

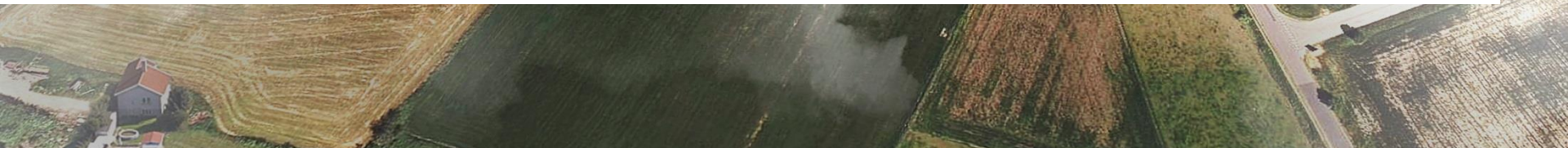


# **Dobbelt digitalisering – i sundhed og byggeriet**

Henrik Schødts, Projektdirektør, Nyt Hospital Nordsjælland

Build 4.0, 31. maj 2018

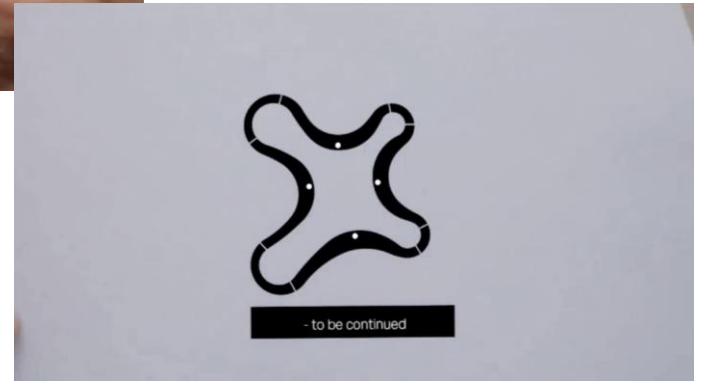
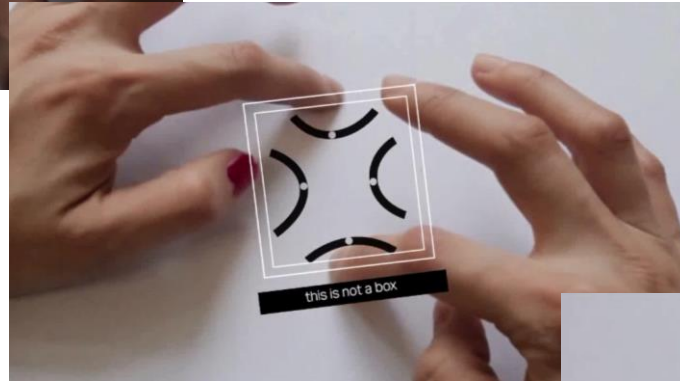
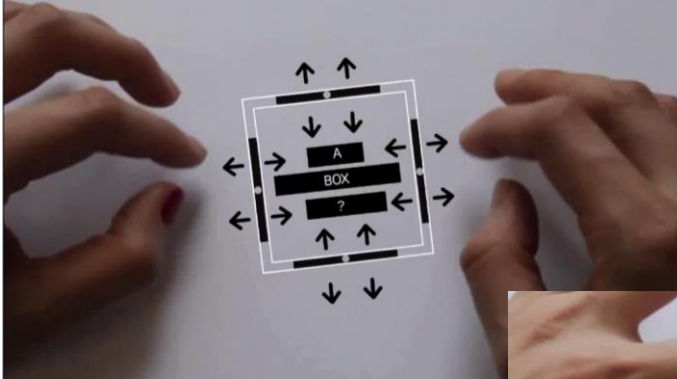
(PDF version)





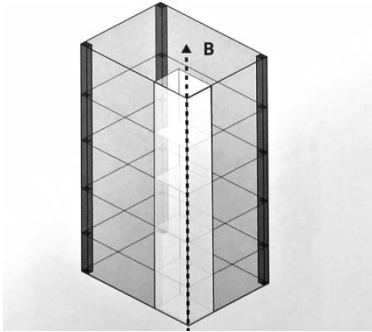
[Video]



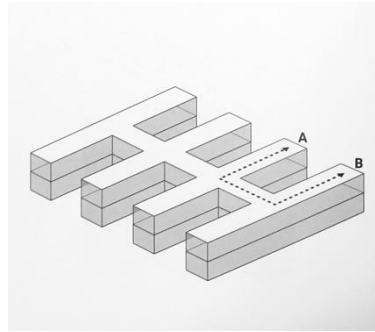


# En ny typologi?

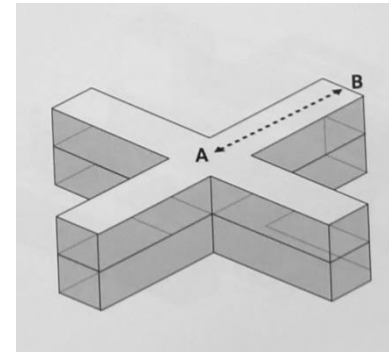
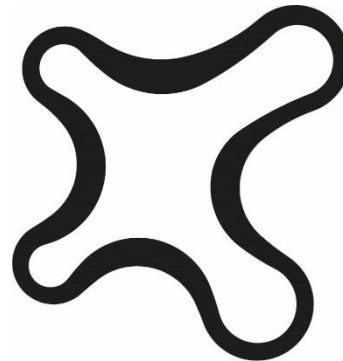
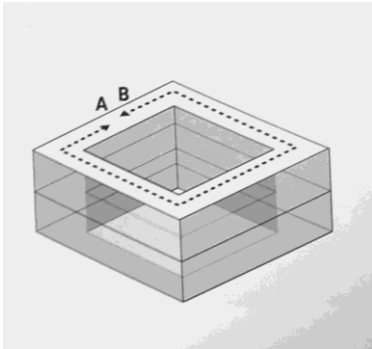
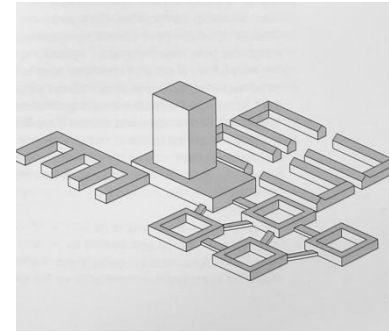
Tårnet



Rygrad



Sammensat



Karre

Karre + Kerne

Kerne





# En ny typologi?

KØGE



ODENSE



GØDSTRUP



SKEJBY




AALBORG



HILLERØD



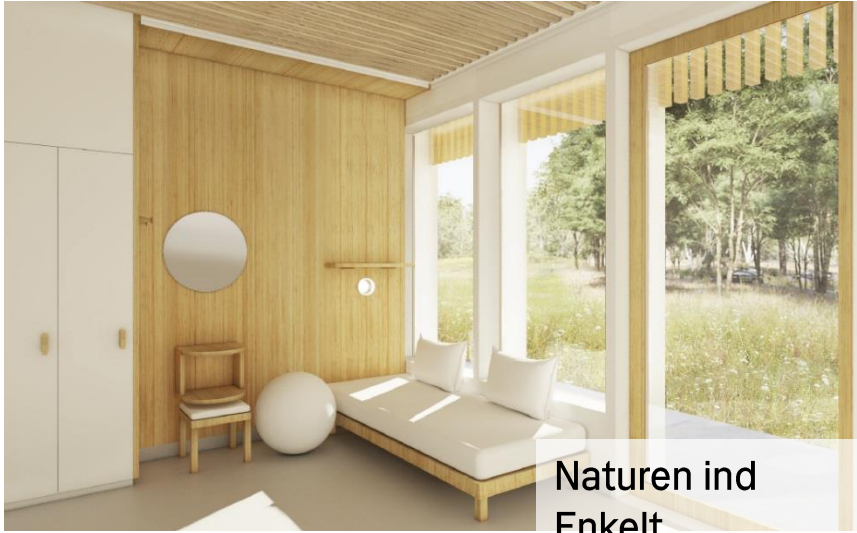


An aerial photograph of a large, modern hospital building with a unique, circular, and somewhat irregular design. The building features a white facade and a green roof with solar panels. The interior courtyards are landscaped with greenery and paths. The building is surrounded by a lush green landscape with trees and a winding path. The text is overlaid on the bottom left of the image.

**Skal betjene 320.000 borgere**  
**500.000 ambulante besøg om året**  
**Budget: 4,5 mia. kr. + energilån**  
**115.800 m<sup>2</sup>**  
**570 enkeltsengsstuer**







Naturen ind  
Enkelt  
Træ





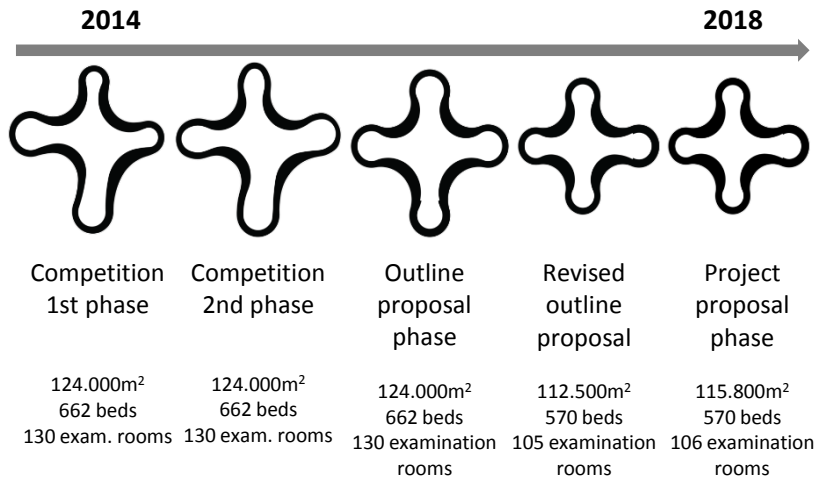


**Vores ønsker og krav til byggeriet  
og vores partnere er også anderledes.**





# Her står vi



## 2018 highlights

- Launch tender for main contractor
- Negotiations
- Cooperate with main contractor on work packages



# Megaprojekternes jernlov lever

*“Over budget, over time, under benefits, over and over again”*

|                              | Roads   | Bridges/<br>Tunnels | Energy  | Rail    | Dams    | IT-led<br>Change | Olympics |
|------------------------------|---------|---------------------|---------|---------|---------|------------------|----------|
| Cost overrun                 | 25%     | 32%                 | 36%     | 42%     | 90%     | 107%             | 156%     |
| Frequency of<br>cost overrun | 8 of 10 | 7 of 10             | 6 of 10 | 8 of 10 | 7 of 10 | 5 of 10          | 10 of 10 |
| Schedule<br>overrun          | 39%     | 22%                 | 38%     | 42%     | 44%     | 39%              | 0%       |
| Benefits<br>shortfall        | 7%      | -7%                 | n/a     | -51%    | -11%    | -24%             | n/a      |
| Cost<br>Black Swans          | 8%      | 11%                 | 7%      | 5%      | 10%     | 18%              | 5%       |
| duration (years)             | 5.6     | 8.0                 | 5.3     | 8.2     | 8.2     | 3.3              | 7.0      |

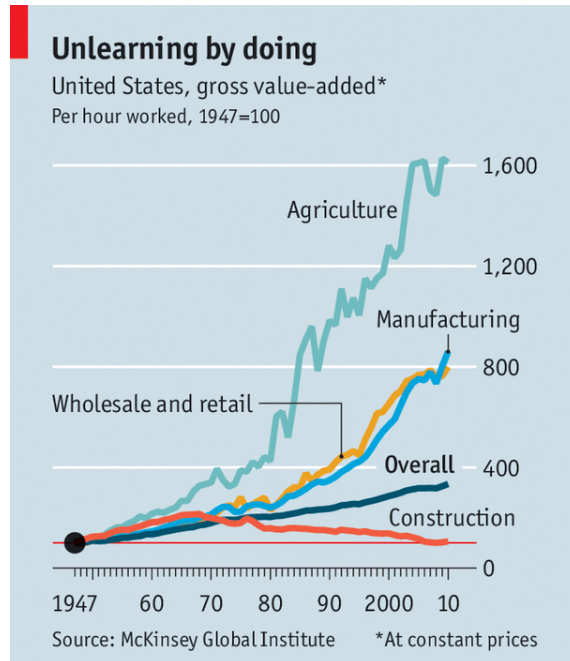
Sources: Ansar et al. (2014; 2016), Budzier & Flyvbjerg (2013), Flyvbjerg (2015), Flyvbjerg et al. (2016), Pohler (2013)

Database as of July 2016





# Produktivitet og digitalisering er spektakulært lav i byggeriet



Economist.com

Petabytes of Stored Data, 2009



“

**Looking at construction projects today, I do not see much difference in the execution of the work in comparison to 50 years ago.**

”

John M. Beck, Executive Chairman, Aecon Group, Canada





“

Looking at construction projects today, I do not see much difference in the execution of the work in comparison to 50 years ago.

”

John M. Beck, Executive Chairman, Aecon Group, Canada



**2001**

iPod  
Digital music players



**2003**

iTunes store  
Online music



**2007**

iPhone  
Smartphones



**2010**

iPad  
Tablets

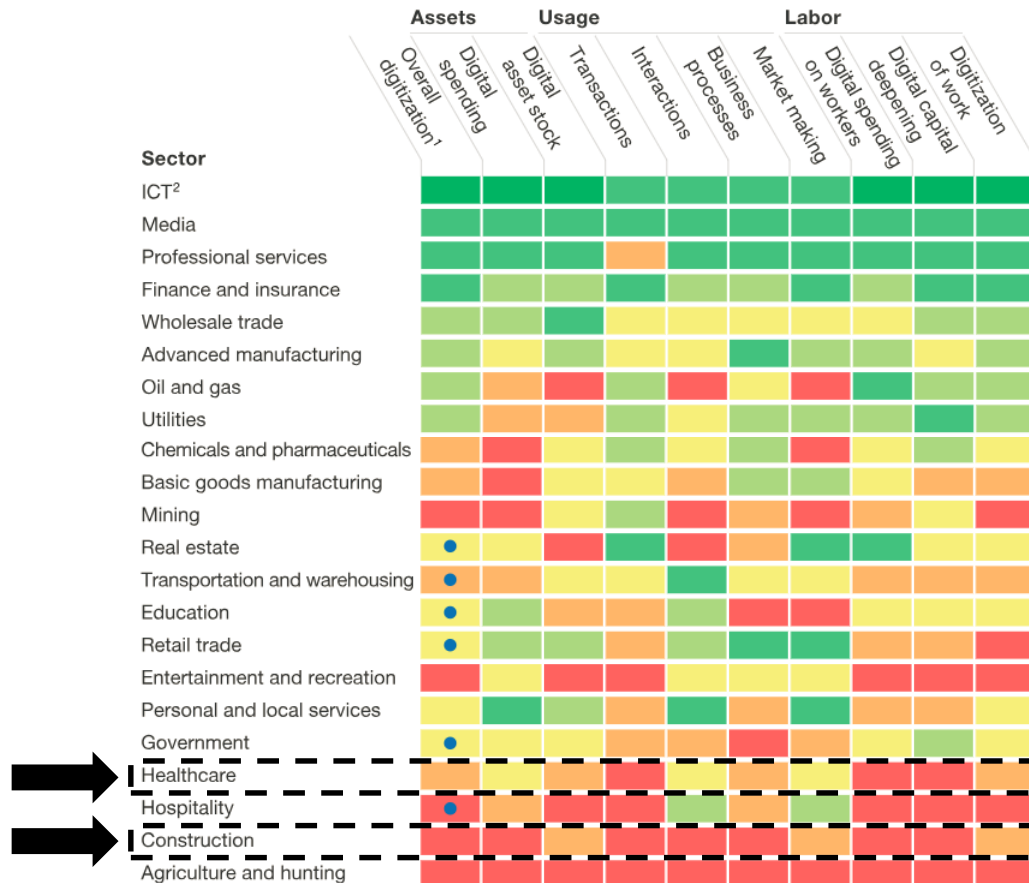


# Lighederne med sundhedssektoren er slående

McKinsey Global Institute industry digitization index; 2015 or latest available data

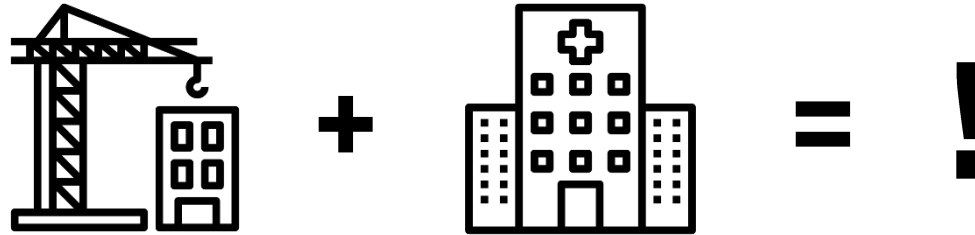
Relatively low digitization  Relatively high digitization

● Digital leaders within relatively undigitized sectors





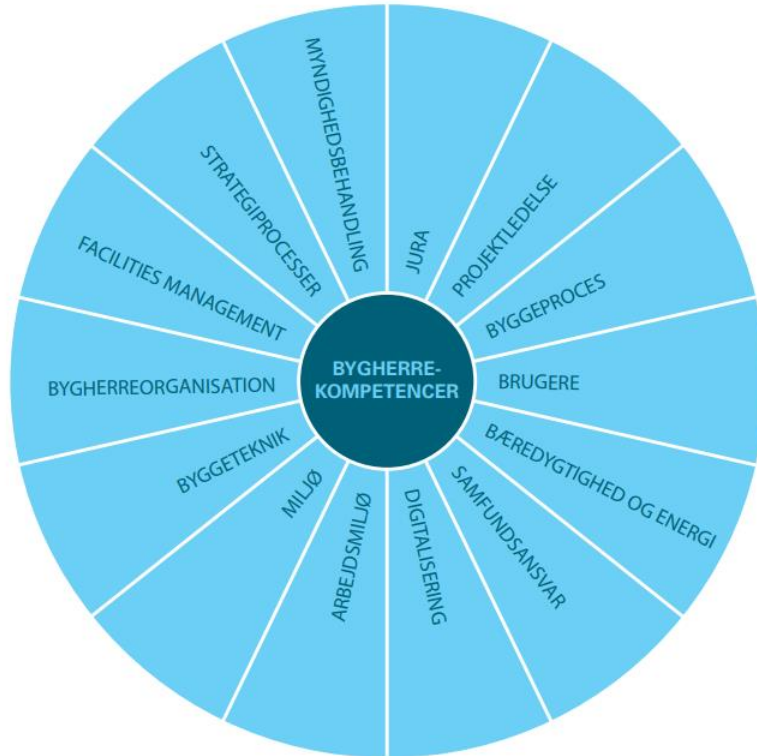
## Og lighederne rækker langt ud over digitalisering



1. Lack of innovation and delayed adoption
2. Informal processes or insufficient rigour and consistency in process execution
3. Insufficient knowledge transfer from project to project
4. Weak project monitoring
5. Little cross-functional cooperation
6. Little collaboration with suppliers
7. Conservative company culture
8. Shortage of young talent and people development



# Vores rolle som bygherre



## Bygherrens opgaver<sup>24</sup>

- Identificere behovet
- Etablere datagrundlag for business case
- Udvikle og beskrive projektet og dets målsætninger
- Etablere realistiske projektbudgetter og tidsplaner
- Vurdere og forstå risiko, og identificere, hvem der kan håndtere dem
- Tilrettelægge udbuddet
- Håndtere relationer og kontrakter
- Forstå ansvarlighed, etisk adfærd og retfærdighed og opstille spilleregler for dette i projektet fra start til slut
- Beherske projektledelsesværktøjer
- Overvåge leverandører og leverancer





## **Vores byggeri skal helbrede og behandle, inspirere og involvere hele samfundet**

Hvad gør vi så?

- Faseopdelt udbud; åbent samarbejde; tæt dialog med markedet
- Projekt- og udbudsmateriale lægger op til omfattende brug af digitale redskaber
- Vi arbejder med nogle af de bedste i DK og verden inden for planlægning, risikostyring, BIM, VR
- Organisationen er anderledes – andre kompetencer og profiler
- Etablerer Living Lab – bruger virkeligheden som testarena



# BUILD 4.0

**- er vi klar?**





**Betragt os som "live case"!  
Vi er på jagt efter samarbejder der  
kan styrke hele byggesektoren.**

**[henrik.schoedts@regionh.dk](mailto:henrik.schoedts@regionh.dk)**

