DEMO CONSULTANTS

Applied research on BIM



Guest lecture at TU Delft (AR2R016)

Date: 27 May 2015

Presenter: Dr. Rizal Sebastian (Director of Research)

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CONTENT

- Introduction
- Proposition
- Applied research in NL and EU collaborative projects
- Discussions



INTRODUCTION

DEMO PROFESSIONALS

KEY TO PERFORMANCE

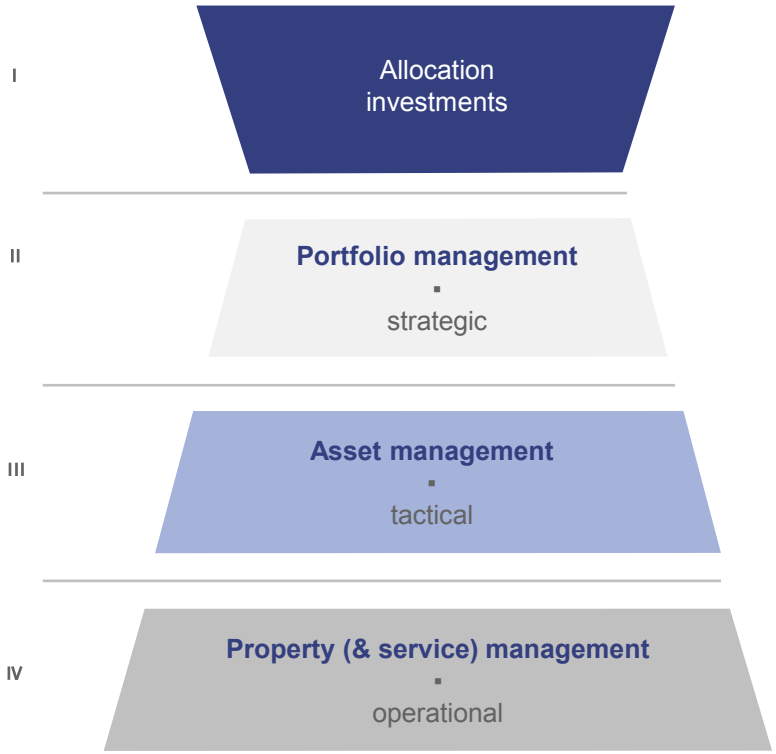
To optimize social, public and economic benefits by collecting, structuring, analyzing and disclosing real estate information.

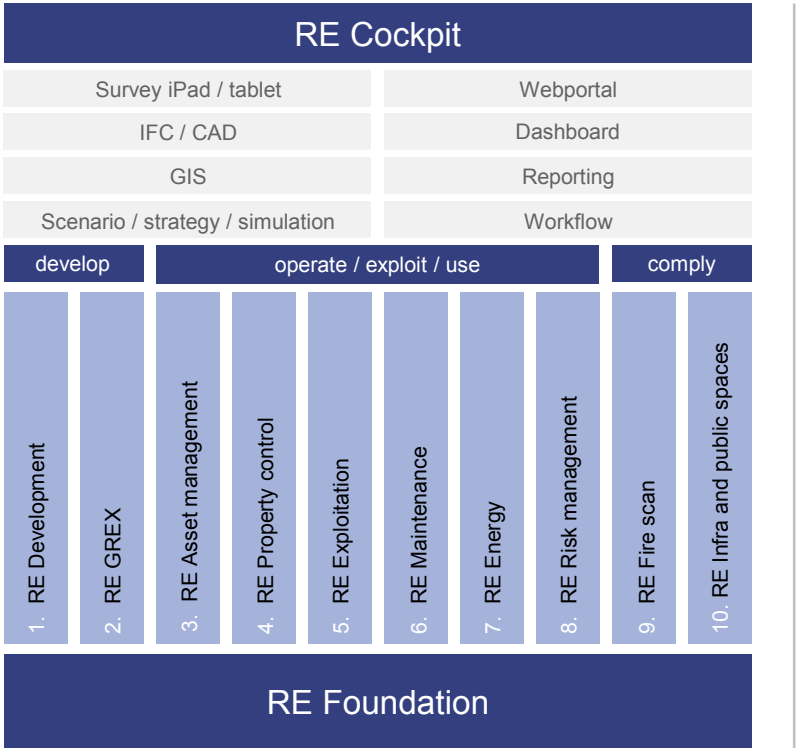
Software

Consultancy

Research

DEMO = RE + IM


I
Allocation investments
II
Portfolio management
strategic
III
Asset management
tactical
IV
Property (& service) management
operational


RE Cockpit
Survey iPad / tablet
Webportal
IFC / CAD
Dashboard
GIS
Reporting
Scenario / strategy / simulation
Workflow
develop
operate / exploit / use
comply
1. RE Development
2. RE GREX
3. RE Asset management
4. RE Property control
5. RE Exploitation
6. RE Maintenance
7. RE Energy
8. RE Risk management
9. RE Fire scan
10. RE Infra and public spaces
RE Foundation

WHAT DOES DEMO OFFER?

- **Software**
  - Delivery
  - Generic development
  - Tailor made development
  - Implementation
- **Consultancy services**
  - Survey (NEN 2767, energy, fire scan, safety, holistic)
  - Consultancy
  - Research
  - Training, courses, interim chores, audits

Aspects

- Financial analysis
- Technical administration
- Maintenance policy (MYMP, NEN 2767)
- Energy policy
- (Fire) safety
- Rules and regulations
- Sustainability
- Risk analysis and management

CLIENTS


Rijksgebouwendienst
Ministerie van Binnenlandse Zaken en Koninkrijksrelaties
TU Delft
Delft University of Technology
Port of Rotterdam
Unilever
Gemeente Almere
Woningbedrijf Velsen
woonstede
gemeente Haarlemmermeer
PORTAAL
Gemeente Amsterdam
Erasmus Universiteit Rotterdam
Gemeente Den Haag
Gemeente Rotterdam
gemeente Zoetermeer
Ymere
wonen, leven, groeien
deltaWonen
wonen en leven, nu en later
parteon
TNO
WAGENINGEN UR
For quality of life
tbv wonen
ruimte voor mensen
QuaWonen
VESTIA
kennemer wonen
S.A.D.C
SCHIPHOL AREA DEVELOPMENT COMPANY
UMC
Universitair Medisch Centrum Utrecht
HOGESCHOOL UTRECHT
HagaZiekenhuis van Den Haag
S C W
TIEL
gemeente Pijnacker-Nootdorp
lefier
wonen met karakter StadGroningen
Goed Wonen Zederik
woningstichting Barneveld
mitros
de woonplaats
alle ruimte!
van gelder
Delft Cluster
bo-ex

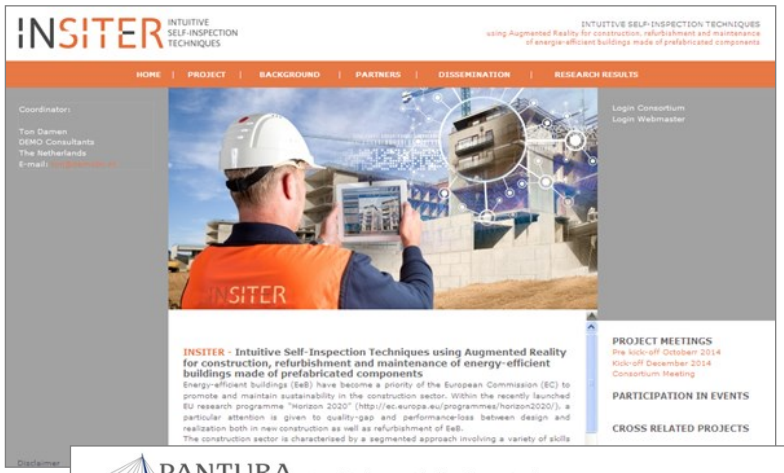
RESEARCH PROJECTS

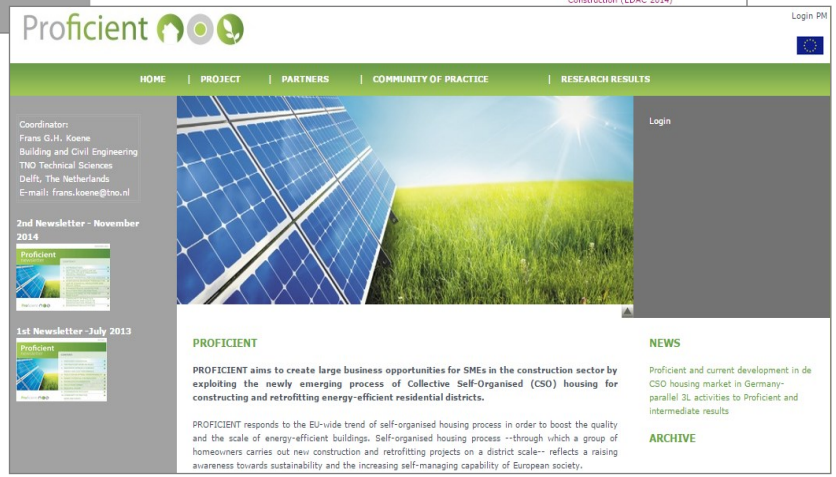
DEMO CONSULTANTS

SEVENTH FRAMEWORK PROGRAMME

HORIZON 2020
THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

tkienergo





PROPOSITION

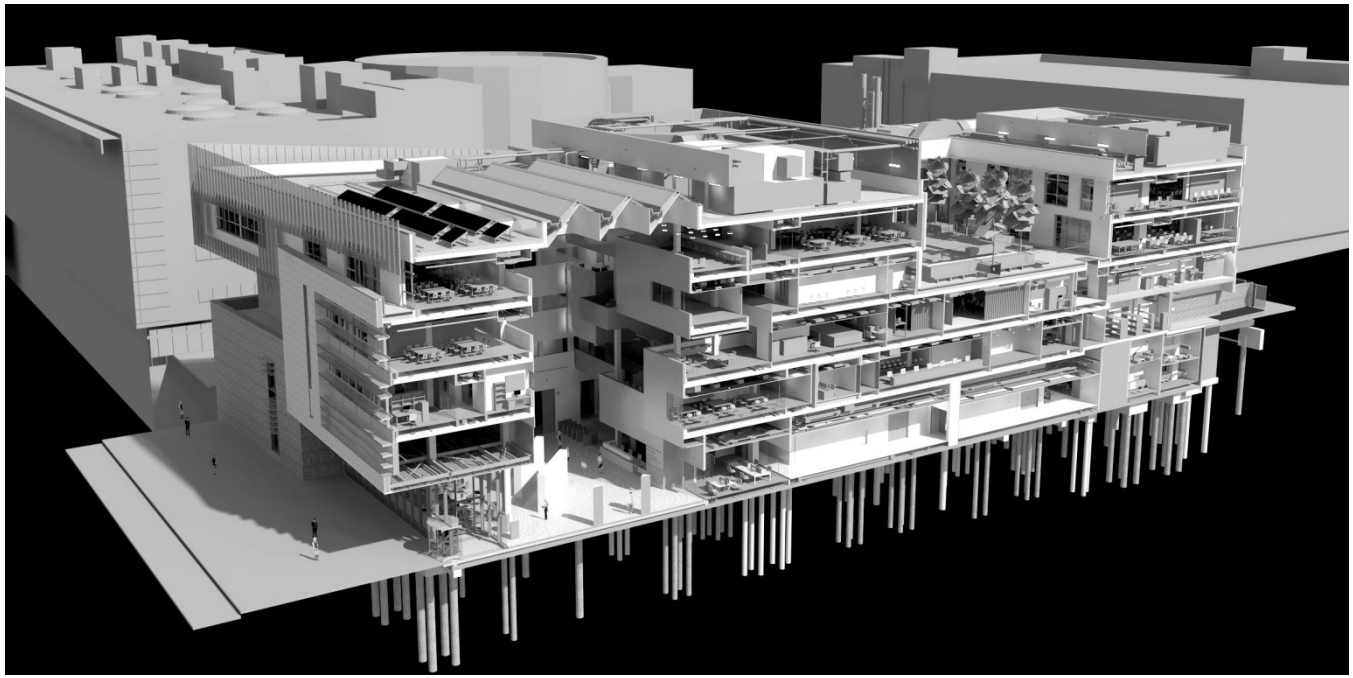
BIM is *not* smart

It is the user that makes BIM smart
by creating and applying it in a smart way

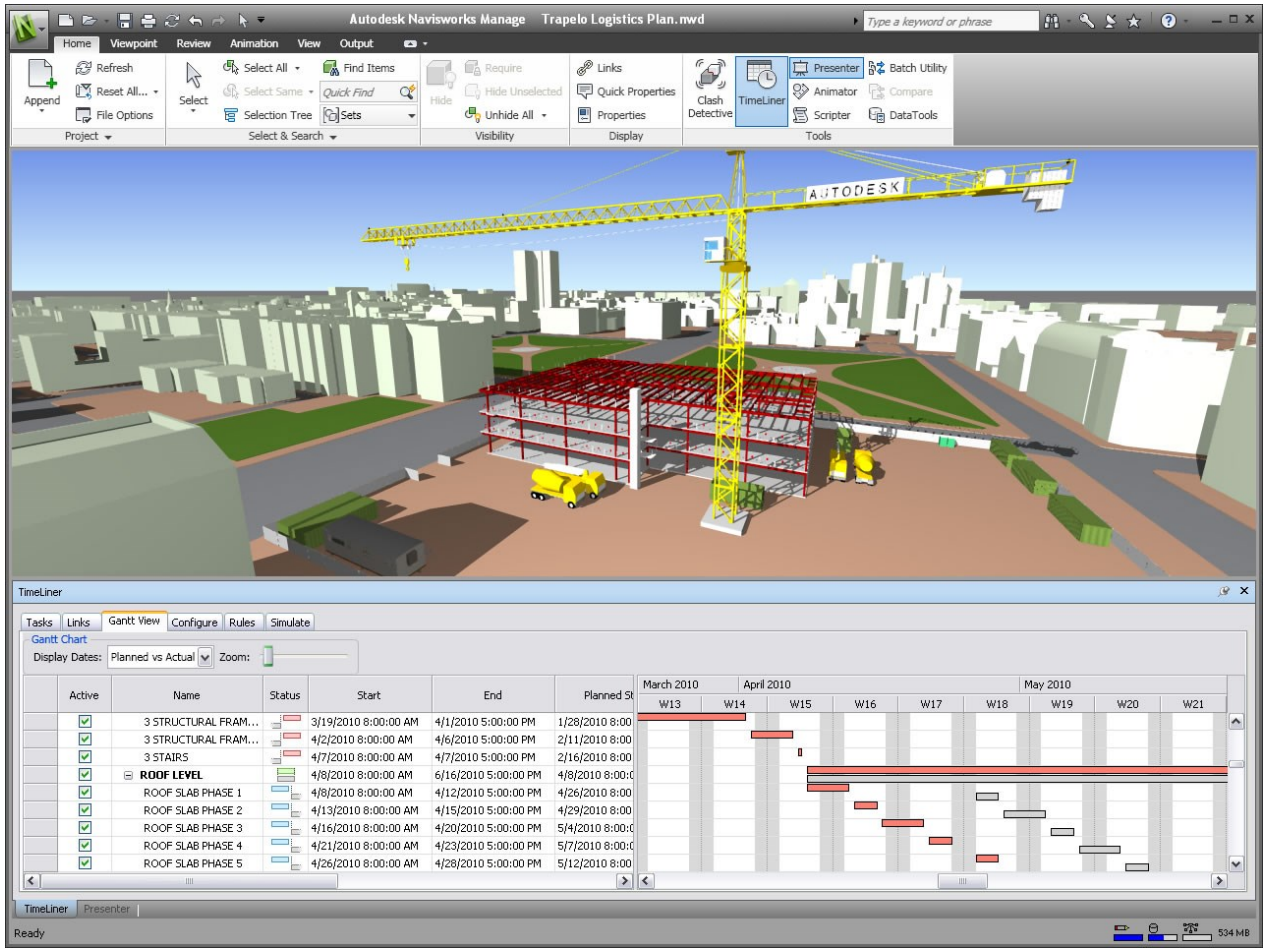
* BIM = Building Information Model



- **3D BIM: geometry and visualisation**



- **4D BIM: time scheduling**



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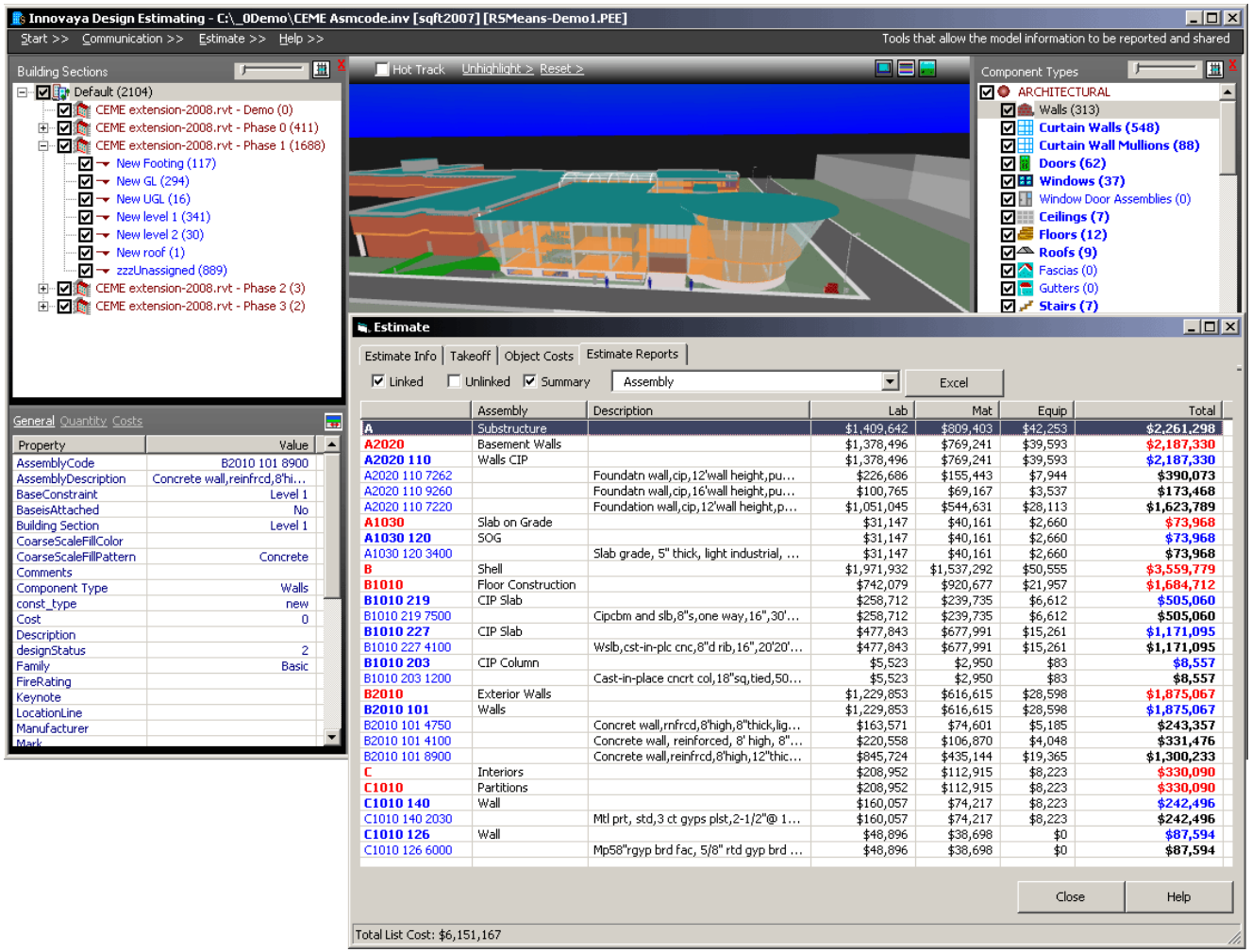
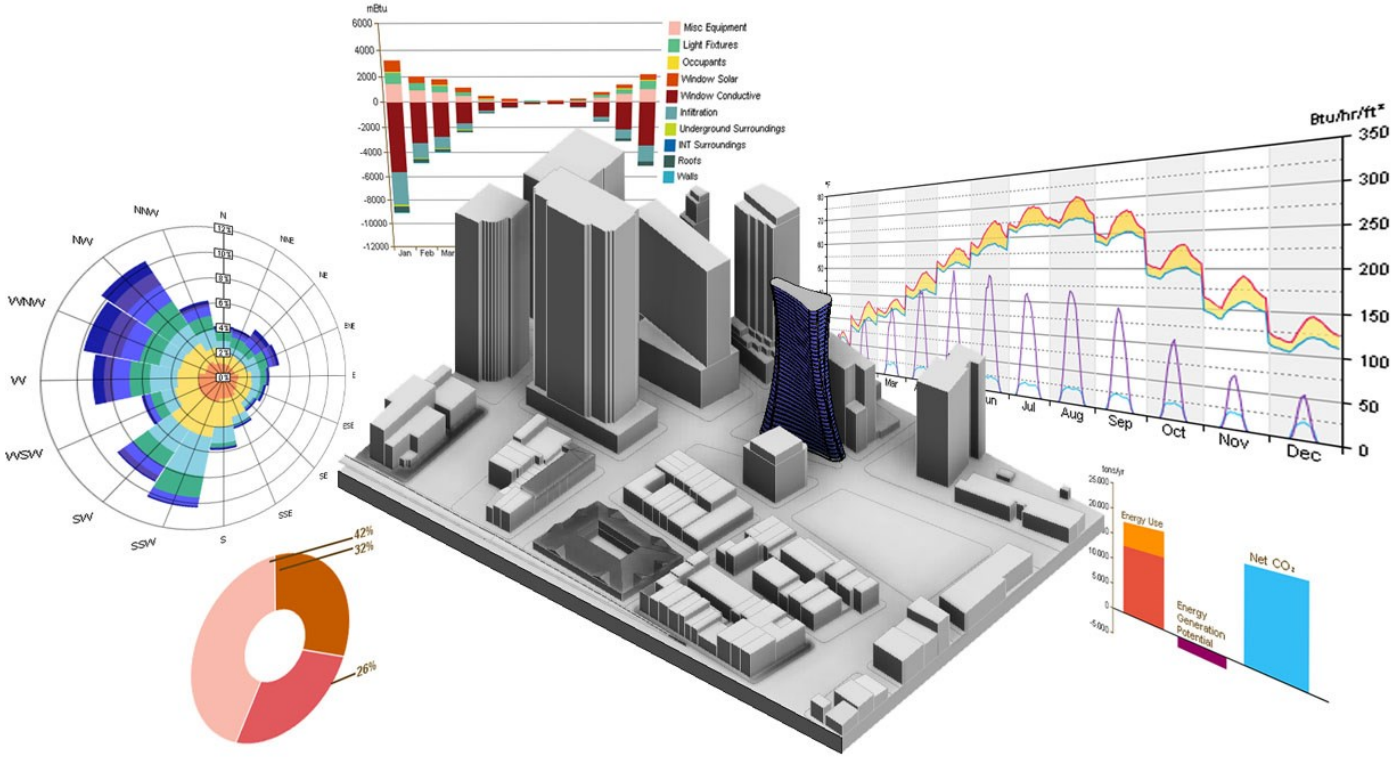
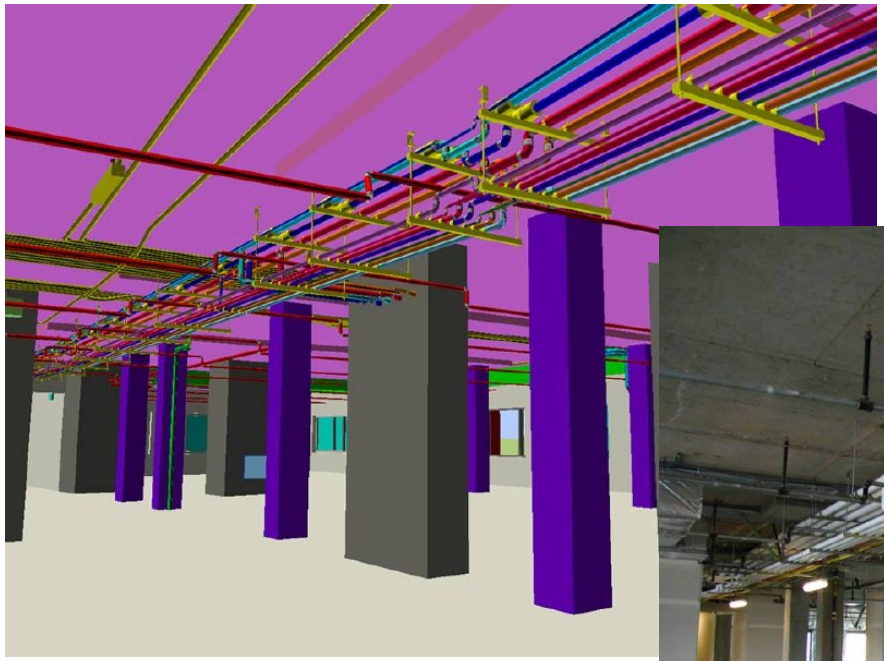
- **5D BIM: cost estimation**



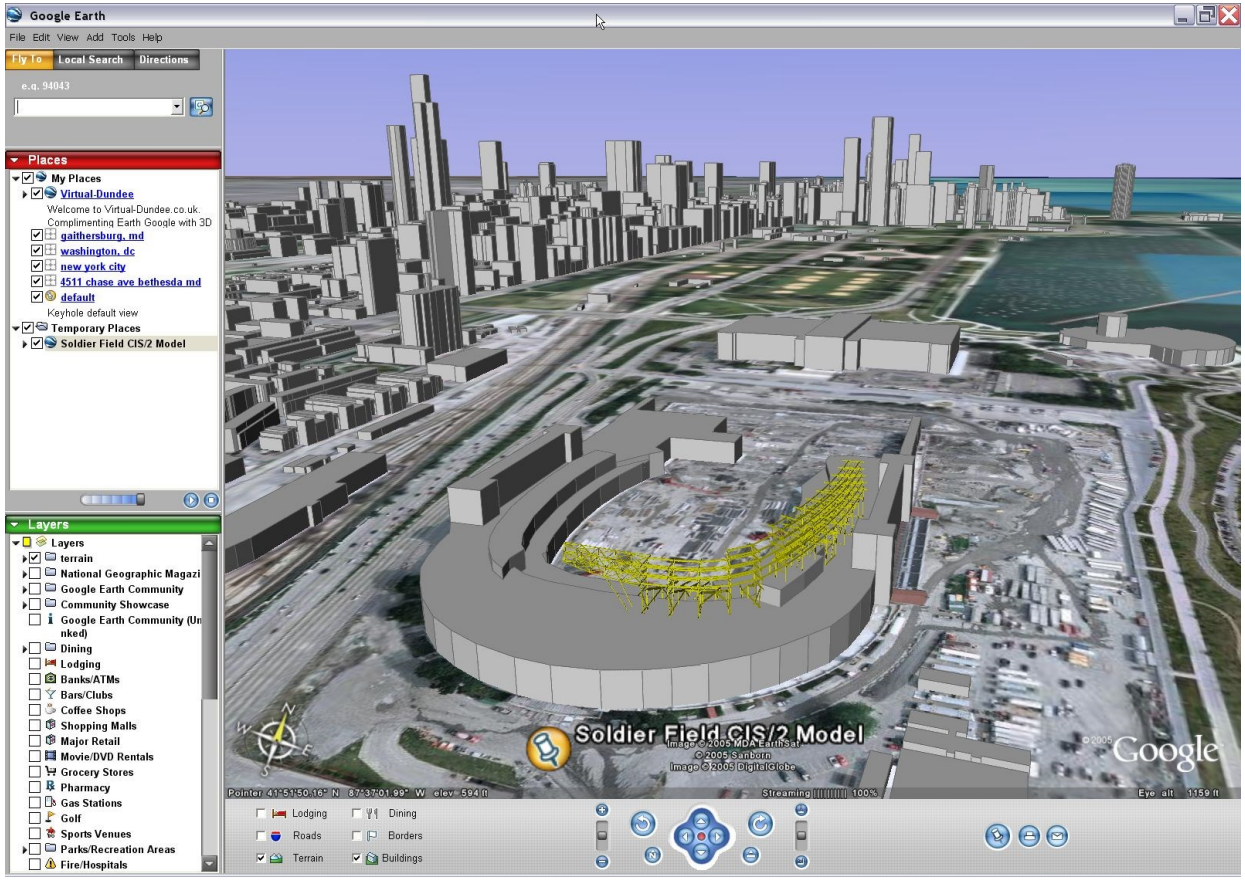
- **6D BIM: energy analysis**



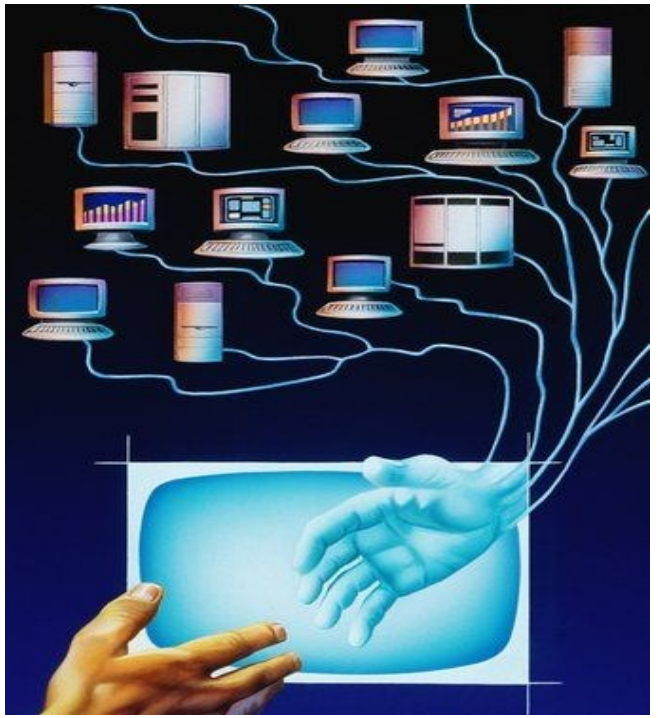
- **7D BIM: facility management**



- **8D BIM: post-occupancy**



- **…D BIM: ??**



APPLIED RESEARCH

BIM APPLIED RESEARCH IN NL AND EU

Low-disturbance construction

Digital cultural heritage

Energy-efficient buildings

Self-instruction & self-inspection

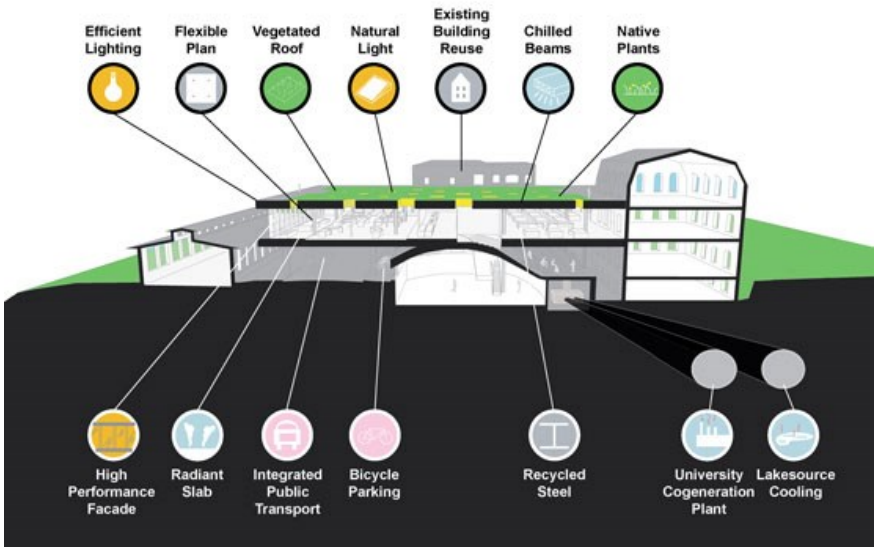
BIM FOR ENERGY-EFFICIENT HOSPITALS

- **Overall research goal**

Development of customizable semantic BIM:
a design template for new and retrofitted hospitals

BIM enriched with semantic guidelines:

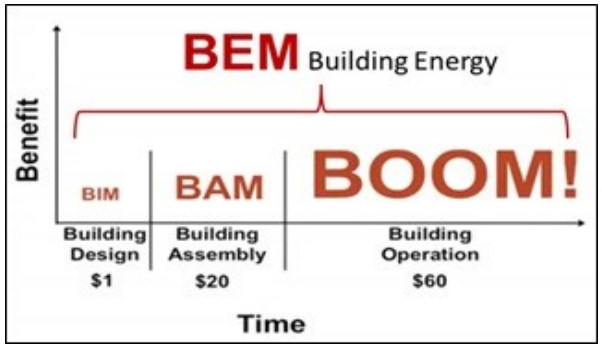
- Object models + process models
- Regulations + experience
- Specifications + performance

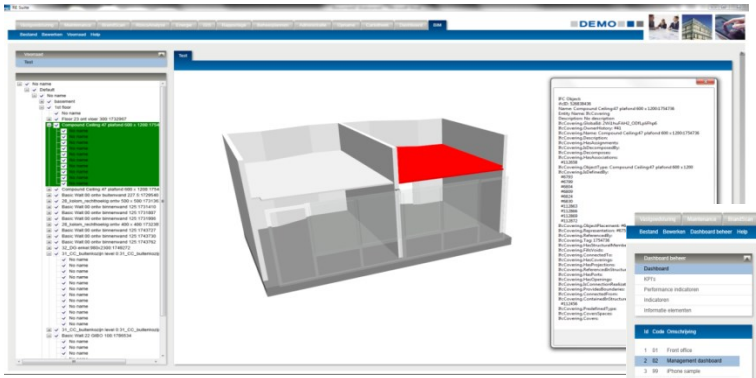


BIM FOR ENERGY-EFFICIENT HOSPITALS

- **Key achievement for DEMO**

Framework for hospital BEM (Building Energy Model):
a lifecycle model inter-connecting “BIM, BAM, BOOM”





IFC BIM with energy properties

A dashboard incorporating KPIs, algorithm, and MCDA (multi-actor decision analysis)

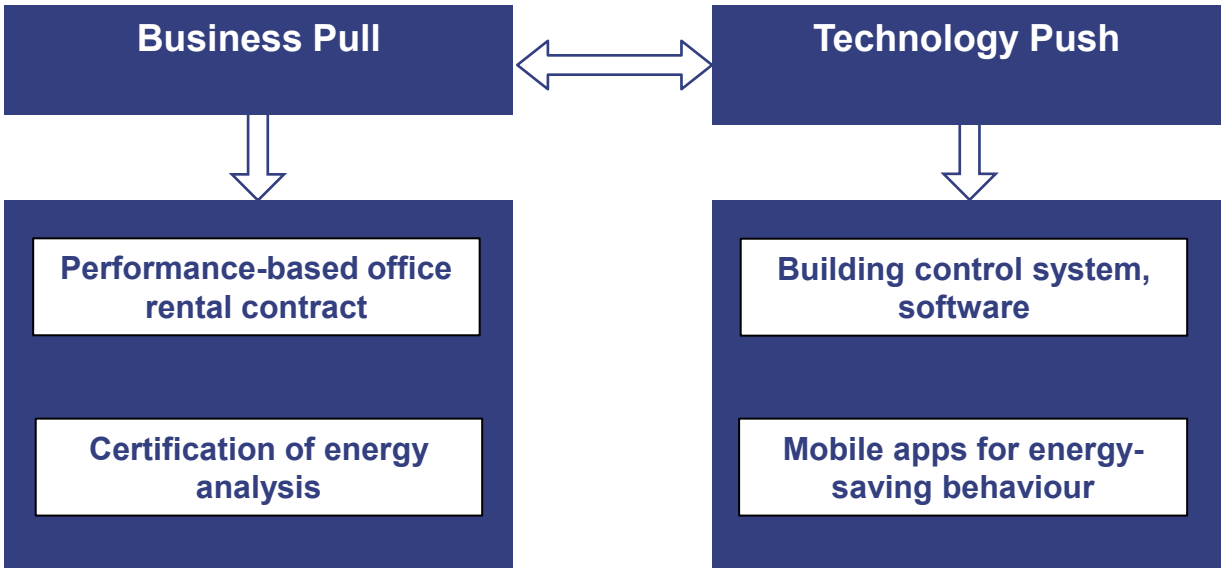
User mobile apps

BIM FOR ENERGY-EFFICIENT OFFICES

TRECO-Office

- **Overall research goal**

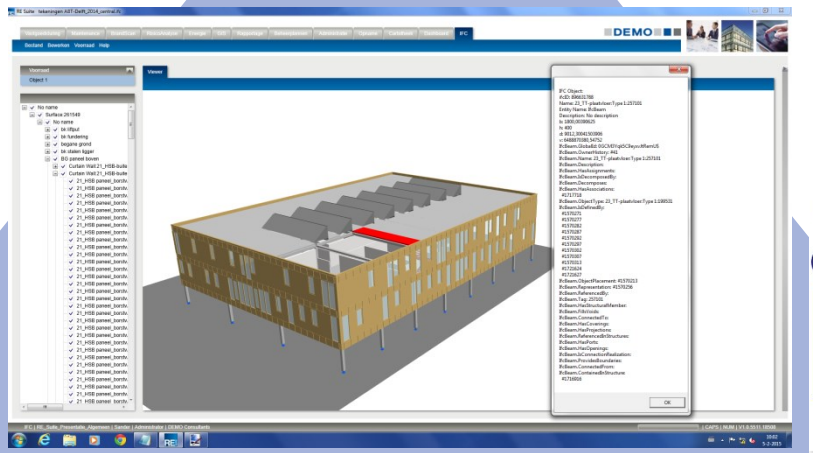
  Real energy performance and control for offices and public buildings



BIM FOR ENERGY-EFFICIENT OFFICES

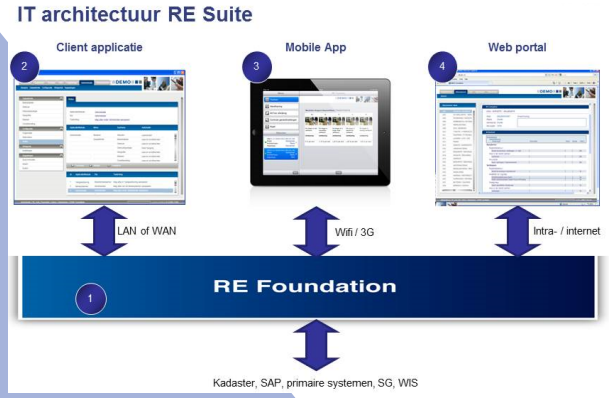
- **Key achievement for DEMO**

Building control system



BIM (IFC open standard)

Energy monitoring



Real estate information management

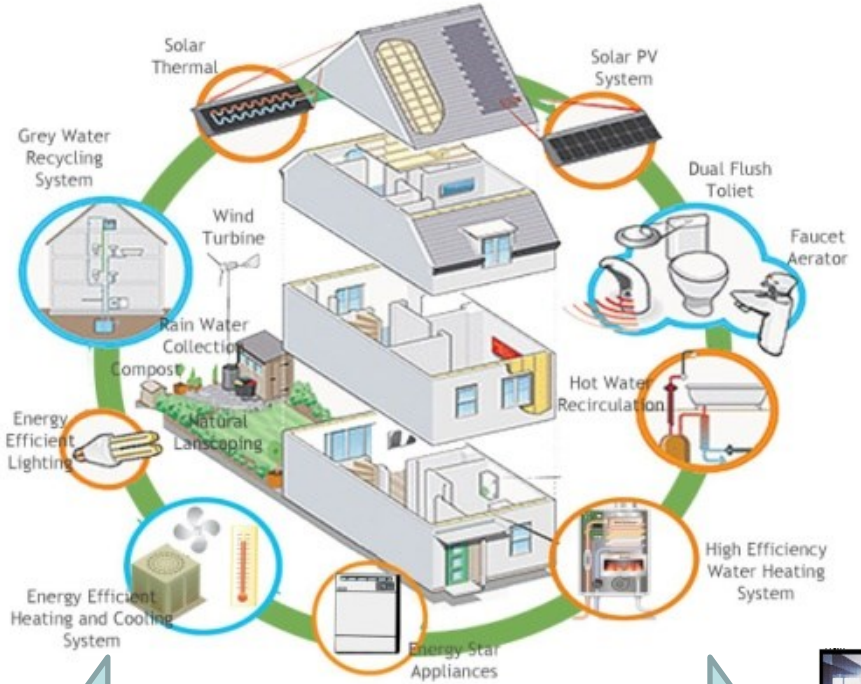
BIM FOR ENERGY-EFFICIENT NEIGHBOURHOODS

- **Overall research goal**

Facilitating the development of energy-efficient neighbourhoods
based on Collective Self-Organised (CSO) housing approach
supported by an e-Marketplace platform for Small & Medium-size Enterprises (SMEs)

BIM FOR ENERGY-EFFICIENT NEIGHBOURHOODS

- **Key achievement for DEMO**



Collective home owners

BIM enabled e-Marketplace

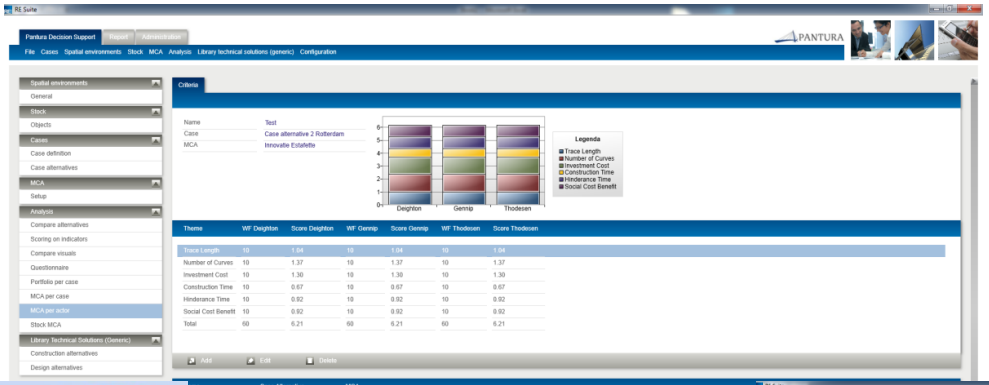
BIM FOR LOW-DISTURBANCE URBAN PROJECTS

- **Overall research goal**

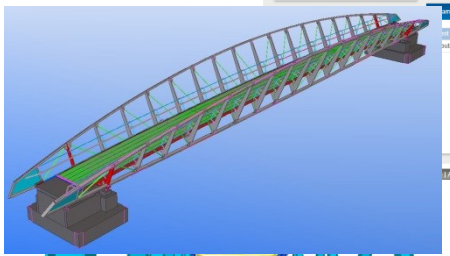
Development of construction management methods and ICT tools for low-disturbance construction, refurbishment and maintenance of bridges in the cities.

BIM FOR LOW-DISTURBANCE URBAN PROJECTS

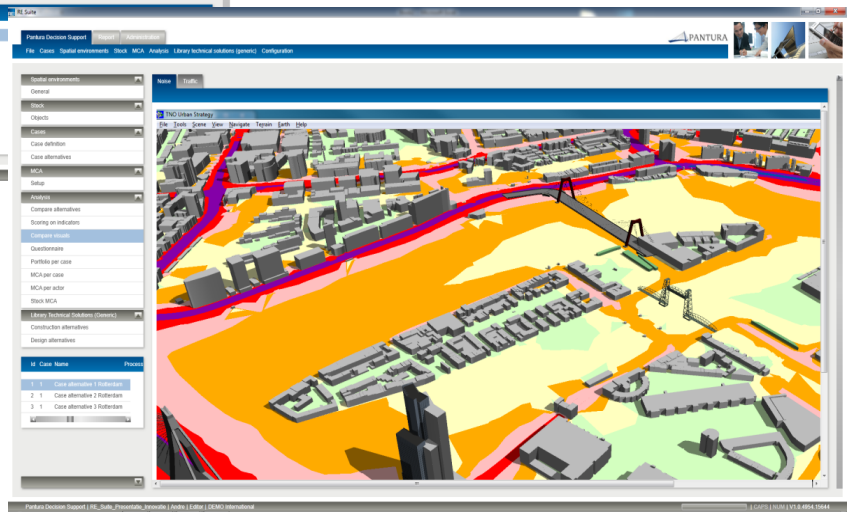
- **Key achievement for DEMO**



Multi-actor & multi-criteria decision-support tool



Bridge engineering in BIM



Urban impacts in 3D GIS

BIM FOR SELF-INSTRUCTION & SELF-INSPECTION

- **Overall research goal**

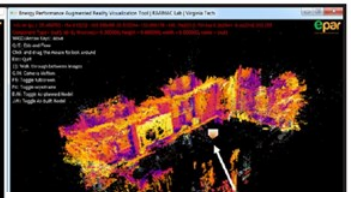
INSITER INTUITIVE SELF-INSPECTION TECHNIQUES

THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION HORIZON 2020

Development of intuitive and cost-effective BIM-based Augmented Reality for self-instruction and self-inspection at real time during the construction process

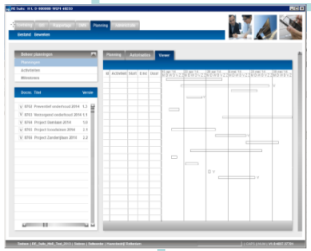
BIM FOR SELF-INSTRUCTION & SELF-INSPECTION

- Key achievement for DEMO



3D laser &
thermal scan

BIM-enabled
software solutions



Augmented Reality
inspection tool

BIM FOR TIME-DYNAMIC CULTURAL HERITAGE

- **Overall research goal**

INCEPTION
Inclusive Cultural Heritage in Europe through 3D semantic modelling

HORIZON 2020
THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

Development of BIM-based methods and instruments for time-dynamic 3D reconstruction of cultural heritage for scholars, building engineers, tourists and governments

BIM FOR TIME-DYNAMIC CULTURAL HERITAGE

- **Key achievement for DEMO**

Semantic software platform and mobile apps for Heritage-BIM (H-BIM)


DISCUSSIONS
Onderhoudskoster
Integrale kostprijs (gemidd

MORE INFORMATION

- www.insiter-project.eu
- www.inception-project.eu
- www.streamer-project.eu
- www.proficient-project.eu
- www.pantura-project.eu
- www.tki-energo.nl/treco-office/



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