Information Technology in the Future Construction Industry

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Building Informatics

The 'Building Informatics' research group was established in is a December 1997 at the Department of Building Technology and Structural Engineering at Aalborg University.

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http://it.civil.aau.dk/

Research Profile

Research areas

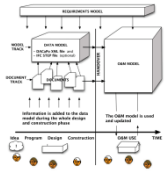
- Building product ad process modeling
- Knowledge representations and model integration
- Knowledge management, learning support
- Multimedia/VR interfaces to Internet based resources
- User environment design
- User driven innovation, user needs and requirements capture
- Computer supported collaborative work
- Intelligent buildings and digital infrastructures
- Incremental system design

Research and demonstrator development is most often carried through in close collaboration with industry

See also VBN1 (2005-2008), VBN2 (2008-)

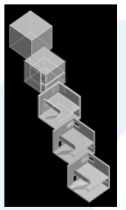
Project examples

Distributed Virtual Workspace for enhancing Communication within the Construction Industry - DIVERCITY



Det Digitale Byggeri. Byggherrekrav - Digital aflevering - DACaPo

Det Digitale Byggeri. Byggherrekrav - 3D modeller - B3D

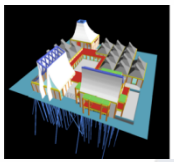


IT in Collaborative Building Design (PhD)

IT på byggepladsen/IT at the Building Site

Brugerinvolvering i byggeprocessen/Virtual Innovation in construciton - VIC

Virtual Models Linked with Physical Components in Construction (PhD)



Education areas

User Environment (UE) design

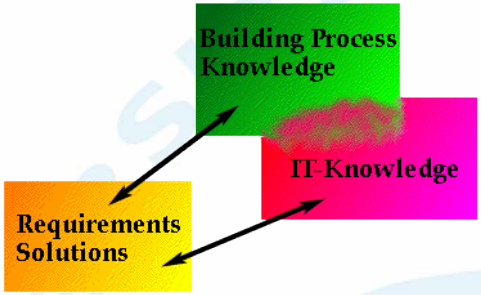
User needs capture
Requirements specs
Contextual design
Usability/evaluation

Knowledge Management (KM)

Intranet/extranet specifications
ICT and change strategy
Knowledge and experiences discovery, capture, storage and transfer
Information QA

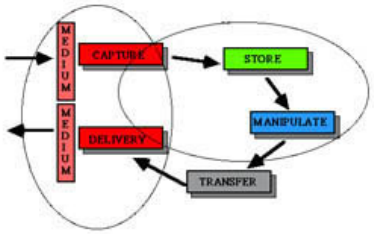
Intelligent Buildings (IB)

IB design
Services and systems
Networks
Facility management
Intelligent city



Computer Supported Collaborative Working (CSCW)

Virtual workspaces
Sync/async communication
Distributed collaboration
Storytelling



Building simulations

Building systems simulations
Building systems integration

Virtual Buildings (VB)

CAD
Product and process models and modelling
Classification
Conceptual modelling
3D geometric modelling

Human Computer Interaction/ Multimedia (HCI/MM)

HCI design
Multimodal interfaces
MM formats
Computer graphics
Virtual Reality

Knowledge Representations (KR)

Relational databases
Object Oriented
Logic
HyperText
XML
Semantic Web

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Education

CandScientTechBI (Building Informatics) [education]

Building Management (BL, BLCandScientTech) courses (1999-)
- Virtual Buildings. Knowledge Representations and Semantic Web [sem7]
- Design of user environments and user support systems [sem8]

Civil Engineering (courses)
- IT in the Building Process (1998-2007) [sem6]
- Digital product models and process models in construction) (2007-) [sem4]
- Computer Based Drawing and Modelling (2004-) [basis]

Master of Industrial IT (education, 2000-2006)

Courses at A&D (2000-2001)

De Digitale Dage 21 - 23 april 2010

See all at **http://it.civil.aau.dk/it/education/**

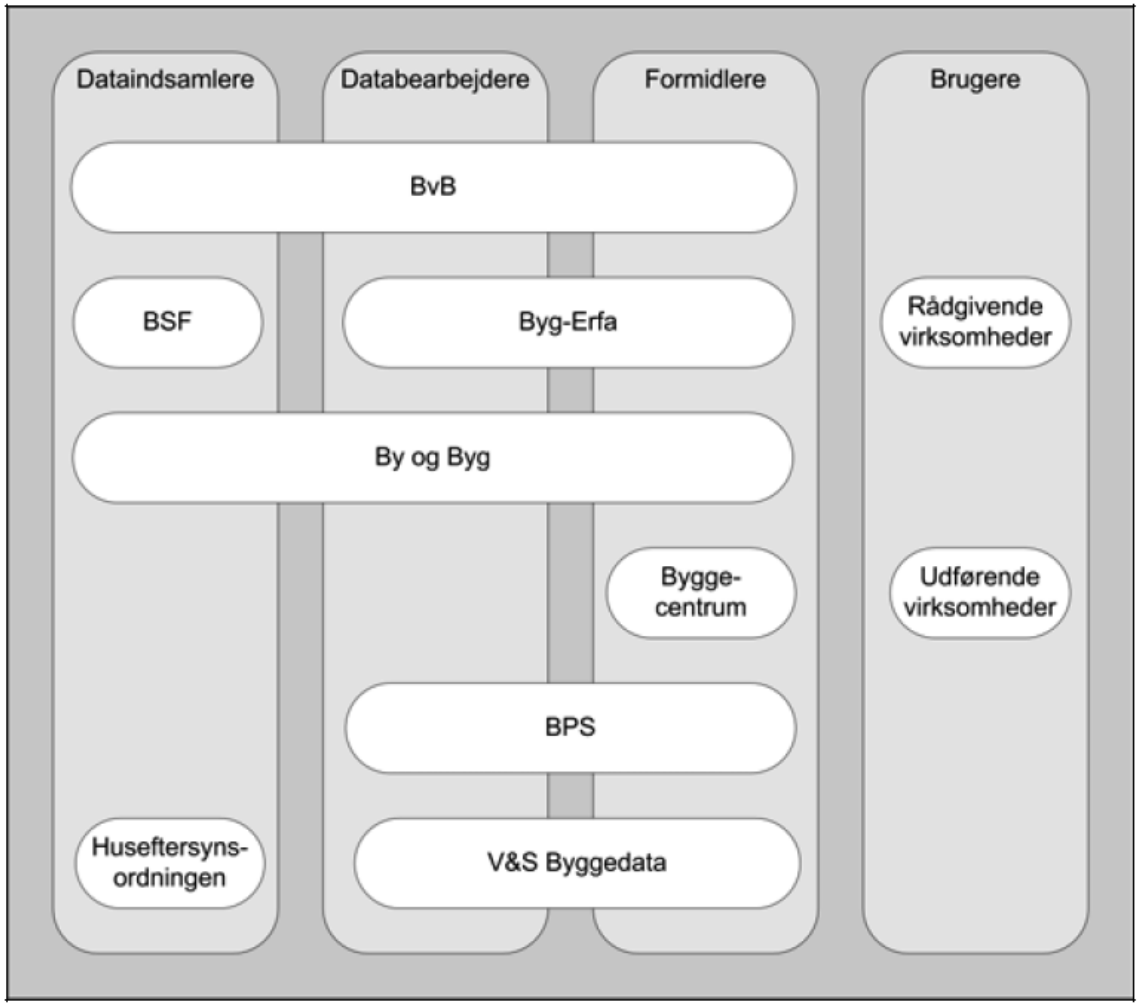
Recent student projects

- **Videnledelse i byggebranchen** (Knowledge management in the construction industry)
- **Anvendelse af den digitale bygningsmodel** (Using the digital building model)
- **Fremtidens Informationshåndtering på byggepladsen** (Future information handling at the construction site)
- **Integreret Projektering og Informationsudveksling - anvendelse af 3D bygningsmodeller** (Integrated design and information exchange – use of 3D building models)
- **Udnyttelse af 3D-scanning til kvalitetssikring i byggeriet** (3D scanning for quality assurance in construction)
- **Effektivisering af bygningsdrift og -vedligehold gennem øget anvendelse af informations- og kommunikationsteknologi** (Efficient operation and maintenance by increased use of information and communication technology)

Knowledge management in the construction industry (1)

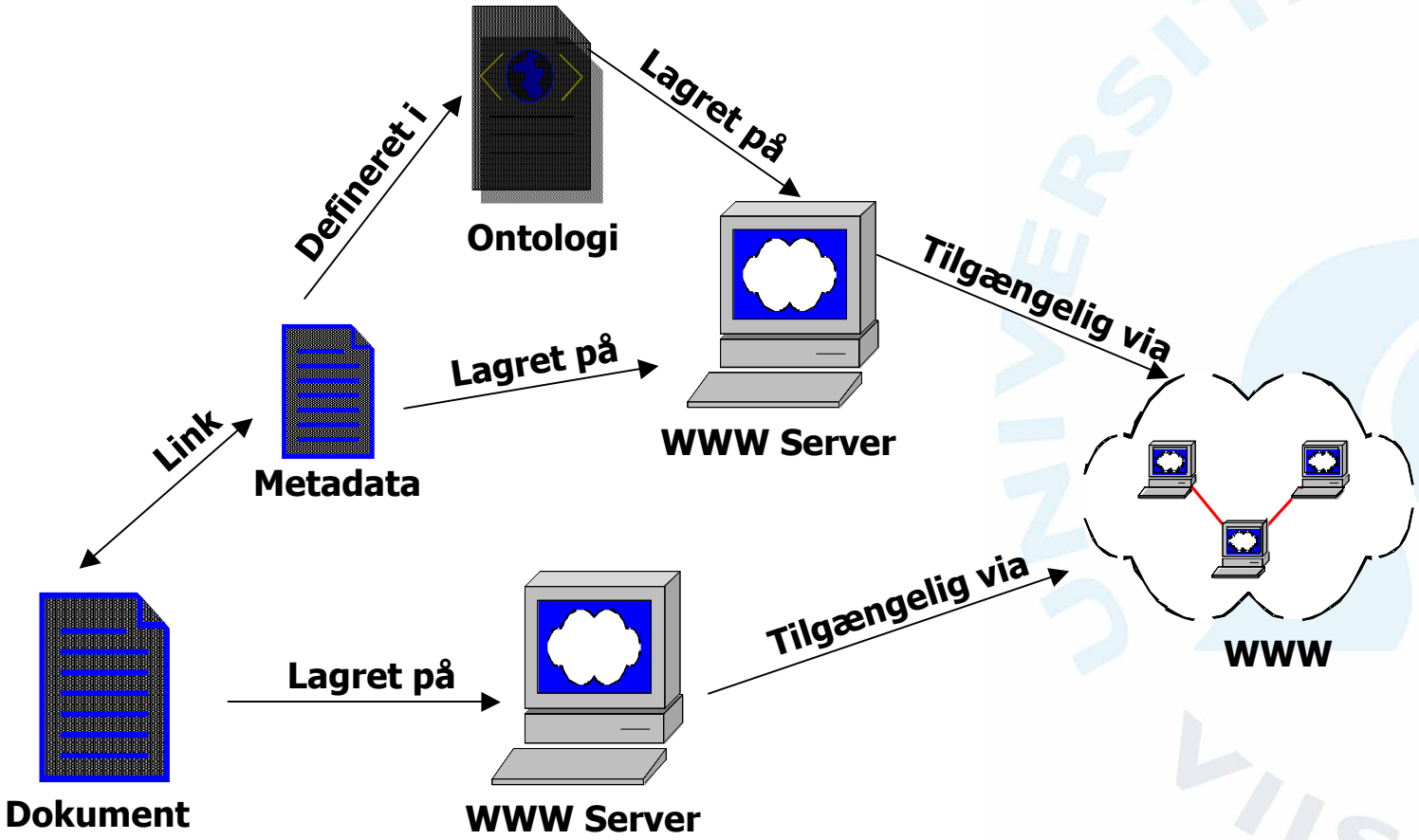
Public sources of knowledge

Roles and kernel competences



Knowledge management in the construction industry (2)

The semantic web



Future information handling at the construction site (1)

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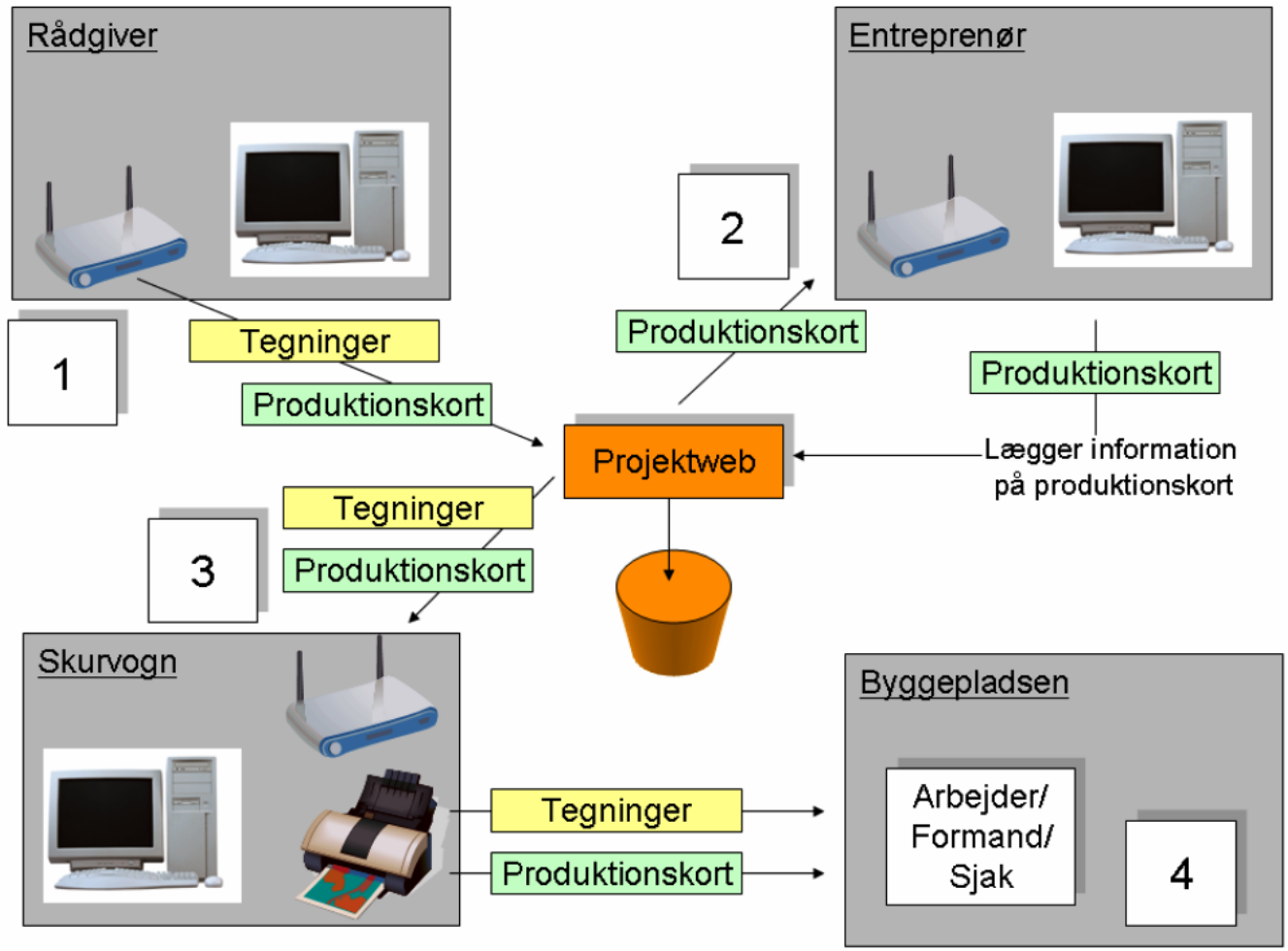

Future information handling at the construction site (2)

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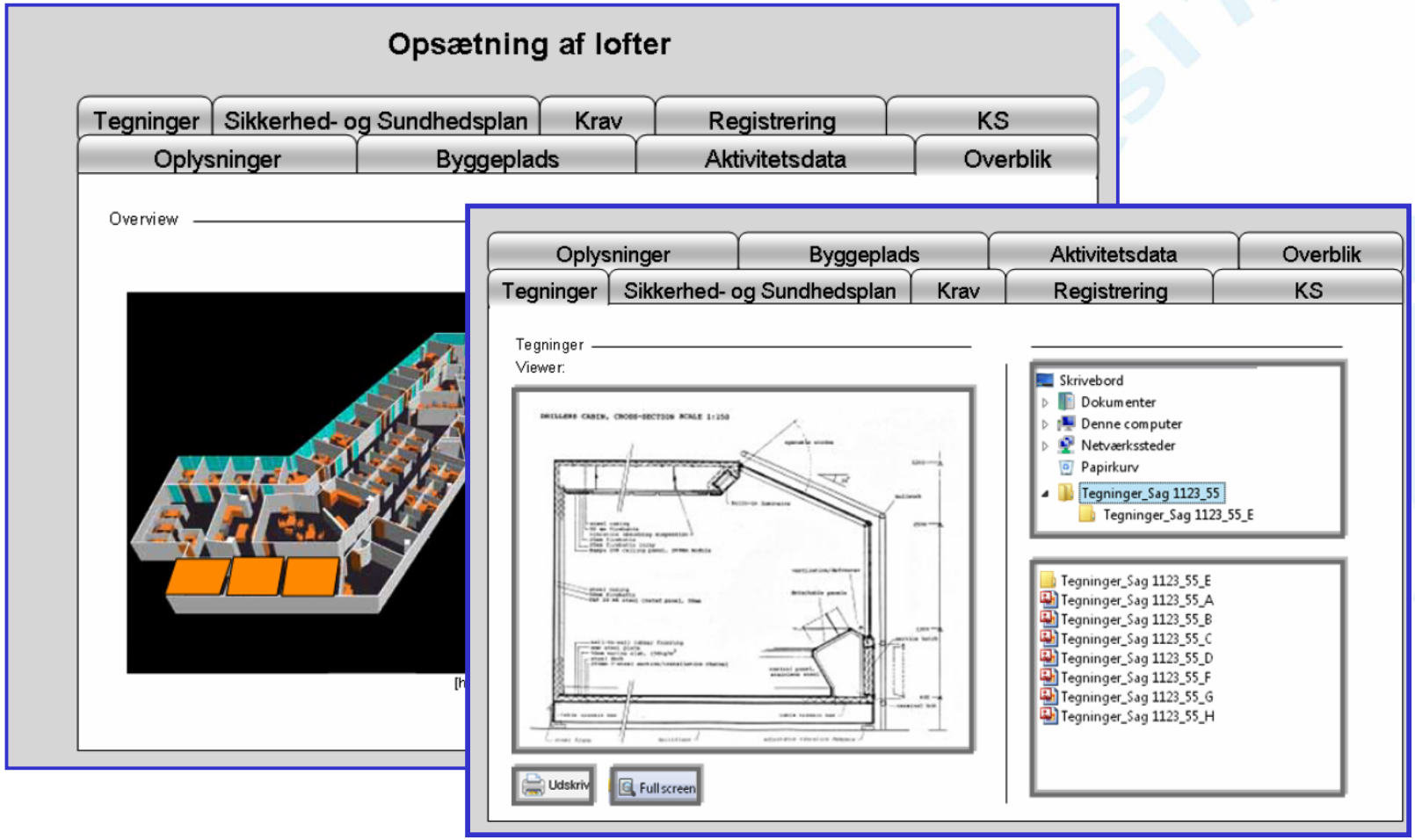
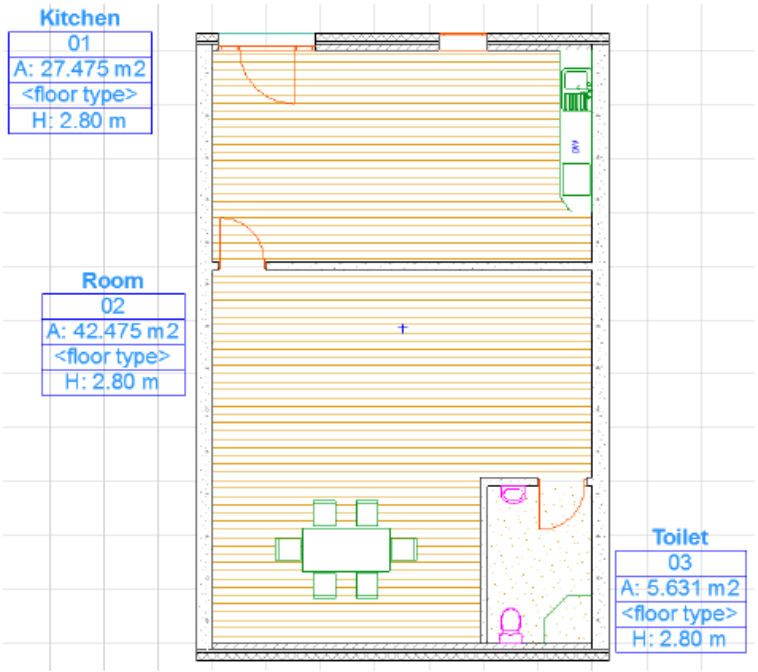
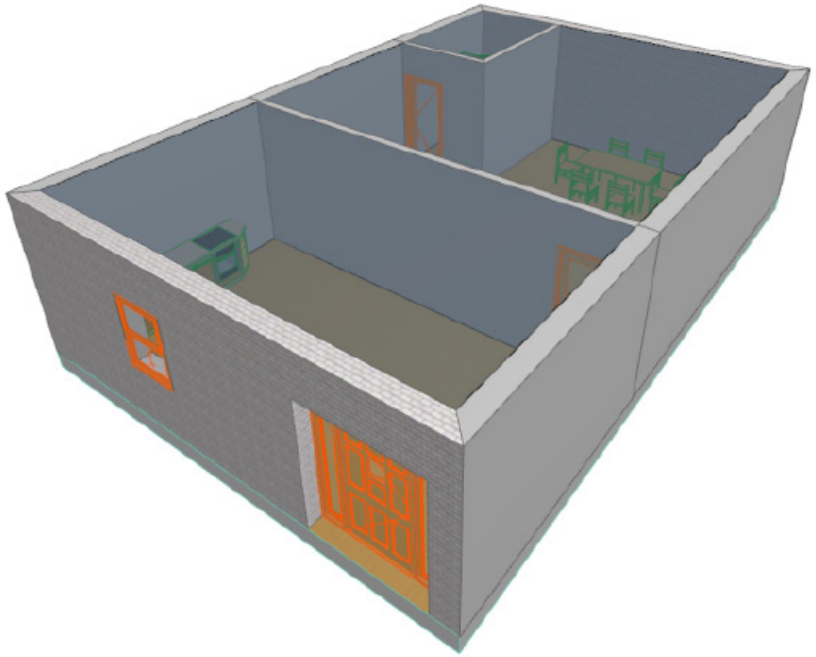
Prototype 'process card' application for craftsmen at the construction site



Computer aided Facility Management (1)

A review of Computer Aided Facility Management systems





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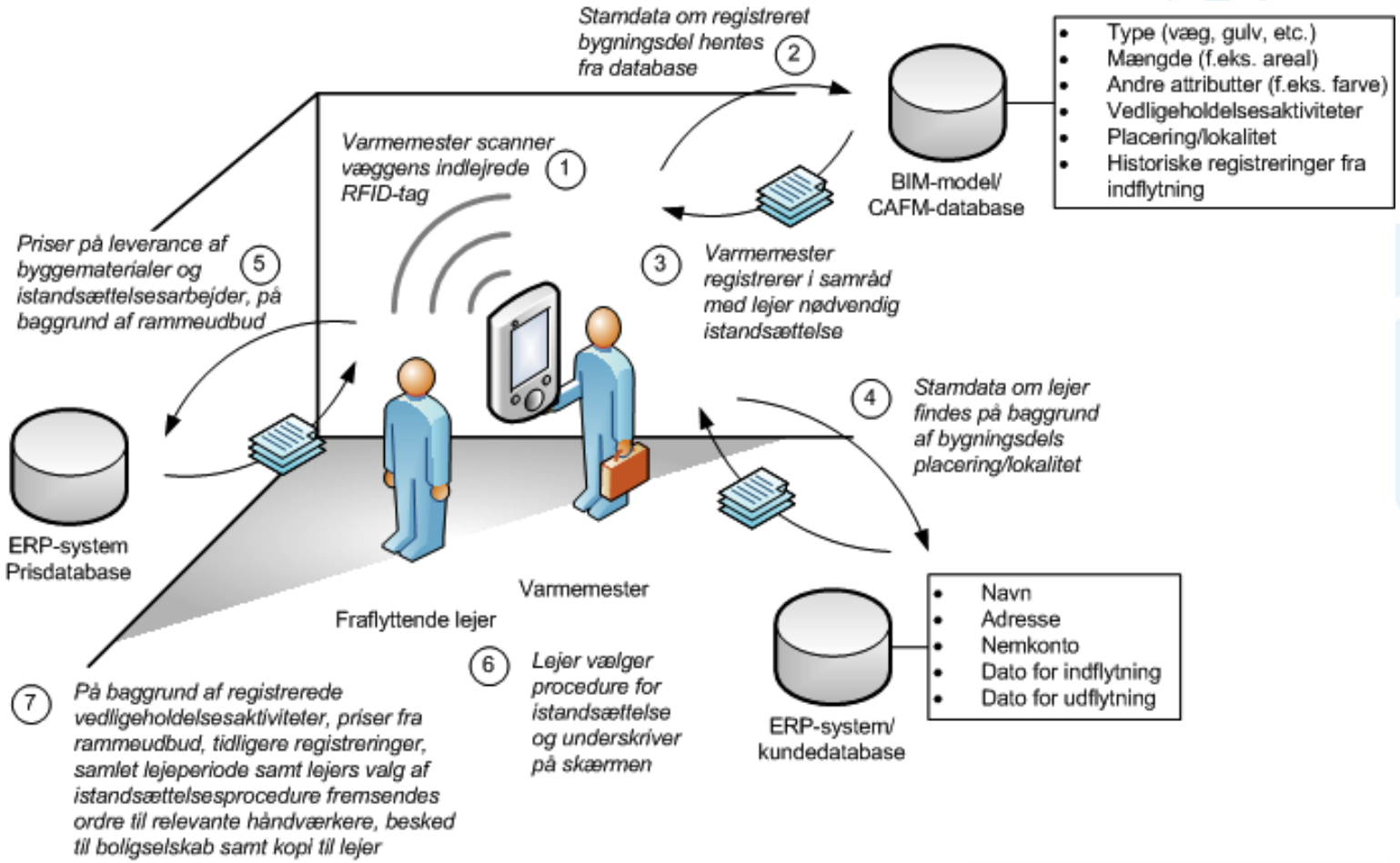
Computer aided Facility Management (2)

Requirements for a mobile application



Computer aided Facility Management (3)

Development of af prototype mobile application

3D laser scanning for quality assurance (1)

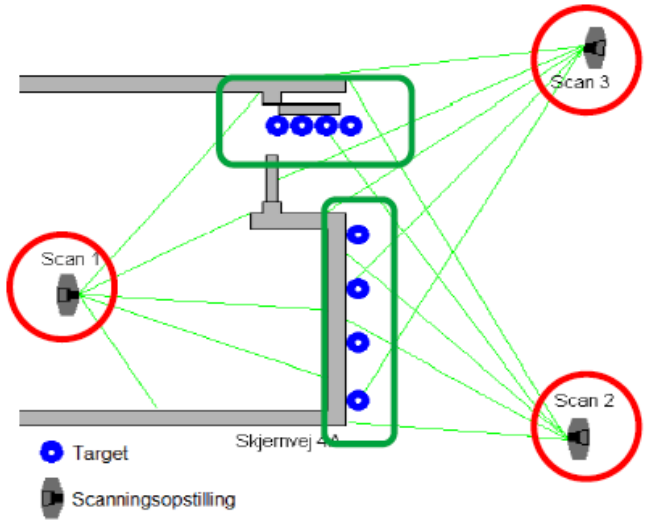
Scanningsplan: Skjernvej 4A

Dato: 21. april 2009

Scanningsobjekt: Østlige gavl inder og yderside

Antal scanninger: 3 scanninger, 1 indenfor og 2 udenfor

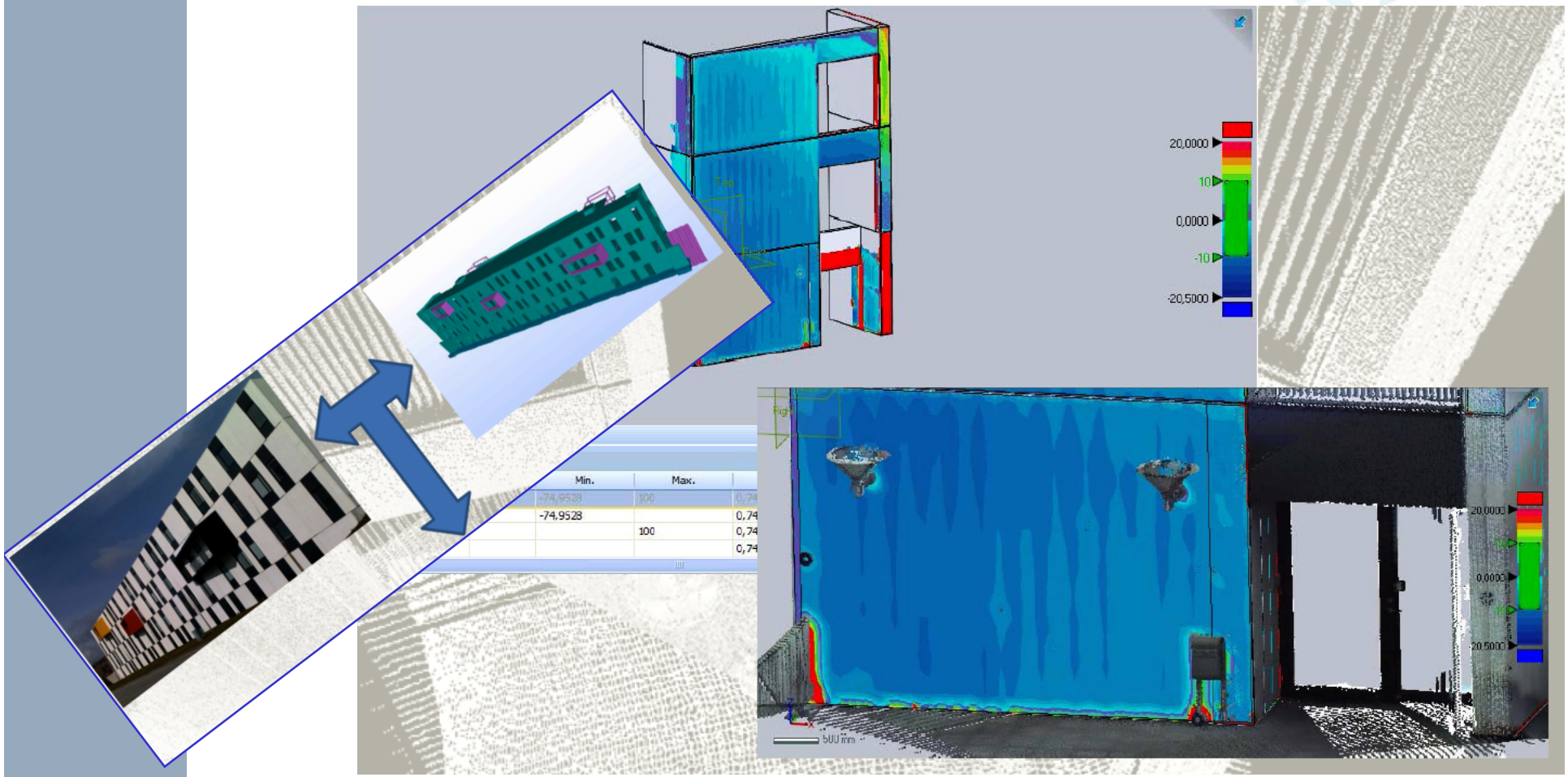
Scanningsopstilling:



Scanning	Afstand til objekt [m]	Opløsning [mm]	Opløsningsvinkel [°]	Antal targets
1	5	10	0,100	4
2	10	10	0,045	8
3	15	10	0,035	4

3D laser scanning for quality assurance (2)

Compare scanning result with 3D model of planned building



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