

Capability of CAD / BIM and Model Checking in the management and maintenance of buildings: the experience of Helsinki

LABORATORY ON ACCESSIBILITY, DOMOTICS AND INNOVATION
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-
- Senate Properties
 - BIM - collaboration
 - Case

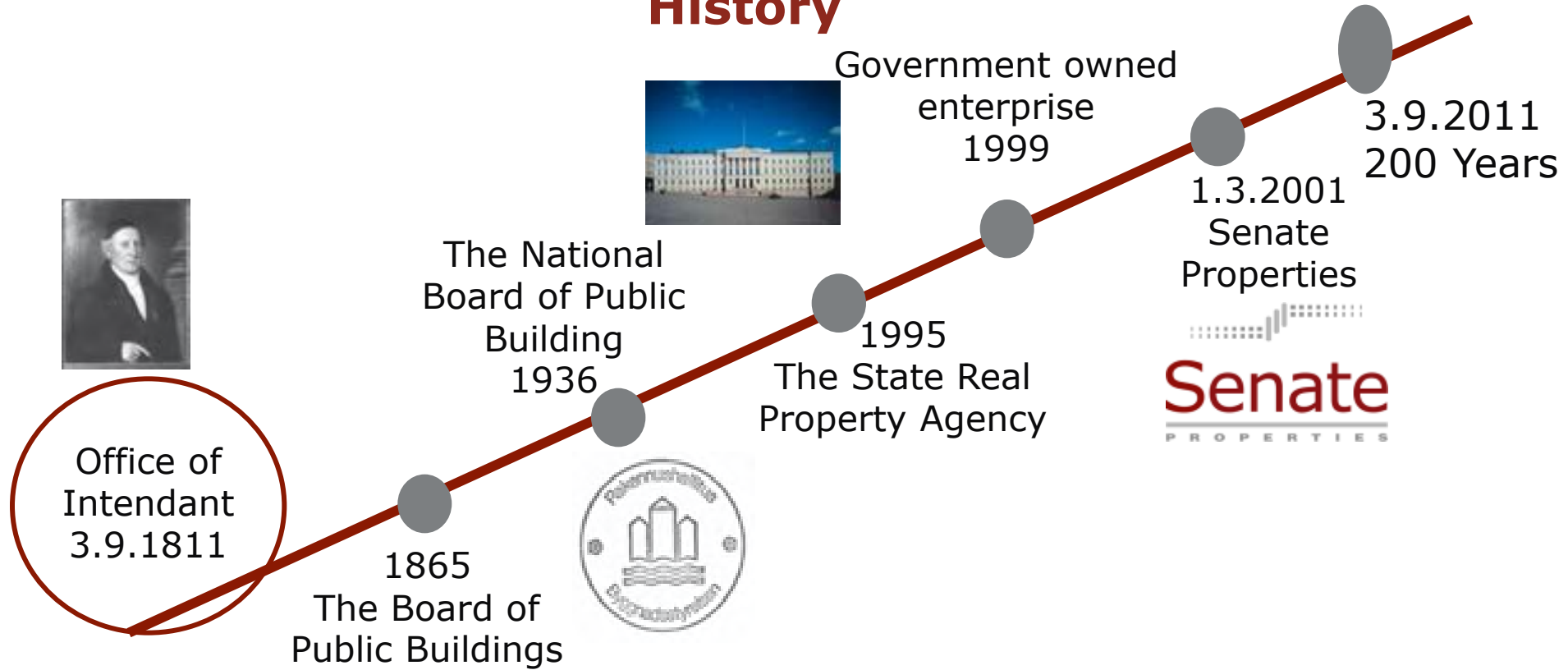


Senate Properties 2011

- State owned enterprise under the aegis of the Ministry of Finance
- Approximately 11 000 buildings
- Rentable floor area 6,5 million m²
- Book value of properties EUR 4,6 billion
- Turnover 583 M€
- Staff-years 249,4
- Investments 244 M€
- Four divisions: Ministries and Special Premises, Defence and Security, Offices, Development Premises



History



Mission

Senate Properties as a premises expert supplies its customers with smoothly operating premises and services that match their needs.

For government employees, this means pleasant and productive working environments.

“We provide a space with solutions”



Vision

We are worthy of our customer's partnership. We constantly create new solutions and services for changing needs and situations of our customers and the central government. Responsibility is one of the cornerstones of our business.

"One step ahead of expectations"



Senate Properties' strategy 2011–2014

“We bring solutions”

- Strategic change into the state CREM expert organisation
- We provide our customers with total premises solutions, comprising premises and related services
- In the solution model, not everything will be offered to everyone: the aim is always to find an optimal and cost-effective solution for each customer



Business Area Ministries and Special Premises

- Client base consist of ministries, research institutes and cultural institutions located mainly in the Helsinki Metropolitan Area, such as the Finnish National Opera and Finnish National Gallery
- The business area's property base is demanding, as most of the customers operate in premises classified as valuable buildings



Museum of Contemporary Art Kiasma in Helsinki.



Business Area Offices

- Customer base includes various state administrative business areas and offices, such as the justice department, the police, the tax administration and employment centers
- Versatile properties: office buildings vary from 19th century premium properties to modern office premises, from vast office complexes of single or multiple users to smallish office building premises and single offices



Lohja District Court.

Corporate sustainability is the foundation of our operation

- All our property and service solutions are based on
 - *environmental*
 - *economical and*
 - *social sustainability*
- These components of corporate sustainability are equally considered in all decision making
- Our operation is equal towards all our interest groups



The vision of social responsibility:

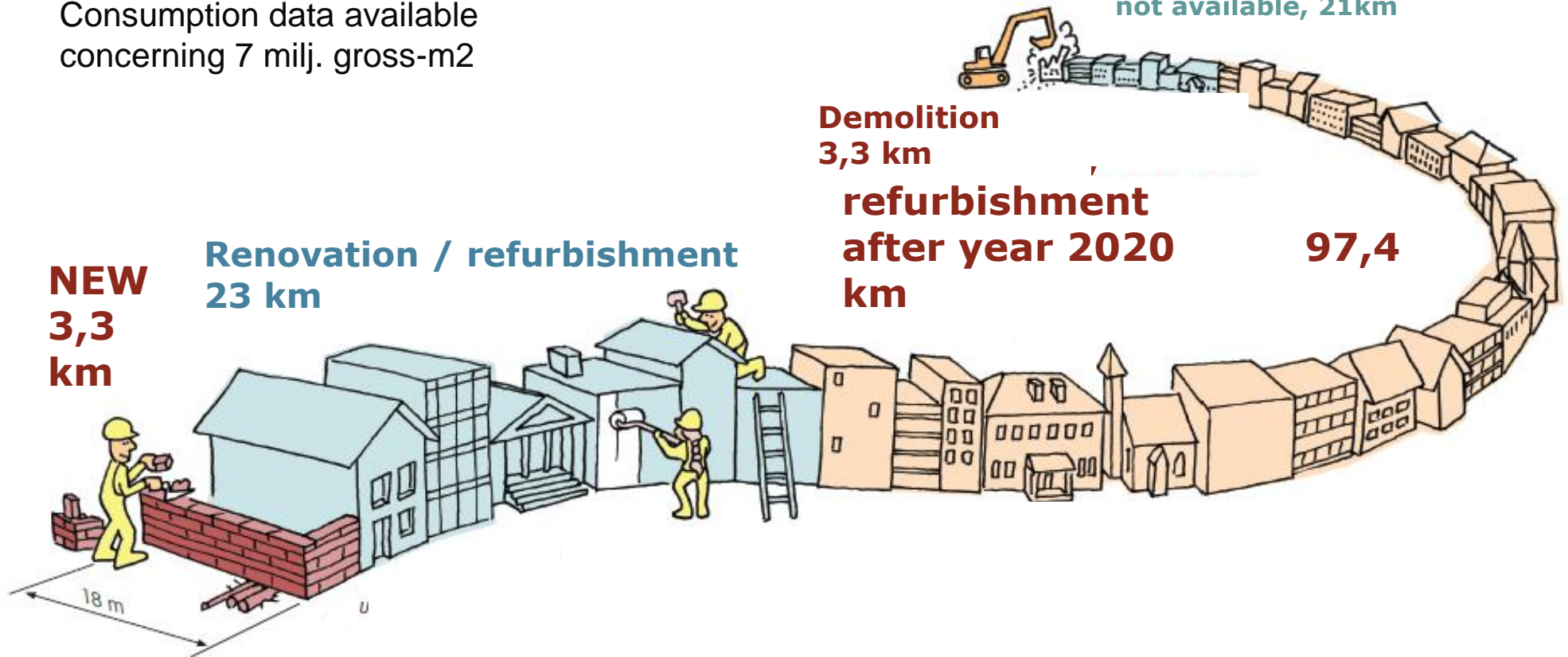
Our clients perceive our operations to be socially responsible. In our field of business, we promote the use of innovative operational models and solutions that are financially, socially and ecologically responsible.

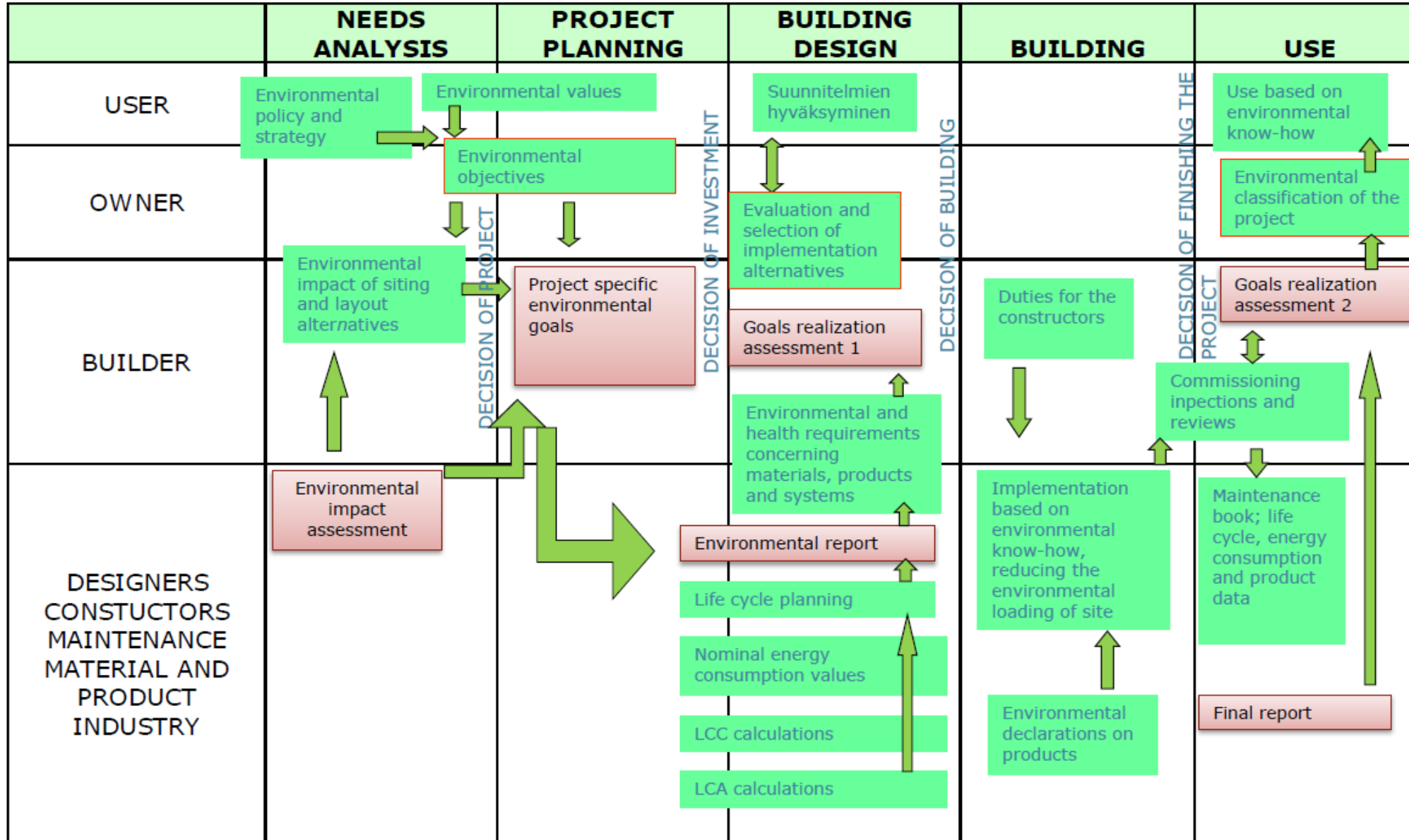
We consider the social and environmental impact of our operations in our decision-making, management and everyday operational processes. We develop the responsibility of our operations by continuously assessing it in an open dialogue with our stakeholders.

Investments (= Construction & Demolition) Years 2011- 2020 18m x 150 000m x 10m

Consumption data available concerning 7 milj. gross-m2

Consumption data not available, 21km





BIM - collaboration

Design for All

Open Design for All

Open BIM means Open Design for All Stakeholders

Major BIM projects

PM4D – Product Modelling 4D
2001 -2002

VIP- Virtual Investment Process 2002 -2006

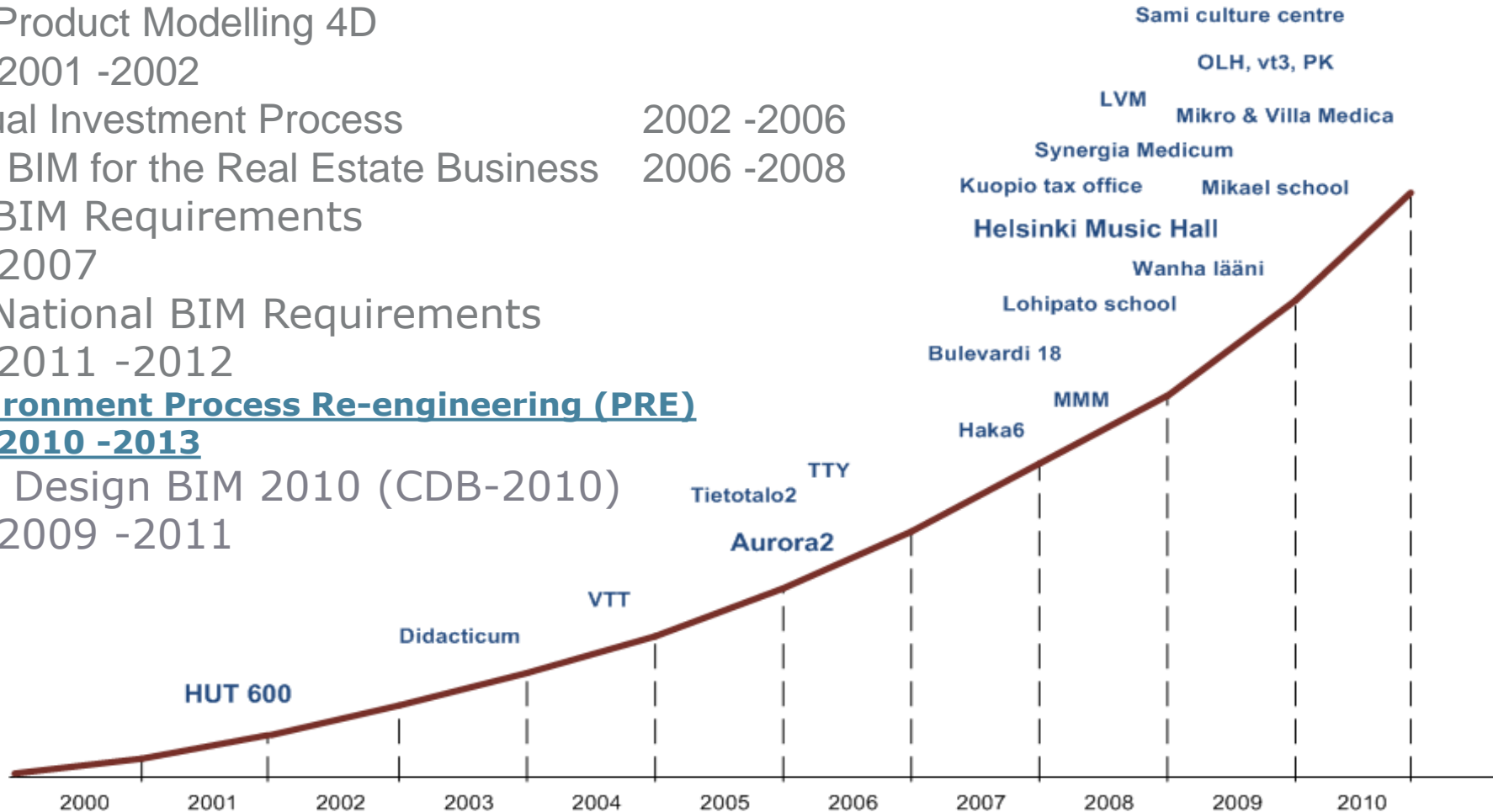
REBIM – BIM for the Real Estate Business 2006 -2008

Senate BIM Requirements
2007

COBIM National BIM Requirements
2011 -2012

Built Environment Process Re-engineering (PRE)
2010 -2013

Concept Design BIM 2010 (CDB-2010)
2009 -2011



SENATE PROPERTIES AND CONCEPT DESIGN BIM -2010

International collaboration 2001 – ...

“Statement of Intention to Support Building Information Modelling With Open Standards”

-signed by GSA /USA, Statsbygg/Norway, Senate Properties/Finland, DEGA /Denmark, Jan 2008

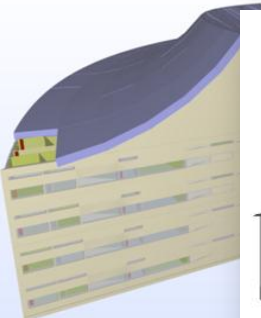
KEY POINTS

- SP has Long history of testing, piloting and using BIM in real projects
- Many uses of BIM are already possible in pilot projects, but not yet effective in all projects
- As a building owner one of Senate Properties goals is to improve decision making in the concept design stage
- CDB-2010 promises to lower the barriers of using BIM successfully in this key project stage - in all projects

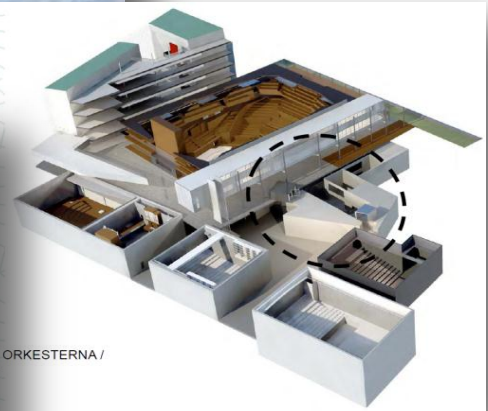
Gaining experience

- Senate Properties has been one of the forerunners in using BIM in real projects
 - The first internationally known and reported project was HUT-600, already in 2001-2002
 - A major milestone was reached with Aurora2 in 2005-2006
 - Helsinki Music Hall
- Senate Properties has piloted and used BIM in a wide array of different use cases and scenarios
 - From large to small
 - New buildings, refurbishments, historic buildings
 - All project stages from concept design to use and maintenance
 - All stakeholders; clients, project managers, users, designers, special consultants, construction companies, building officials

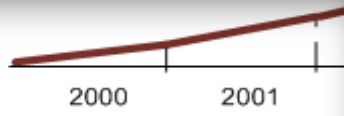
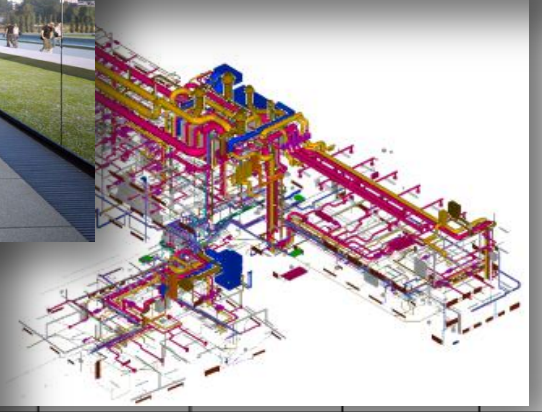
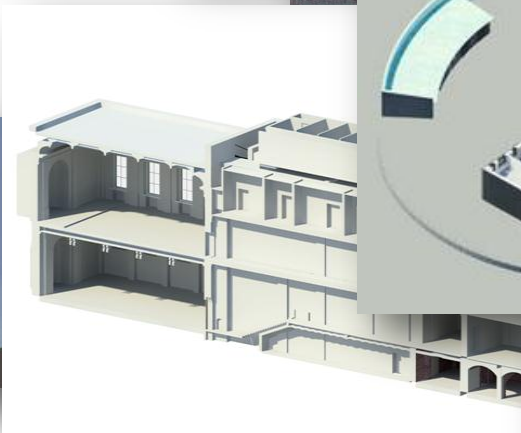
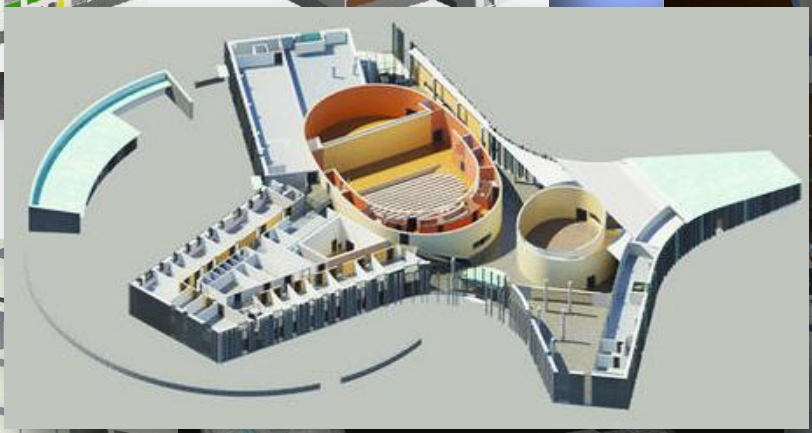
Major BIM projects



culture centre
OLH, vt3, PK



ORKESTERNA /



Current challenge

- The current challenge is to move the use of BIM from the 'ideal world' into the 'real world'
 - Technology → standard software and support
 - Process → easy to commission and manage
 - Business → simple logic for effort vs. benefit
- Senate Properties is already gaining experience from this, sometimes painful transition
 - Case Mikael School 2009-2010 – “Lifecycle BIM”

Building Information Modeling (BIM) in Facility Management and Use

SOCIALLY RESPONSIBLE BUSINESS

CONTROLLED
EXPANDING
SUPPLY

NETWORKING

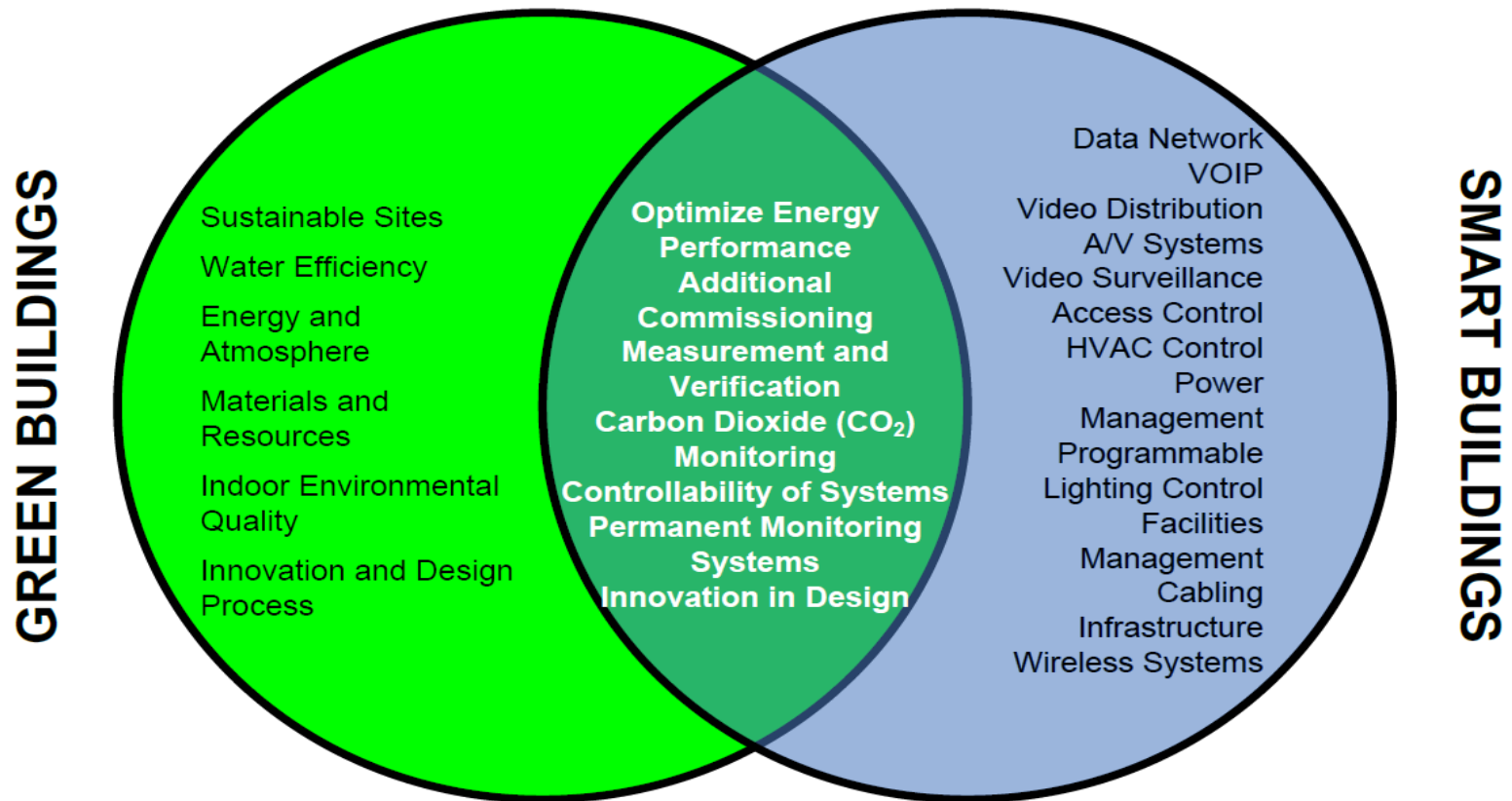
BIG CHANGE
IN SKILLS

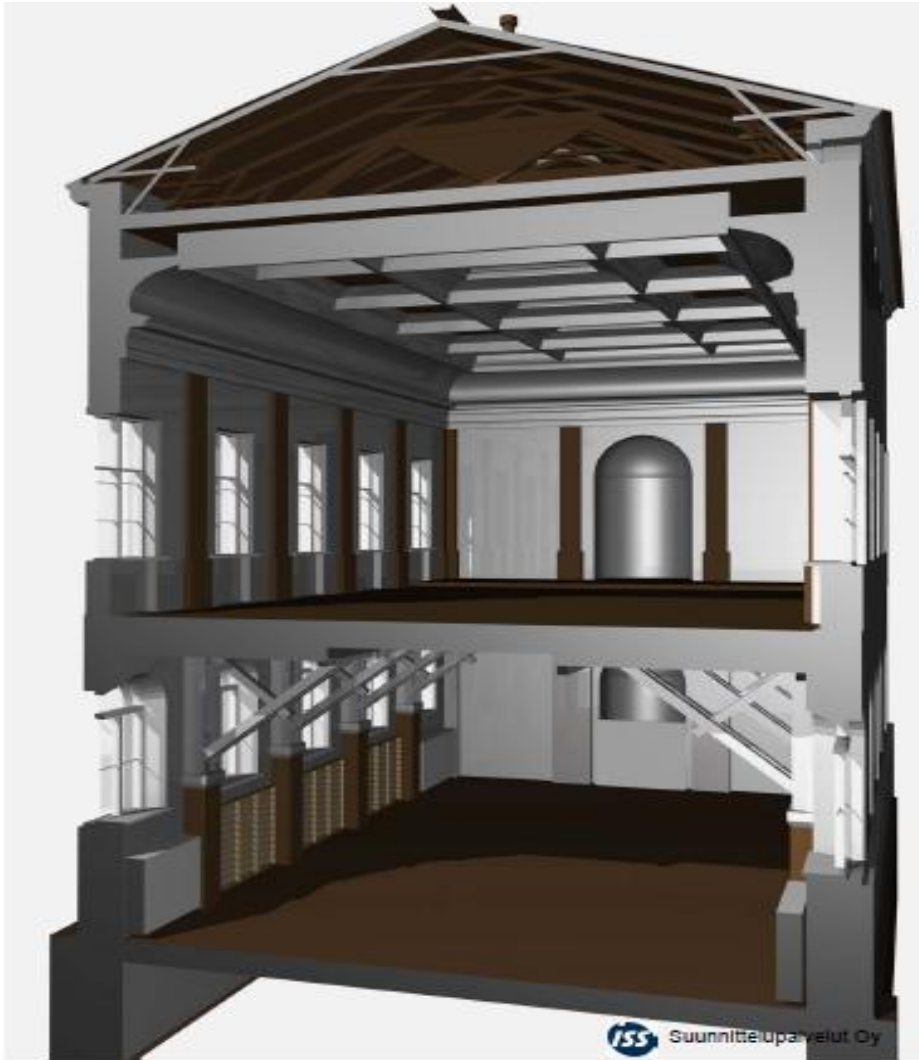
- economically, socially, ecologically sustainable and innovative operation models
- space service concepts
- Work Place
- working environment
- deeper customer orientation
- networking with the best vendors
- ensuring the service quality
- organization skills, sharing skills, common learning processes
- "ready to change" and agile culture and way of working

EXAMPLES

- early phase simulations for construction and maintenance
- demonstration – 3D/4D
- comparison of alternatives
- cost and conditions analysis
- supporting decision - making IFC data exchange between programs in networking
- team work in BIM-projects
- iRoom-environment
- project management (scopes, schedules, costs)
- transparency > data is open for all stakeholders and realtime
- acting as bold pilots
- developing simultaneously processes

THE COMMONALITY OF SMART AND GREEN BUILDINGS



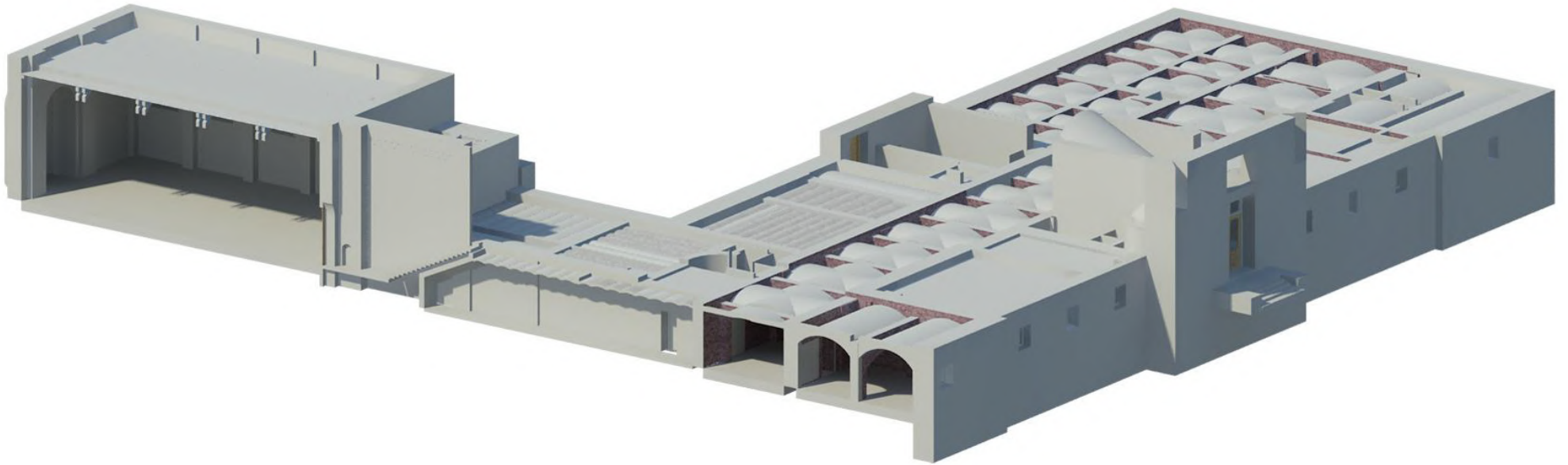


CASE

■ EUROPEAN SCHOOLING HELSINKI

European Schooling Helsinki (ESH) is a school accredited into the European Schools' network and is maintained by the Finnish government.

It has a two-year nursery cycle, a five-year primary cycle and a seven-year secondary cycle. Instruction is given in three language sections (English, Finnish and French).



[European School Walk-Thru.avi](#)





keep it simple !



Thank You !