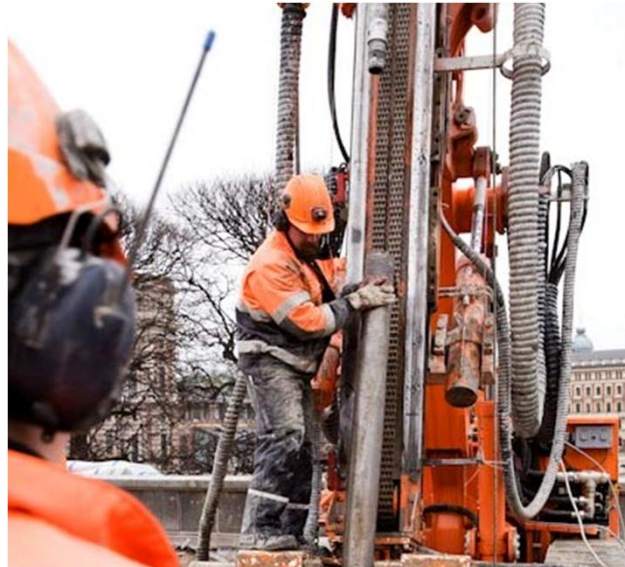


# CEN standardization on sustainability of construction works

ETSI 14-15 May 2012



**Pekka Vuorinen**  
Finnish Association of  
Construction Product Industries



# RT (CFCI) - joint interest organisation of building contractors, special contractors and the construction product industry - business and industrial affairs and labour markets

Confederation of Finnish Industries (EK)

**Confederation of Finnish Construction Industries RT**  
 More than 2,600 member companies with about 55,00 employees in total  
 Member turnover exceeds €15 billion.

House building	Product industry	Infrastructure	Surface	Technical constructing
General Contractors of Finland	The Finnish Association of Construction Product Industries RTT	Infra Contractors' Association	The Federation of Painting and Decorating Contractors in Finland The Finnish Roofing Association	Finnish Association of HPAC Technical Contractors
<b>319 member companies</b>	<b>123 member companies</b> Divisions and associations: <ul style="list-style-type: none"> <li>▪ Concrete industry</li> <li>▪ Wood products</li> <li>▪ Construction materials</li> <li>▪ Detached house industry</li> <li>▪ Constructional steelwork</li> <li>▪ Stone industry</li> </ul>	<b>1 572 member companies</b>	The Federation of Floor and Wall Covering Contractors The Finnish Association of Industrial Bricklayers  <b>353 member companies</b>	<b>281 member companies</b>



# Main tasks of RT and RTT

- Promotion of construction
    - New construction, renovation and infrastructure
  - Labour
  - Prevention of financial crime
  - **Construction steering**
    - Business legislation and contracts
    - Building regulations
    - Environment and energy
    - The role of RTT as standard writing body of SFS
      - responsible for 32 CEN TCs and 14 ISO TCs
        - CEN/TC350 “Sustainability of construction works”
        - CEN/TC351 “Assessment of release of dangerous substances”
  - Development of construction methods and practices
- 



# European framework on "sustainability"

- Energy Performance Building Directive (EPBD)
- EcoDesign Directive (energy **related** products)
- Energy Labelling Directive (energy related products)
- EcoLabelling Regulation
- EcoLabel for Buildings (first priority office buildings)
- Energy Efficiency Action Plan (2007-2012, 2013-2020)
- Green Public Procurement (GPP)
- Construction and Demolition Waste (Waste Framework Directive)
- Lead Market Initiative (on Sustainable Construction)
- Resource Efficiency Roadmap
  - EC (DG/Env) communication on Sustainable buildings (exp. 2013)
- **CPR → obligatory CE marking of CPs 1th July 2013**
  - New: BRCW 7 Sustainable use of natural resources



# Construction Product Regulation (CPR)

- Full applicability **1 July 2013**
- **Annex I Basic requirements for construction works (BRCW)**
- BRCW 3 Hygiene, health and the environment
  - The construction works must be designed and built in such a way that they will, **throughout their life cycle**, not be a threat to the hygiene or health and safety of workers, occupants or neighbours, nor have an exceedingly high impact, **over their entire life cycle**, on the environmental quality or on the climate during their construction, use and demolition...
- **BRCW 7 Sustainable use of natural resources (???)**
  - The construction works must be designed, built and demolished in such a way that the use of natural resources is sustainable and in particular ensure the following:
    - a) reuse or recyclability of the construction works, their materials and parts after demolition;
    - b) durability of the construction works;
    - c) use of environmentally compatible raw and secondary materials in the construction works



# Construction Product Regulation (CPR)

- In its recitals (non-binding);
  - 56) For the assessment of the sustainable use of resources and of the impact of construction works on the environment **Environmental Product Declarations** should be used when available
  - 57) Wherever possible, **uniform European methods** should be laid down for establishing compliance with the basic requirements set out in Annex I
- CPR includes a hidden and not yet clarified requirement to include environmental information (in form of an EPD?) into CE marking of a construction product
  - Harmonized methods → Prevention of technical trade barriers
- France has notified a regulation requiring environmental information (an EPD with 24 indicators), when a product is put on market in France (1st July 2013)



# Sustainable building – transparently and credibly

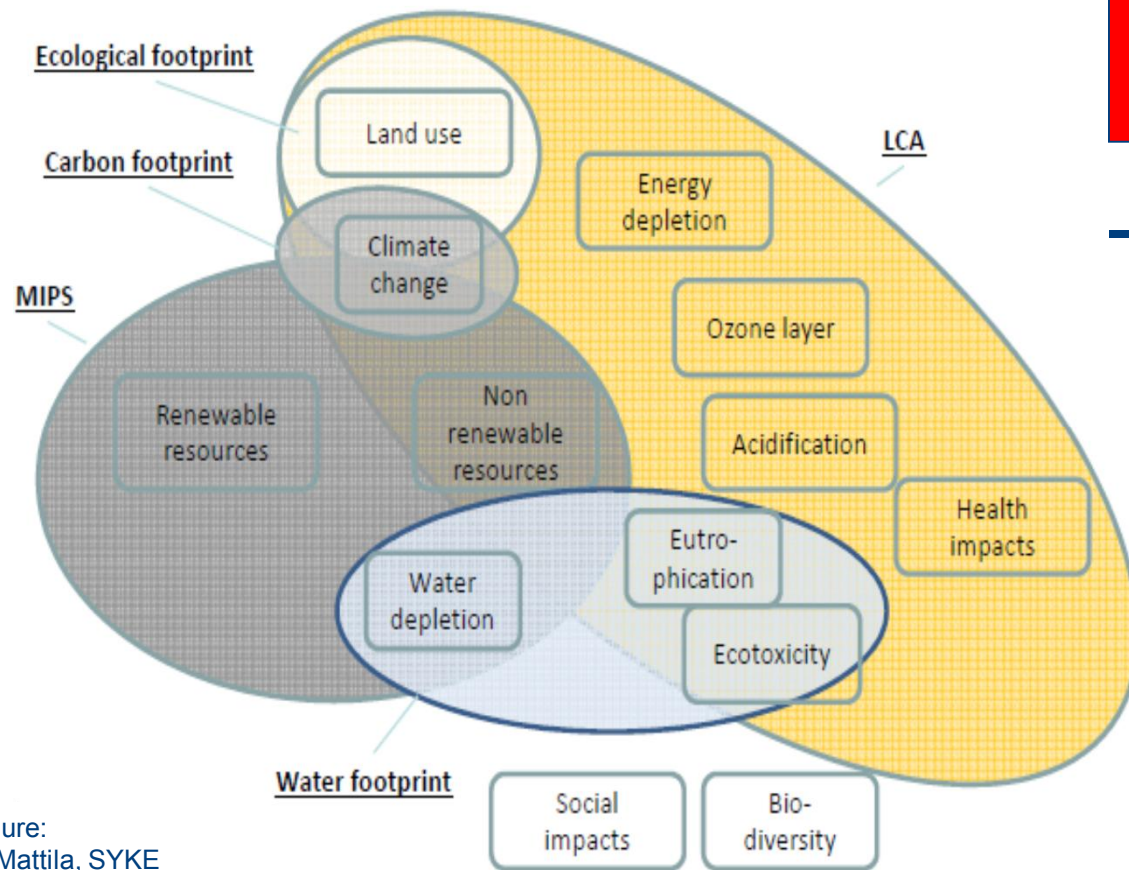


Figure:  
T. Mattila, SYKE

Environmental ratings  
of buildings

Benchmarking

Standardisation

Indicators for  
sustainable building  
Building level  
assessment

Environmental  
related data → EPDs  
(construction products)



## CEN/TC350 Sustainability of construction works

- **EC DG/Enterprise Mandate M/350**
- **European horizontal standards for the sustainability assessment of buildings → One system in Europe → harmonized approach**
- Sustainability assessment with the performance based approach in terms of:
  - Environmental performance (EC DG/Ent EPD-mandate M/350)
  - Social performance (enlarged scope)
  - Economic performance (enlarged scope)
- Life cycle approach with the quantitative indicators
- Taking into account also the wishes/needs of the relevant policies of the EC related to the Construction products
- Prevention of technical trade barriers, internal and international market (and linking harmonized EPD to the CE-marking)
- In accordance with the international framework of ISO standards





# CEN/TC350 standard package (2/2012)

## Framework (published!)

- EN 15643-1 Sustainability of construction works – **Sustainability assessment of buildings – Part 1: General framework**
- EN 15643-2 Sustainability of construction works – Assessment of buildings - **Part 2: Framework for the assessment of environmental performance**
- EN 15643-3 Sustainability of construction works – Assessment of buildings - **Part 3 Framework for the assessment of social performance**
- EN 15643-4 Sustainability of construction works – Assessment of buildings - **Part 4 Framework for the assessment of economic performance**

## Environmental package (published!)

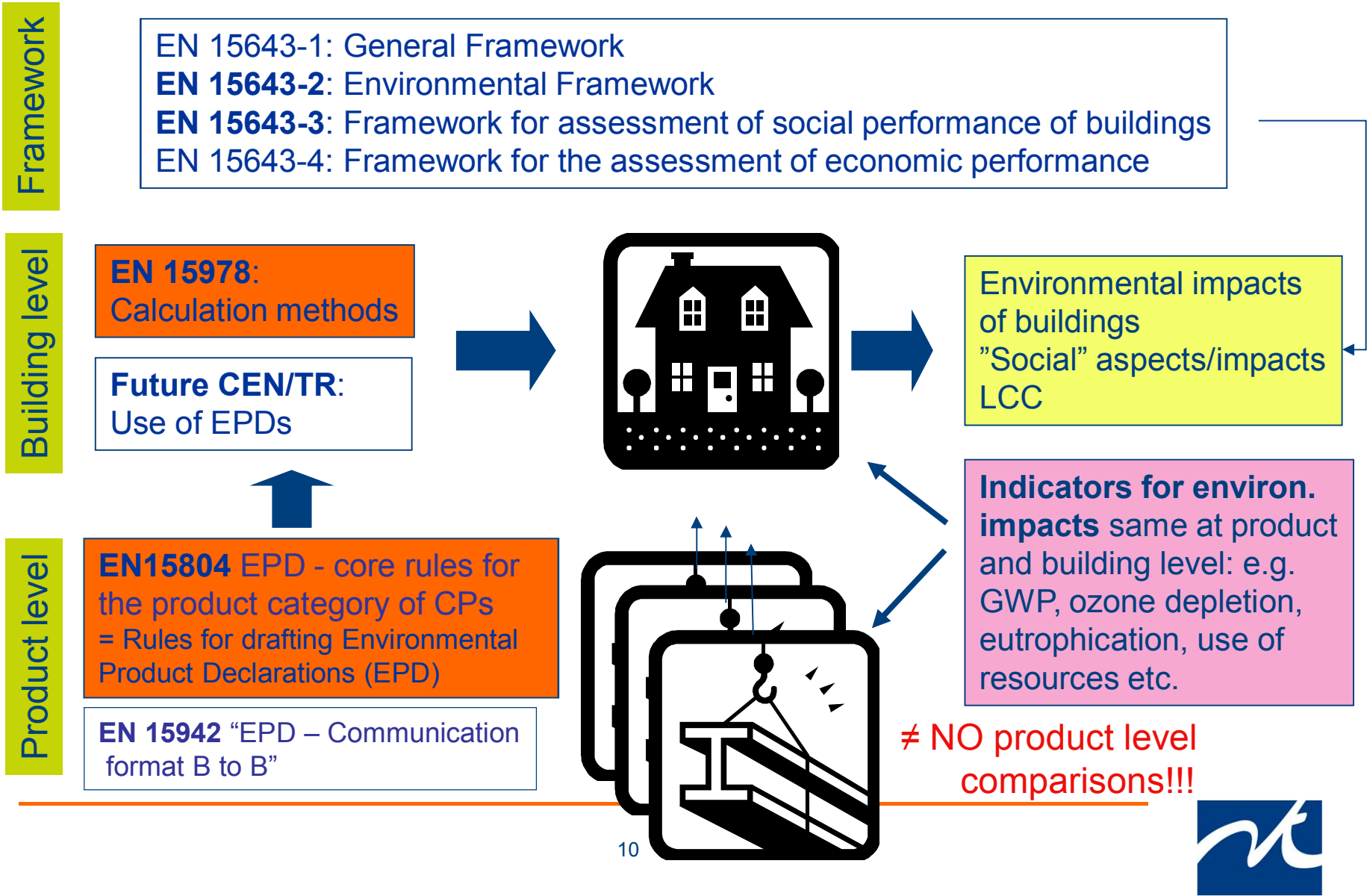
- EN 15978 Sustainability of construction works – **Assessment of environmental performance of buildings – Calculation method**
- EN 15804 Sustainability of construction works - Environmental product declarations - **Core rules for the product category of construction products**
- EN 15942 Sustainability of construction works - Environmental product declarations communication format – **Business to Business**
- CEN/TR 15941 Sustainability of construction works - **Environmental product declarations - Methodology for selection and use of generic data**

## Under development

- prEN 16309 Sustainability of construction works – **Assessment of social performance of buildings – Methods**
- WI Sustainability of construction works – **Assessment of economic performance of buildings – Methods**



# CEN/TC350 standard package



# Construction products are intermediate products

- The end use product is the building (works)



- ? one layer-two layer
- ? climate indoor-outdoor
- ? type of building
- ? building life time
- ? application
- ? maintenance scenario
- ? end-of-life scenario
- ?

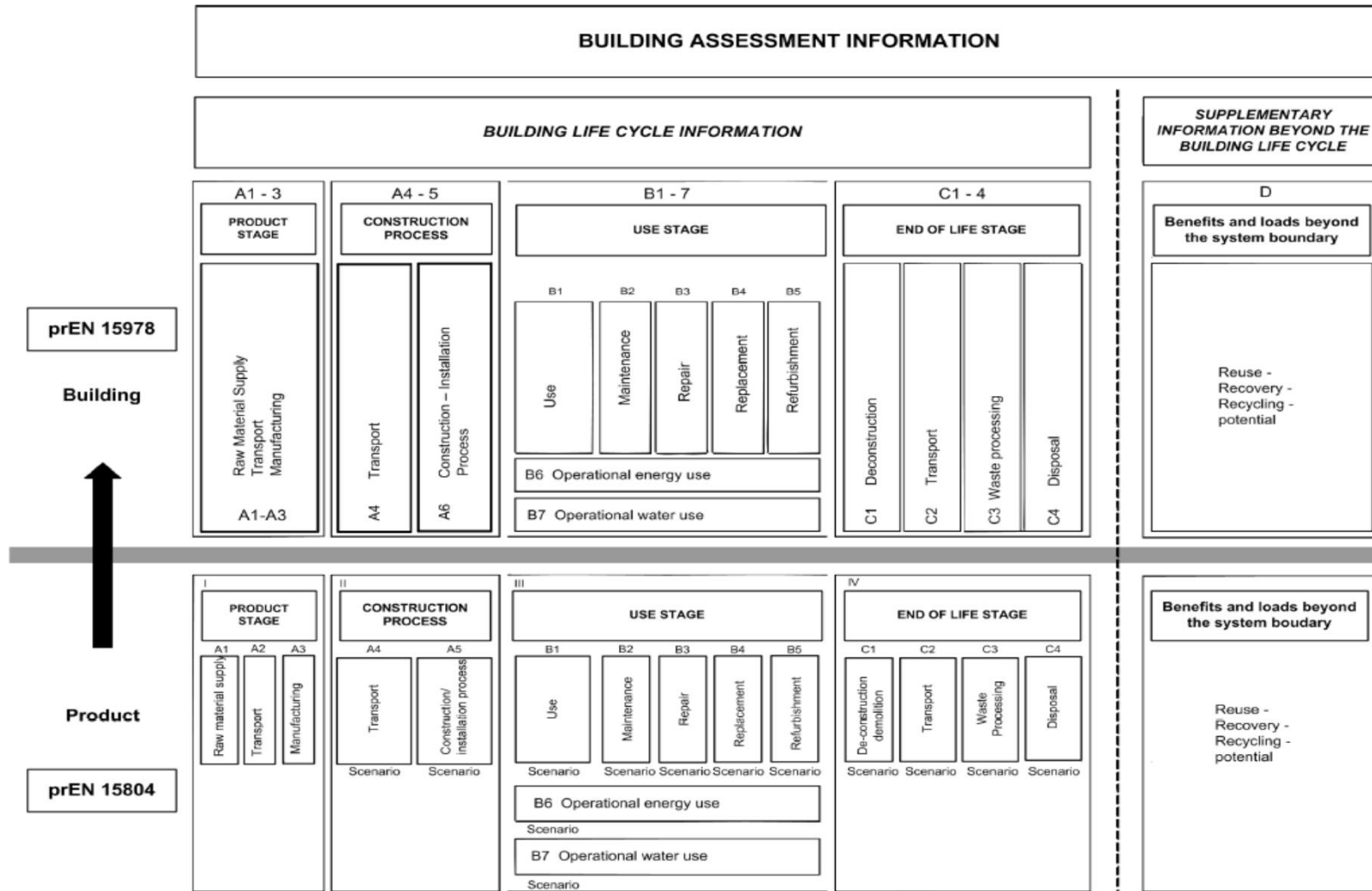
Product performance is defined in the building



**Concern: disrespecting the holistic/integrating approach**

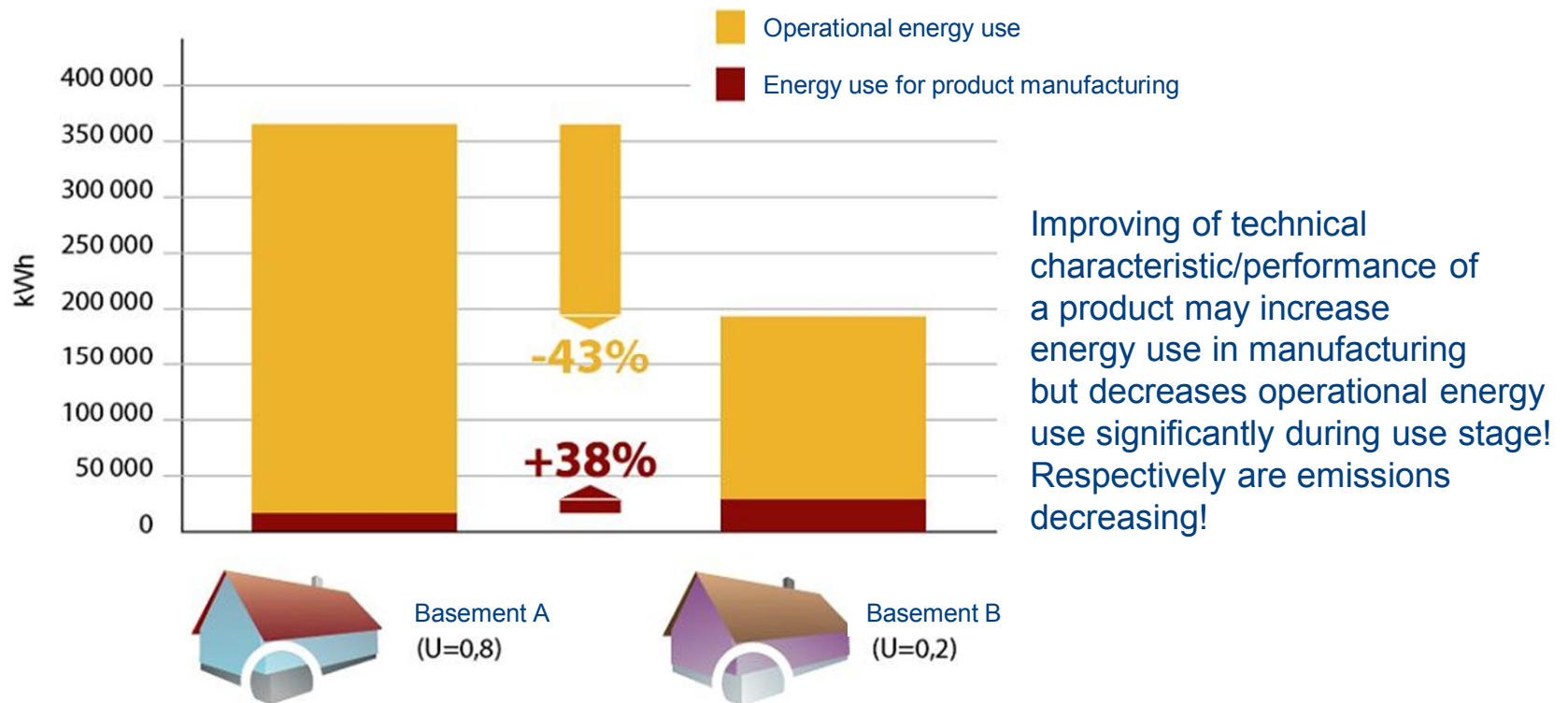


# The information modules applied in the assessment of environmental performance of a building from its life cycle stages



# Example of overall building assessment vs. product performance

## Total energy consumption, design life 60 years



Source: JOMAR - A Model for Accounting the Environmental Loads from Building Constructions, StØ 2007

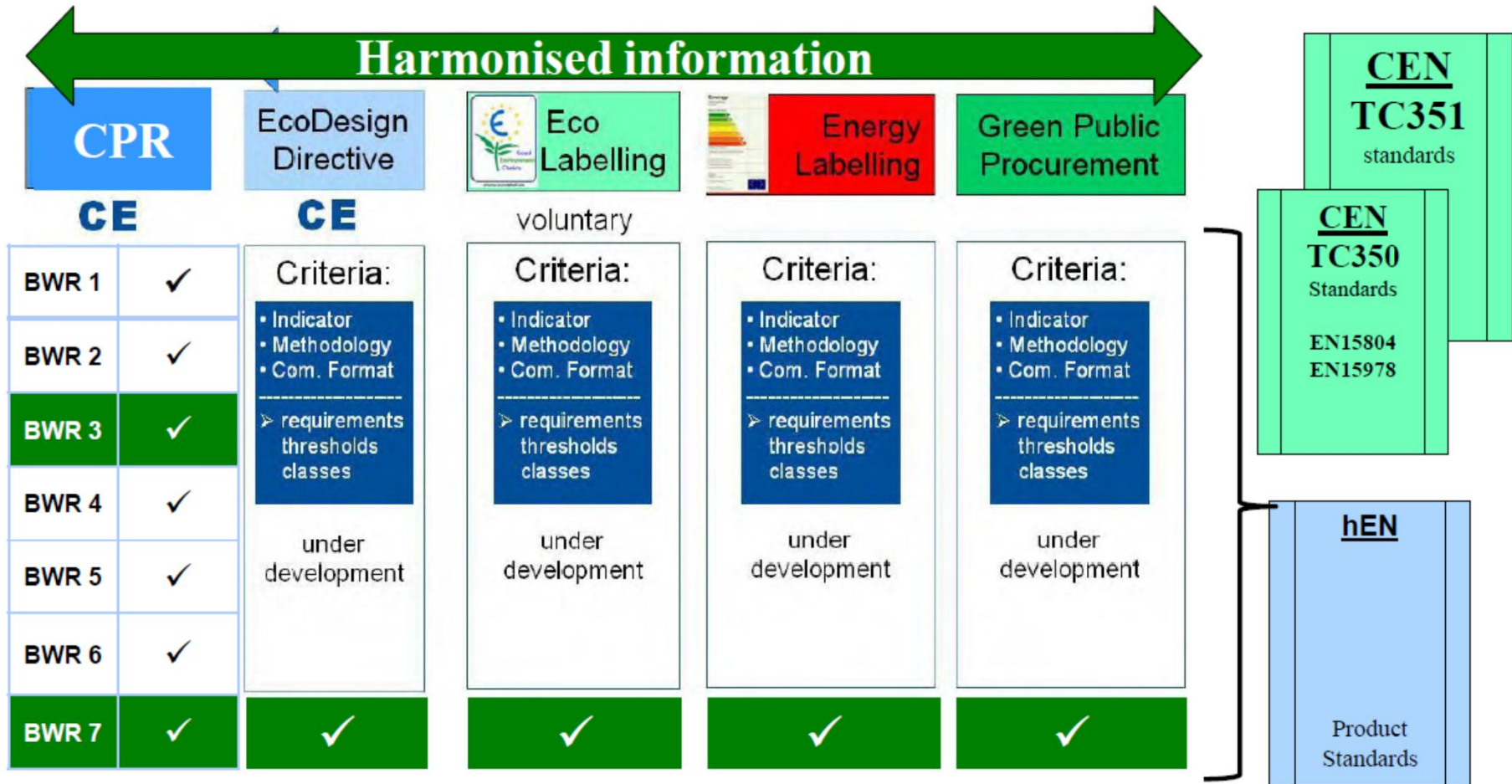


# EN 15804: 22 environmental standardised indicators!

1. Global Warming
2. Ozone Depletion
3. Acidification for soil and water
4. Eutrophication
5. Photochemical ozone creation
6. Depletion of abiotic resources - elements
7. Depletion of abiotic resources - fossil fuels
8. Use of renewable primary energy excluding renewable primary energy resources used as raw materials
9. Use of renewable primary energy resources used as raw materials
10. Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials
11. Use of non renewable primary energy resources used as raw materials
12. Use of secondary material
13. Use of renewable secondary fuels
14. Use of non renewable secondary fuels
15. Use of net fresh water
16. Hazardous waste disposed
17. Non hazardous waste disposed
18. Radioactive waste disposed
19. Components for re-use
20. Materials for recycling
21. Materials for energy recovery
22. Exported energy



# Consistent, coherent and single assessment needed!



# CEN/TC350 on Eco design directive

- The environmental standards for sustainable construction with the **horizontal methodology and standardized environmental indicators developed by CEN/TC350 under the horizontal standardization mandate M/350** CEN should take into account existing EN standards and the mandated drafts under development when giving responses to the new mandates.
- In the case of construction products and their possible relation to Ecodesign Directive this specifically should mean a clear **recognition of the above-mentioned CEN/TC350 standards as an existing horizontal European system for construction products and avoidance of “double work”**
- Consequently, **the horizontal EN-standardized methodology and indicators for the assessment of environmental performance of construction products aiming at the level of the construction works with the performance based approach** developed by CEN/TC350 is the only way to have a trade barrier free EU Internal market for construction products also in the field of the environmental requirements





# CEN/TC350/WG6 "Civil engineering works"

- In the last Plenary of CEN/TC 350 (Nov 2011) a new WG on civil engineering works (CEN/TC 350/WG 6) was created with the aim to include civil engineering works in CEN/TC 350 work programme, which has so far mainly focused on buildings.
  - Convenor Antonio Burgueno, secr. AENOR (Spain)
- first task of CEN/TC 350/ WG6 is to analyse the published standards and the ongoing works, in order to make recommendation on the cooperation between CEN/TC 350 and ISO/ TC 59/ SC 17 (WG5)
  - ISO/DIS 21929-2 “Sustainability in buildings and civil engineering works - Sustainability indicators - Part 2: Framework for the development of indicators for civil engineering works



# CEN/TC350/WG6 "Civil engineering works"

- 1<sup>st</sup> meeting of WG6 (March 2012): recommendations
  - application of Vienna agreement
  - the assessment of sustainable performance of civil engineering works will not include additional new indicator in terms of product (EPD). Consequently, the EPDs established by the Standards ISO 21930 and **EN 15804** will also be suitable for civil engineering works, with no changes at all.
  - Ask TC to launch a ballot concerning the Lead of Vienna Agreement





Thank you!

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