
SUSTAINABILITY**



# Learning process



Intelligent adjustment

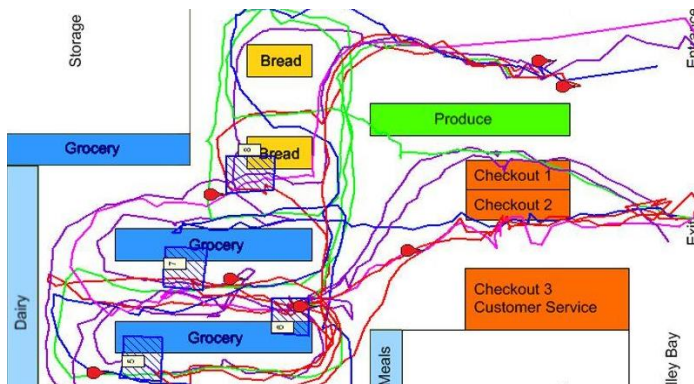
Living



Export of knowledge

Profiling

Data logging

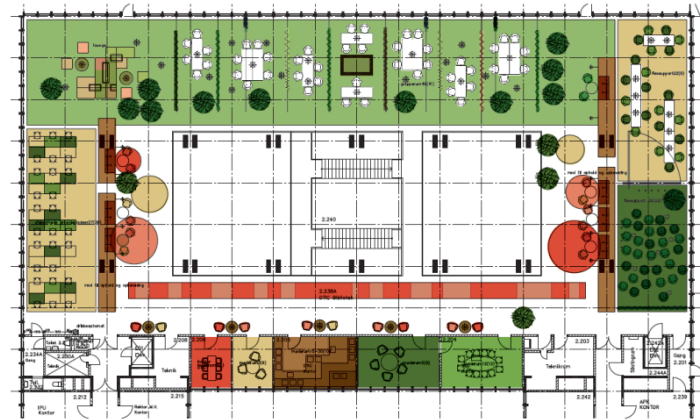
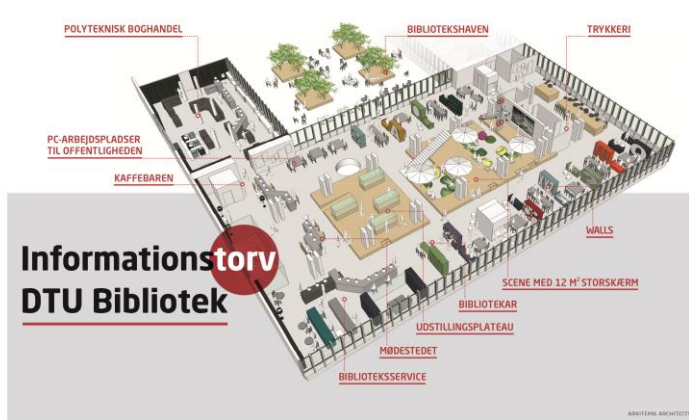
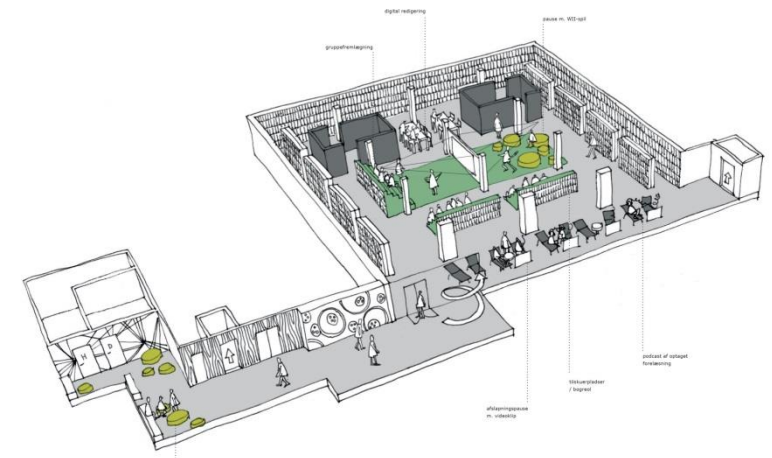


- Analyzing
- Students
  - Researchers
  - Industry
  - Library and Campus Service





# Comfortzones - learningzones



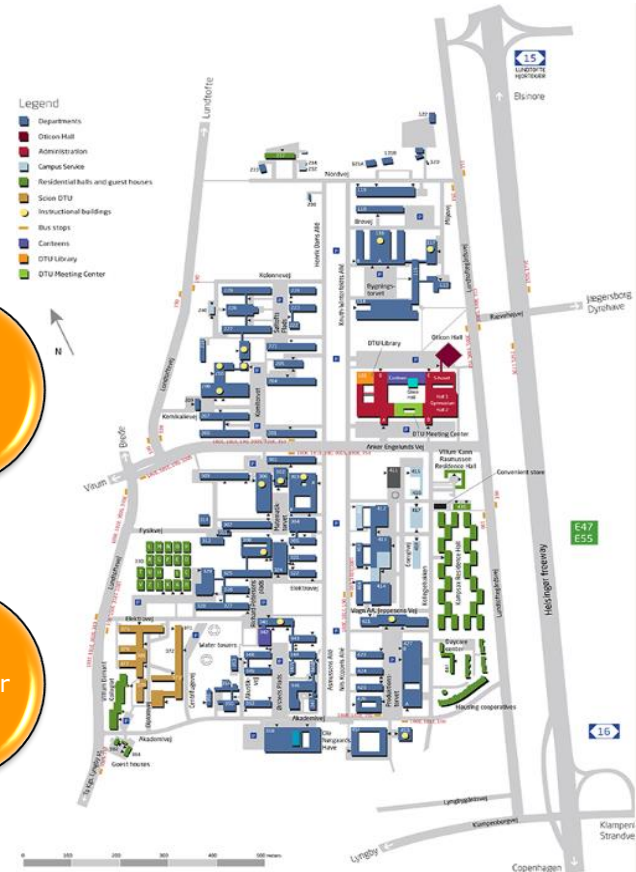
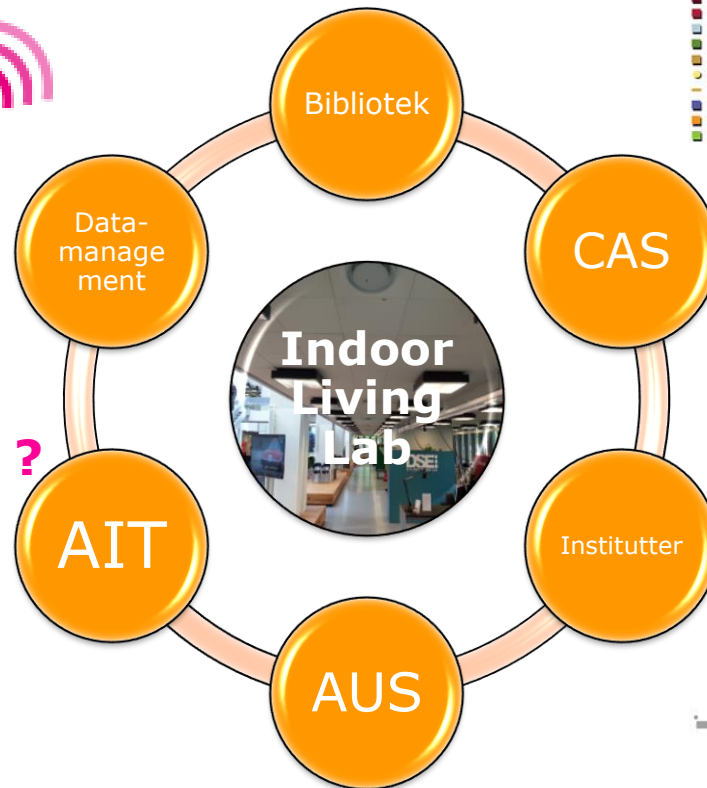


# Intra-institutional project

**SMART CAMPUS** 

**What if....**

**The Technical University of Denmark is the greatest Smart Living Lab in the world ?**





# Sensors

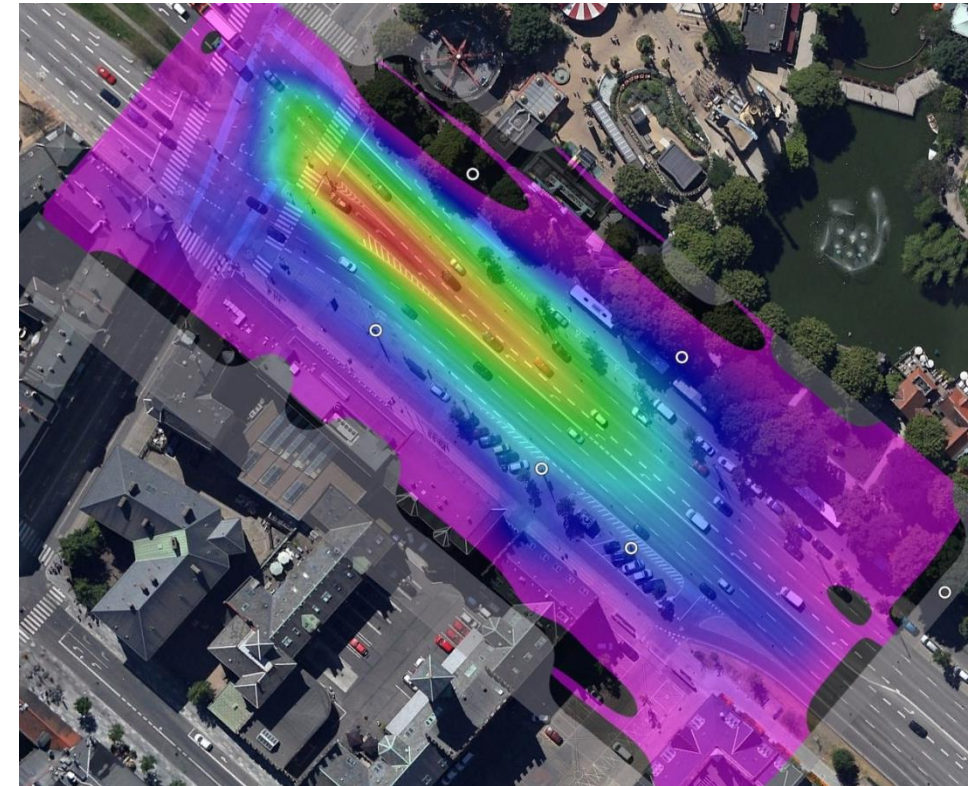
Movement, infrared, wi-fi, bluetooth

Acoustics, microphones, speakers.

Light measurements, brightness and color

Climate, temperature, humidity, CO<sub>2</sub>, particles, anemometer (air-speed), VOC (smell)

Bluetooth, Li-Fi, camera

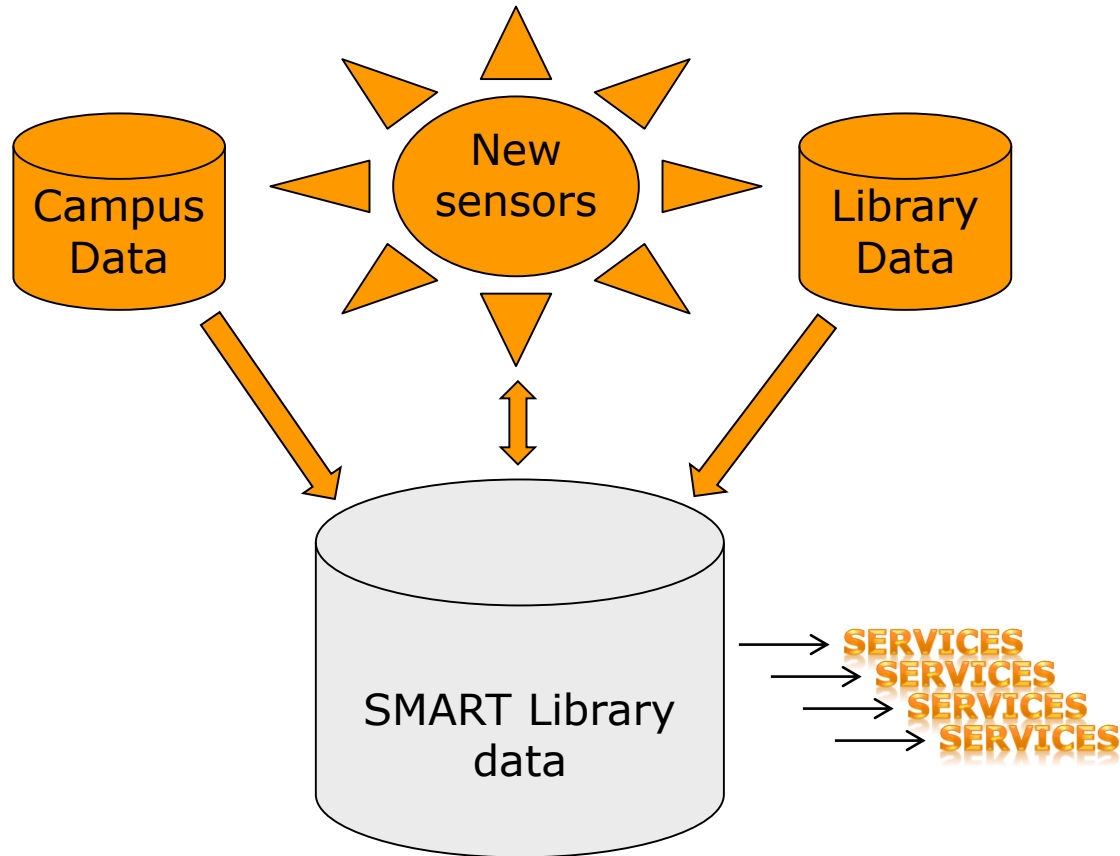




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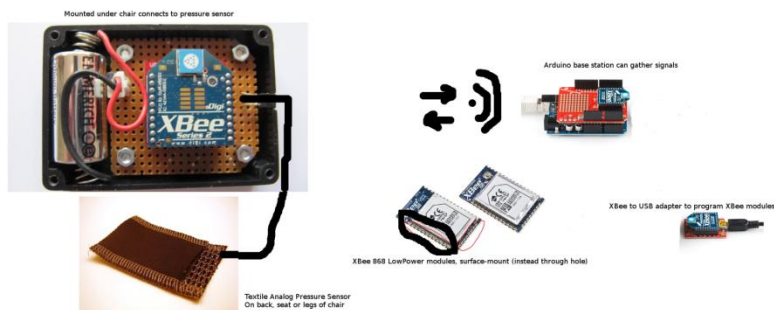
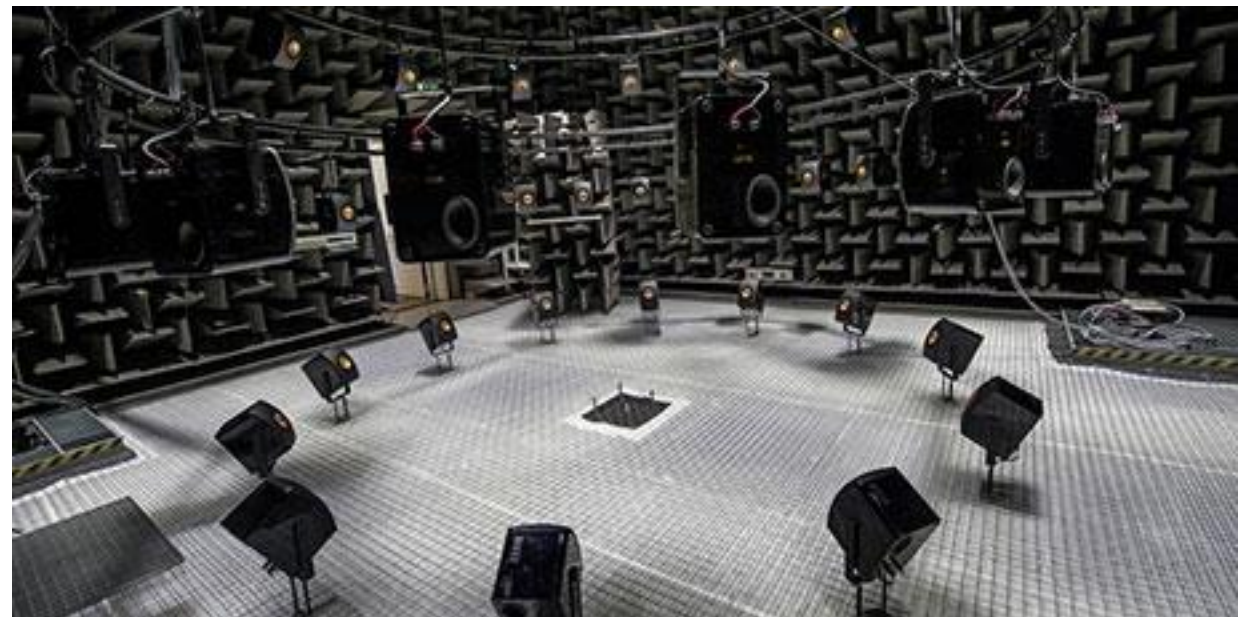


- BIG data ethics
- Data-visualization
- Library analytics
- Library impact
- DPO - data protection officers



# Projects in the name of SMART Library

- ✓ Acoustics
- ✓ Acoustics and white noise
- ✓ Dynamic light
- ✓ Seat occupancy
- ✓ Many more to come







# Are there others?

**Information**

**SmartLibrary**  
Startet 2016

**Kontakt**  
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M: 29208359

Lotte Duwe Nielsen  
Projektleder  
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## INVITATION

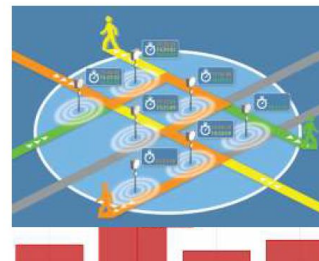
### Brugere i offentlige rum:

- Hvad sker der faktisk? • Hvordan kan vi få data om dem?
- Og hvordan omsætter vi det til bedre rum?

**Seminar 1. april 2016 kl. 10:30 - 15:30**

**Sted: Lille Sal, Dokk1, Hack Kampmans Plads 2, 8000 Aarhus C**

Hvordan får vi nye, valide data om hvad der sker i offentlige rum? Kan vi høste data fra sensorer, overvågningskameraer, mobiltelefoner og andre teknologier og supplere med andre målemetoder, som kan danne grundlag for optimering af service, rum og formidling?



### Manuals

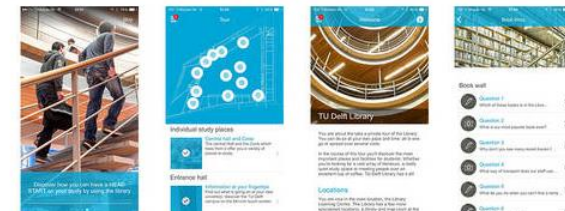
[Library Tour app](#)

[TU Delft Library](#) > [Visitor info](#) > [The building](#) > [Guided tour](#) > [Library Tour app](#)

## Library tour

The Library Tour app is developed for international students who are new at TU Delft. With this app, you can take an interactive, private tour of the Library in your own pace and time. In the course of this tour you will discover the most important places and facilities for students. Whether you're looking for a vast array of literature, a really quiet study space or meeting people over an excellent cup of coffee: TU Delft Library has it all!

When you approach a point of interest, a notification will pop up unlocking location specific content (using Apple's iBeacon technology). So...come on over and find out what we have to offer!





# Strategic potential

- Library impact, grades, retention
- Service assessment
- Data-science- employees, analytics, data management
- Closer collaboration with researchers
- Contributing to research and student-assignments
- Standard for excellent learning environment
- Network with industry and entrepreneurs
- Collaboration with other organisational units
- Innovation
- Inspiration



- ***A well-equipped learning commons says to a student, "Here you have tools, room to collaborate, equipment, advice, research options, and access to expert information. Now it is up to you to build something worthwhile: a paper, a presentation, an education."***

The Modern Learning Commons, 2011.



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# THANK YOU

for your attention

[www.smartlibrary.dtu.dk](http://www.smartlibrary.dtu.dk)

THINK BIG

BUT START SMALL 

