

Αποδέκτης Τεχνικό Επιμελητήριο της Ελλάδας	Ελληνικό Πρότυπο Ψηφιακής Σχεδίασης — Μέρος 2	Διεπιστημονική Ομάδα Εργασίας ΕΠΨΣ
Κωδικός ---	Τίτλος Έκθεση Τεκμηρίωσης	Σελίδα 1 από 21

*Ελληνικό Πρότυπο Ψηφιακής Σχεδίασης — Μέρος 2:
Έκθεση Τεκμηρίωσης*

Διεπιστημονική Ομάδας Εργασίας
Ελληνικού Προτύπου Ψηφιακής Σχεδίασης

Ιατρουδάκης, Παντελής, Α.Μ., Συντονιστής
Ιακωβίδης, Κωνσταντίνος, Η.Μ.
Τσιώνης, Ηλίας, Π.Μ.

Matrix for drivers of change

	Environment	Globalization	Population	Technology	Citizen empowerment	Society of skills and culture
Global						
EU						
Finland						



Construction – ONE sector

- 15% of GDP and employment
- 70 % of National assets
- 55 % of Investments
- 10 % of Export income

- Of all houses 2050, 50% are built today

- New energy regulations 2010 (Passive house) and 2012§

- The Government's Foresight Report: Emissions down by 80% before 2050

- Emissions in Finland appr. 65% Europe 88%

DURING 2009

GDP down by 7,8 %

Export volume down by 24 %

Investments down by 13 %

Unemployment rate January 2010 9,5 %

Increase by 66 000 persons

**Among 15-24 yrs increase by
7,1 % to 22,7 %**

A Finnish Green Building Council to be Founded in April 2010

- LEED?
- BREEAM + Local extension?
- PROMISE?
- BREEAM + Local
extension=PROMISE?
- EU's SBA?





WORLD GREEN BUILDING COUNCIL

[Home](#)[About WorldGBC](#)[Green Building Councils](#)[Council Development](#)[Influencing Change](#)[Resources](#)[Business Case](#)[GBC Directory](#)[Green Building Rating Tools](#)[How to establish a GBC](#)[Council News](#)

ESTABLISHED GREEN BUILDING COUNCILS



OUR VISION

Through leadership collaboration, the global construction industry will transform traditional building practices and fully adopt sustainability as the means by which our environments thrive, economies prosper and societies grow to ensure the future health of our planet.

Upcoming Events

September 09, 2009 -

September 12, 2009

[India's Green Building Congress...](#)

September 23, 2009 -

September 23, 2009

[WorldGBC's Leaders Summit](#)

WorldGBC News

WorldGBC supports UNEP's "Call to Action"

The WorldGBC is a contributing member to the Sustainable Buildings Construction Initiative of the United Nations Environment Programme (UNEP SBCI). Over the past year, the WorldGBC Policy Task Force has worked closely with members of the UNEP SBCI Secretariat and membership to develop the "Buildings and Climate Change Industry Call to Action."

[Read more...](#)

WorldGBC declares September 23rd as World Green Building Day

The World Green Building Council is very pleased to announce that this coming September 23rd marks the inauguration of World Green Building Day -- an annual event established to unite the efforts of Green Building Councils from around the world as they strive for market transformation of the global property market and building industry.

[Read more...](#)

Launch of the WorldGBC Asia Pacific Network

What is the WorldGBC Asia Pacific Network?

With over half the world's urban population destined to live in the Asia Pacific region by 2030, sustainable development has a key role to play. The WorldGBC's Asia Pacific Network has been

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Our Partners

PHILIPS

Global Platinum Partner



The Strategic Centres for Science, Technology and Innovation (SHOK)

- The Strategic Centres for Science, Technology and Innovation (SHOK) offer top-level research units and enterprises making use of research results a new environment for close and sustained cooperation with each other. Bringing together a variety of competencies in diverse networks can help speed up innovation activity, pursue global breakthroughs and make Finland an attractive partner.
- The internationalisation of innovation activity is one of the key roles of the Strategic Centres. As well as national networks, the Strategic Centres have a growing network of European and global partners. By year-end 2009, six new Strategic Centres had been established in Finland: Forestcluster Ltd, TIVIT (ICT industry and services), FIMECC Ltd (metals and engineering), CLEEN Ltd (energy and the environment), **RYM Ltd (built environment)** and SalWe Ltd (health and wellbeing).
- Each Strategic Centre has launched several programmes, with a total of 13 underway at year-end 2009. The level of these programmes must be sufficiently high in terms of challenge and quality so that their outcomes have substantial significance. Tekes is developing the operational capacities of the Strategic Centres and encourages them to carry out operational development. In 2009 Tekes provided €10 million of funding for their research programmes and projects.



B³ – BIM-based Business Research Program

Point of Departure, Content, and Benefits

Point of departure?

- Fragmented supply chain, sub-optimization, lowest price as the main business model
- Investment costs are the main criterium in decision making – no sufficient consideration of life cycle costs and properties or environmental impacts
- BIM technologies are relatively advanced, but used in old processes; large business potential already in the existing technology



What must be investigated and developed?

- How to get clients actively participating in the processes in all stages of the life cycle?
- What must be changed in the work processes and business models, so that the branch can change?
- Which are the obstacles or drivers for the change?
- Which are the central problems in the use of BIM – what does not work and why?



What benefits would the new BIM-based business models and processes bring in the use, maintenance and construction of the built environment?

- Client from the object to subject – design of the whole must start from the real client needs
 - Improved communication based on virtual models and visualizations
 - Rapid and accessible comparisons of alternative solutions
- Efficient evaluation, verification and monitoring of the environmental impacts, costs and properties throughout the whole life cycle
- Cost effective mass customization
- Improved control and management of processes throughout the whole supply chain and life cycle
- Improved cost efficiency and delivery times in all stages of the process
- More efficient use and maintenance of the assets of built environment



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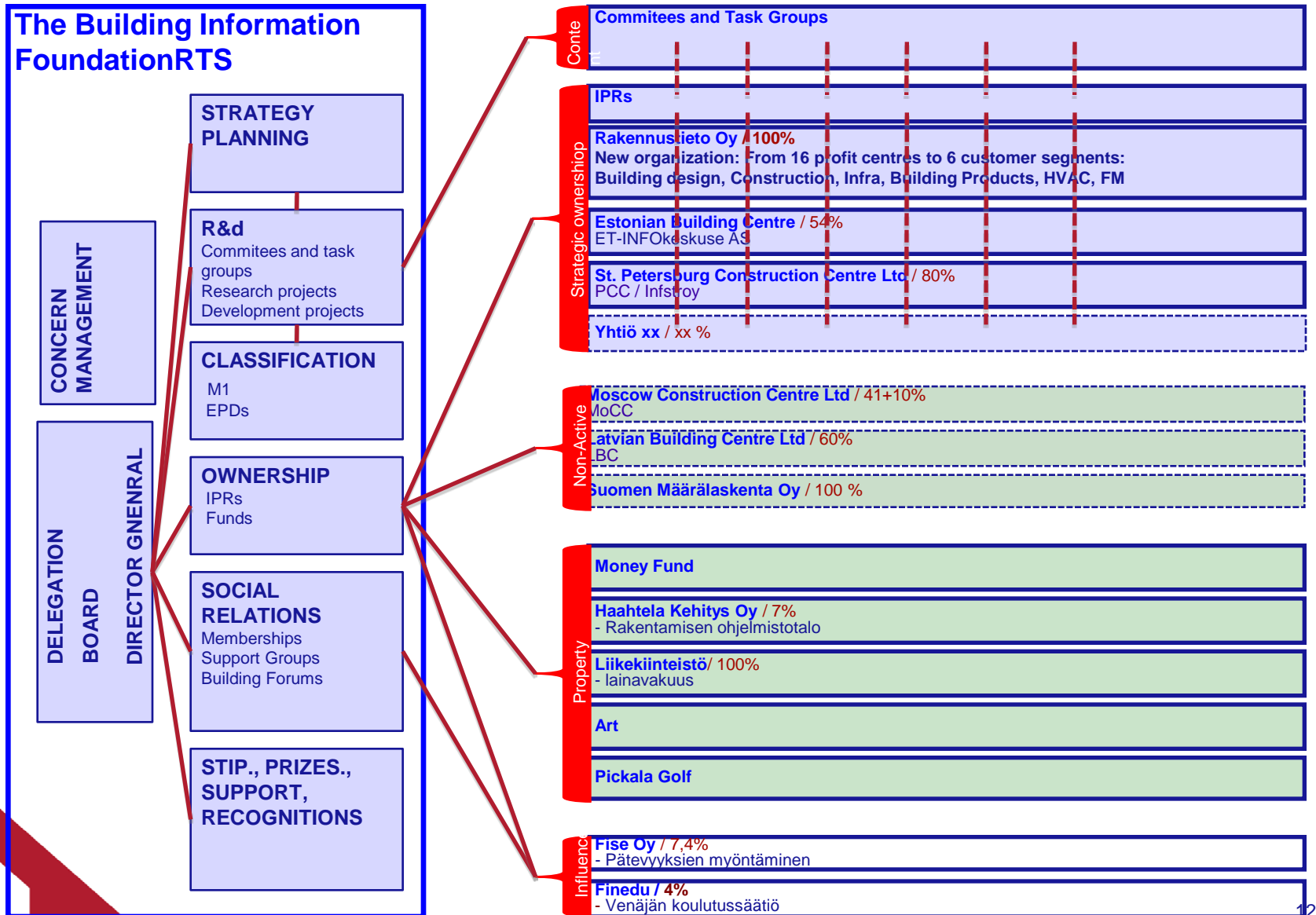
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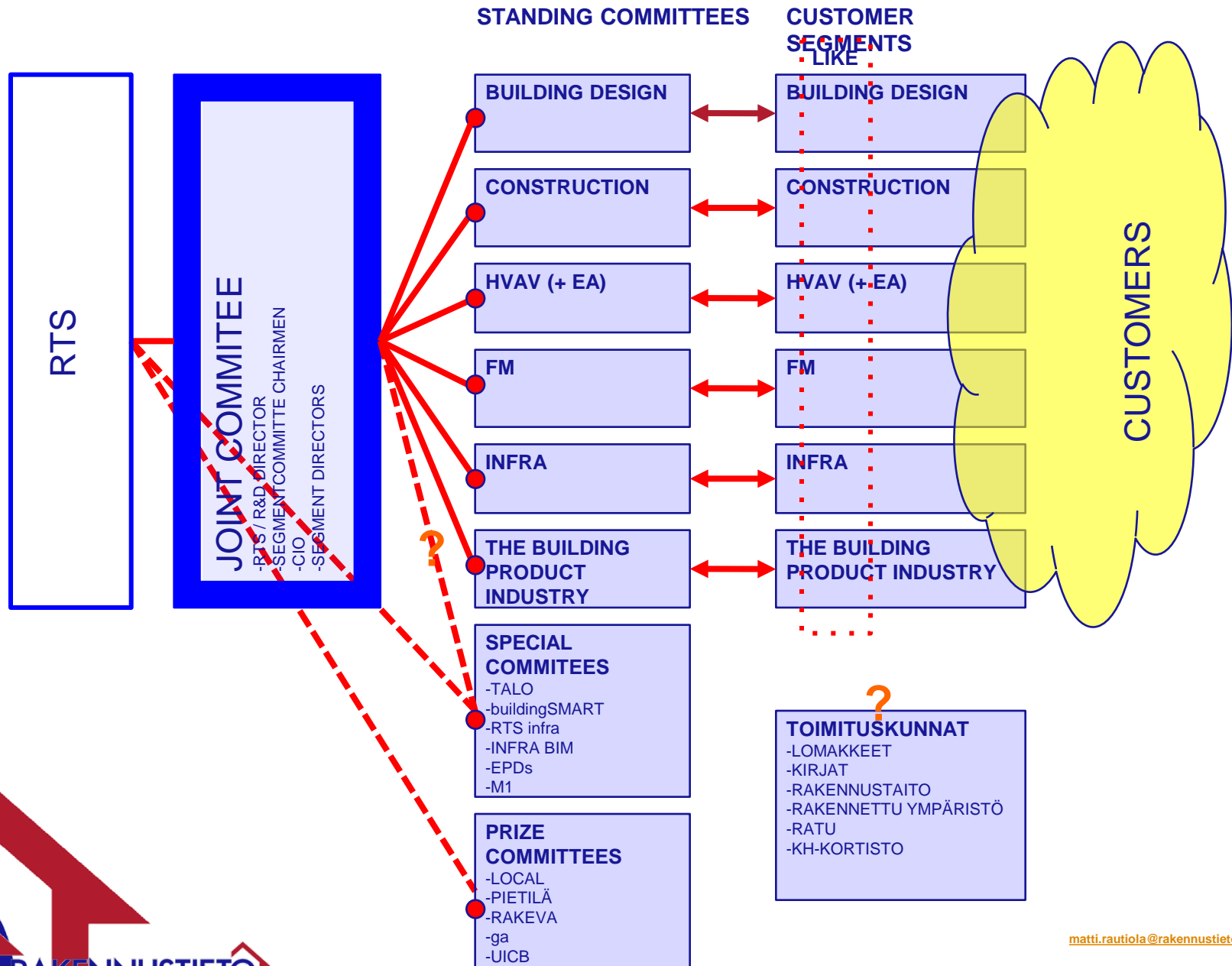
Building Information Group

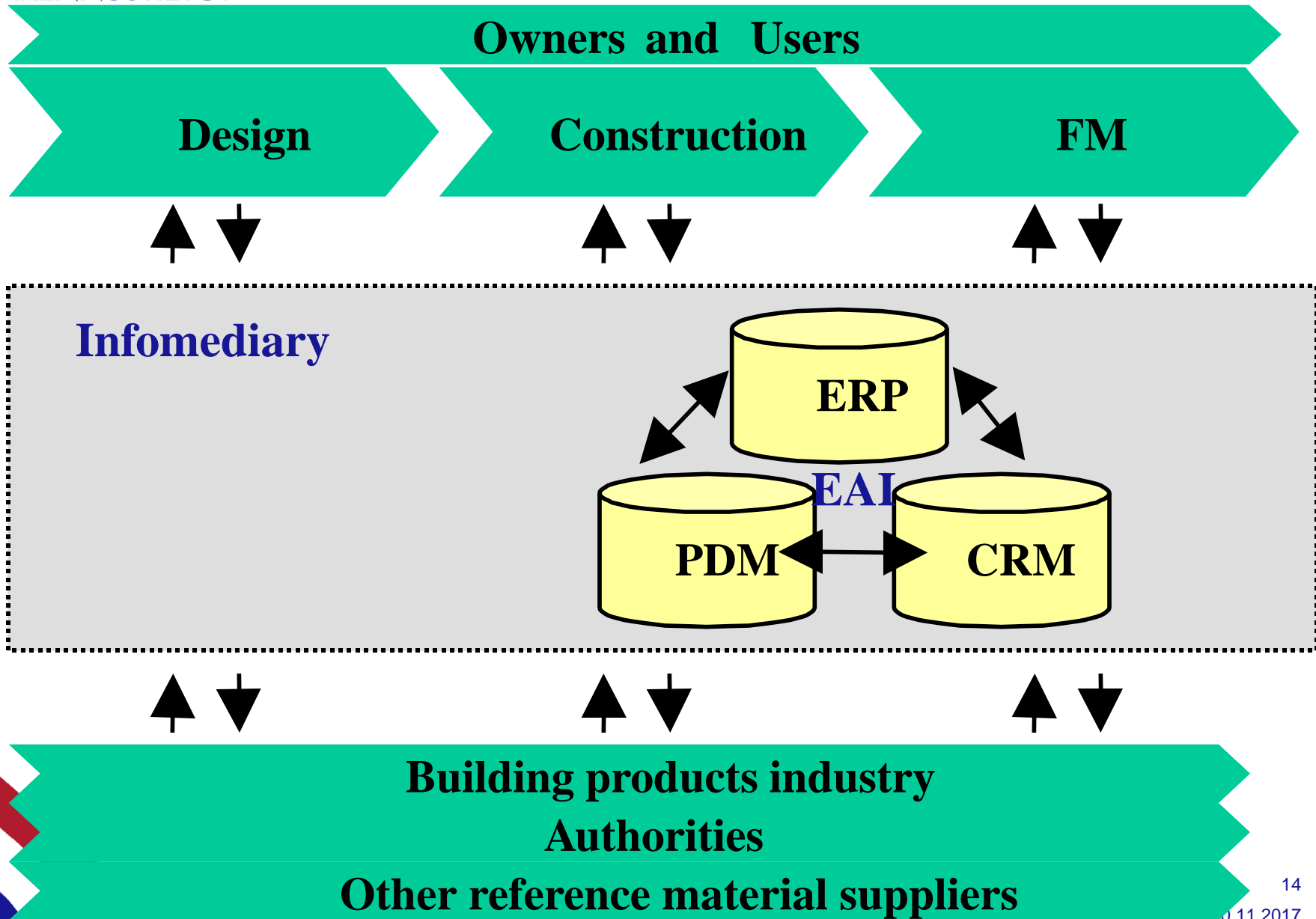
- Building Information Foundation RTS
 - Private foundation, Founded 1972 (-42, -32)
 - Not-for-profit, 49 members
 - Owner and R&D unit
 - Advisory panels, approx. 400 persons/year
- Building Information Ltd
 - 100 persons, 10 M €
 - Company is 100% owned by the Foundation
 - Five Building Centres in Finland
- Subsidiaries abroad
 - Tallinn (Estonia), St. Petersburg (Russia)
 - Independent local companies with local staff



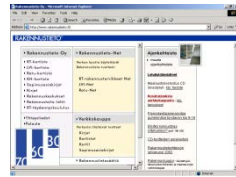
THE RAKENNUSTIETO CONCERN







User interface



Web pages



Printed matter
and CDs

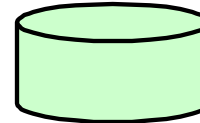


Computer
Apps

Function logic



Front server/database



Middleware / EAI



Distributed databases



Partners

Maintenance



Classification of Indoor Environment 2008.

Target Values, Design Guidance, and Product Requirements. (2010)

LVI

LVI 05-10440 en
LVI 05-10440
RT 07-10946
KH 27-00422
Ratu 437-T
SIT 05-610065

CLASSIFICATION OF INDOOR ENVIRONMENT 2008 Target Values, Design Guidance, and Product Requirements

Classification of Indoor Environment 2008 is intended for use in construction and building design and in associated contracting, as well as by the building materials industry, in striving for healthier and more comfortable buildings. The classification can be used for new constructions and, when applicable, also for renovation. Classification of Indoor Environment 2008 replaces Classification of Indoor Environment 2000.

STANDARDS FILE
 February 2010
 1 (24)
 replaces LVI 05-10318
 RT 07-10741
 RT 07-10790
 KH 27-00337
 Ratu 424-T

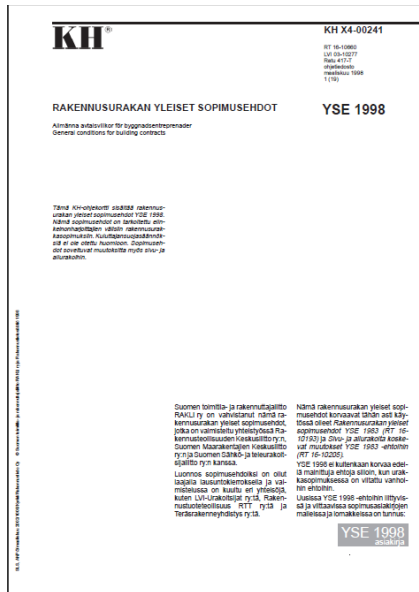
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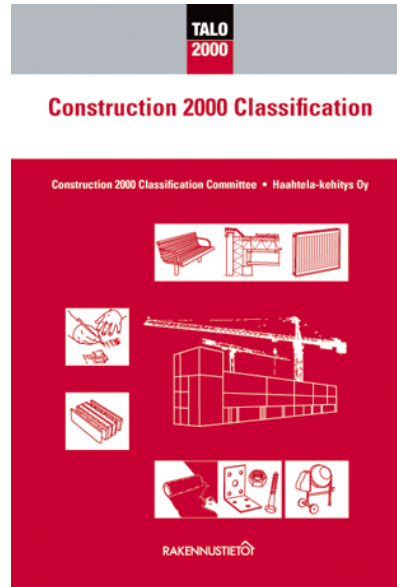
USE OF THE CLASSIFICATION

- 1 THE TARGET VALUES FOR INDOOR ENVIRONMENT (S)
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 - 1.2 Indoor environment categories
 - 1.3 Technical target values of the indoor environment during the use of the building
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 - 1.3.2 Thermal environment target values
 - 1.3.3 Target values for indoor air quality
 - 1.3.4 Target values for acoustic environment
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 - 3.1.3 Measurement methods
 - 3.2 Cleanliness classification of air-handling components
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 - 3.2.2 Cleanliness requirements for air-handling components
 - 4 REFERENCES





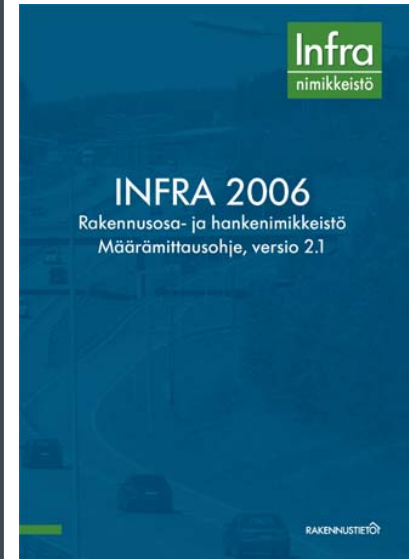
General
conditions
for building
contracts.
YSE 1998
document



TALO
Classi-
fication



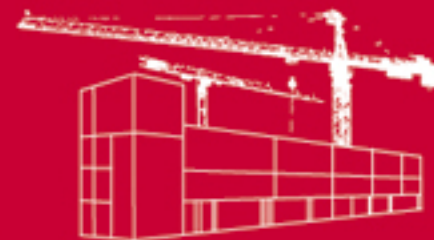
General
Quality
Guidelines +
Model
Specification



Guidelines
for Quantity
Takeoff

Construction 2000 Classification

Construction 2000 Classification Committee • Haahtela-kehitys Oy



RAKENNUSTIETO

The Building 2000 Project Classification covers construction elements, building services, structural elements of the former two, as well as project-related, property management and user tasks. In project accounting related to new construction or renovation, as well as in price determination, the classification also covers project provisions.

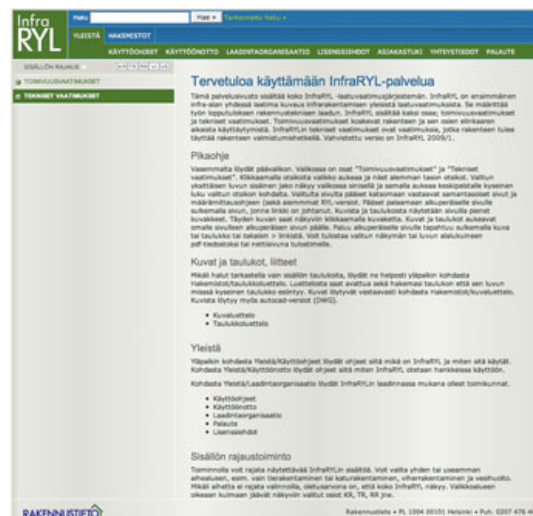
Construction elements are designed according to the Construction Works Classification. For that purpose, construction elements are divided into structural elements whenever several types of construction work are required to produce a single construction element. A structural element comprises one or more construction products as well as their installation and installation products. The classification is suggestive and should be applied after due deliberation on a case-by-case basis.

The principles of quantifying construction elements have been made independent of design and production solutions, and the measured quantities usually differ from output. Thus, for instance, an external wall assembly is always measured the same way and on the same bases. The different outputs required to build a construction element are determined as required by the design solution. For instance, if the external wall assembly includes masonry, the masonry can be considered part of the quantity of the external-wall construction element which is notified as an output.

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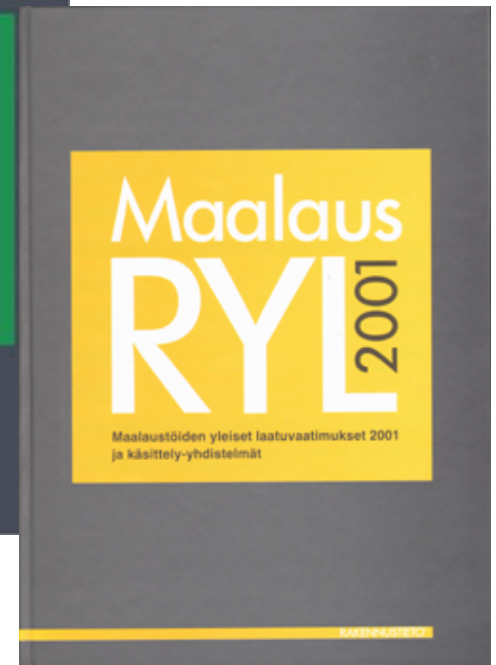
InfraRYL 2006 Code of Building Practice (general quality requirements) for Infrastructure.

- INFRA 2006 Classification. (2009)
- Infra 2006 Määrälaskentaohje, (Guidelines for Infra Quantity take off) v. 2.1 (2010)
- Part 1: Roads and areas, 624 p. (2006) 160 €
- Part 2: Systems and complementary parts, 253 p. (2009) 150€
- Part 3: Bridges and structural components, 278 p. (2008) 140 €
- Part 4: Exercise and outdoor recreational areas(2009) 120 €
- InfraRYL Net 854 € + 111,02 €/4 months



Construction

- RunkoRYL 2000, **Code of Building Practice. Building frame and external envelope** 434 p. (1998 /2010) 105 €
- MaaRYL 2000, **Code of Building Practice. Earthworks for Building Construction**, 270 p. (1997/2010) 76 €
- SisäRYL 2000, **Code of Building Practice. Internal finishes**, 416 p. (1998) 106 €
- MaalausRYL 2001, **General specifications and finishing systems for painting work**, , 366 p. 106 € (2001 / 2011)



Building Services, FM + O&M

- TalotekniikkaRYL 2002
Code of practice for building services,
Part1 ja Part 2, LVI 01-10355, LVI 01-
10356, 696 p. (2003 / 2012) 210 €
- KiinteistöRYL 2009
- **General Property Management Quality
Specification System 2009**, 176 p.
(2009) 150 €



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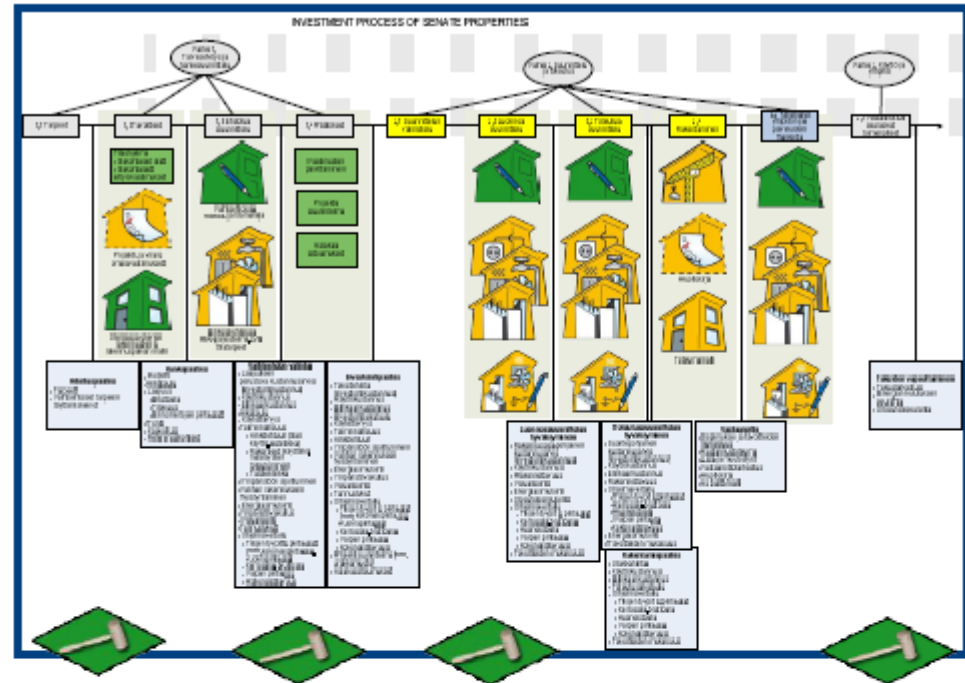
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4 REFERENCES

Approved by the Finnish Standards Association (SFS) in February 2010



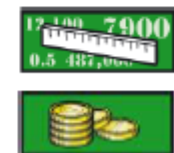
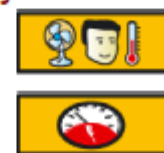
IFC compliant BIM is a mandatory requirement for architects after October 1st, 2007. Structural and MEP models are preferred but not mandatory in all projects.



Publication of models

Quality checking

Use of models in analysis and simulations



Focus areas: Scope, investment costs and lifecycle costs

BIM Guidelines, 9 volumes

