EMO EUROPEAN MORTAR INDUSTRY ORGANISATION

PE INTERNATIONAL SUSTAINABILITY PERFORMANCE

Build the Future with Mortar

Environmental Product Declarations – an important tool to keep the future

2nd European Mortar Summit

7th June 2013 · Barcelona, Spain

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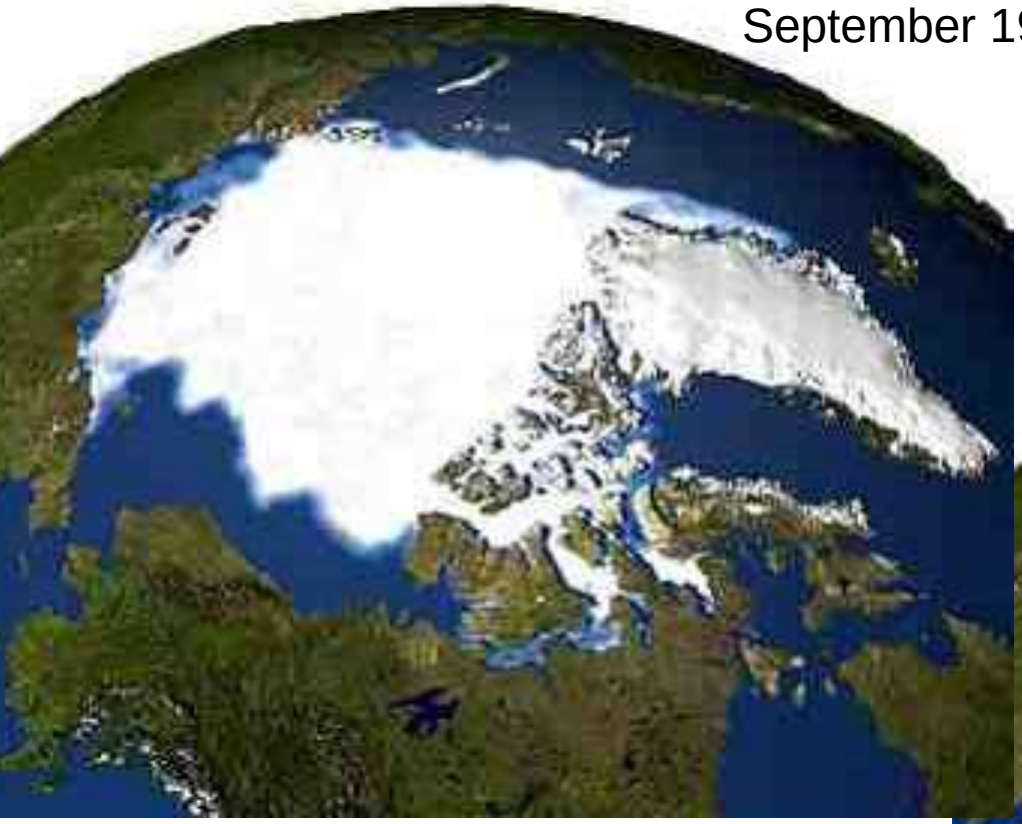
Agenda

1. Sustainability
2. Legal requirements in Europe
3. Sustainability trends in the construction sector
4. Environmental Product Declarations
5. Summary und Discussion

Melting of the polar ice caps

September 1979



September 2005

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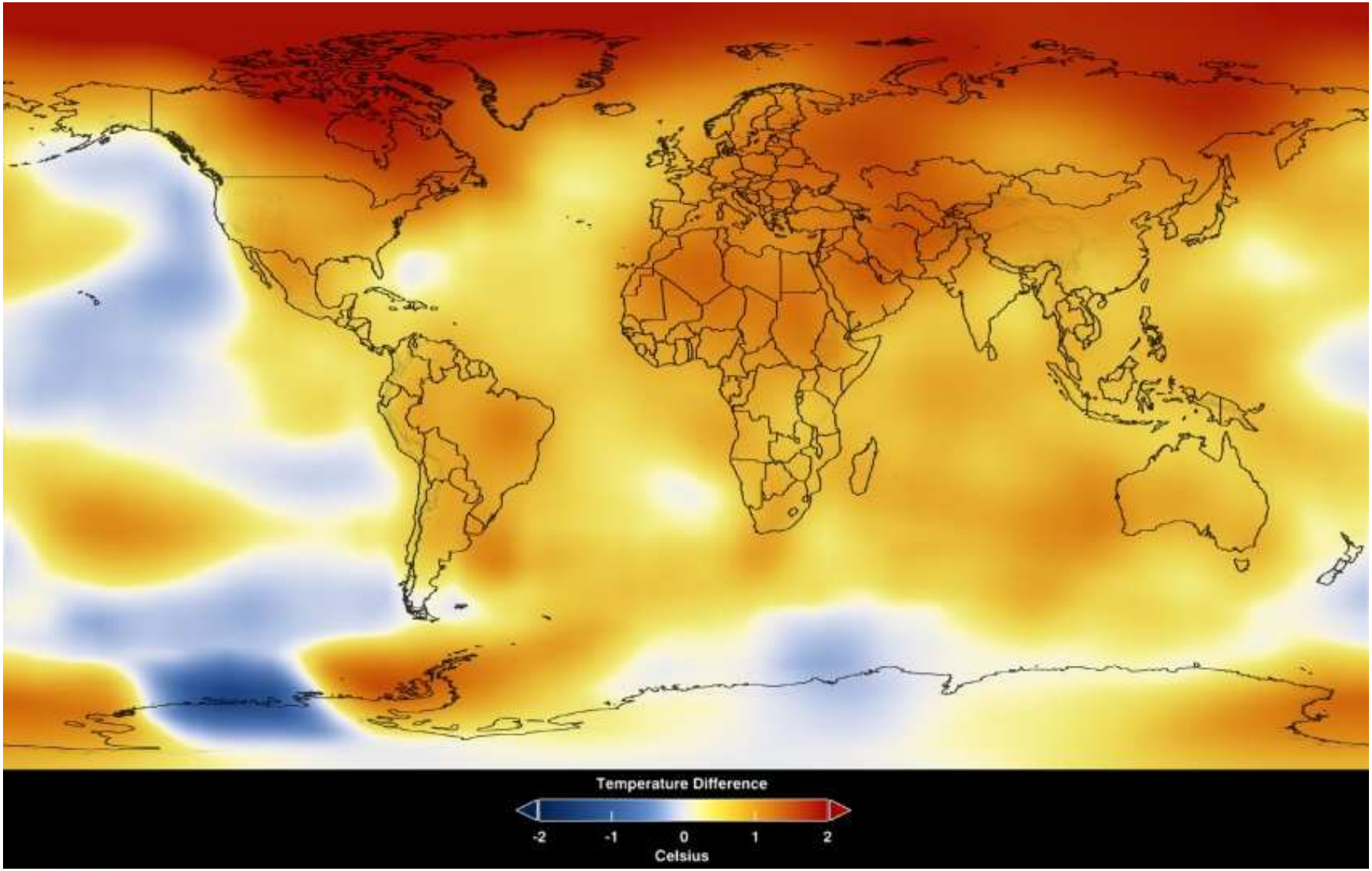
Surface temperature changes of the earth



How do we want to live?

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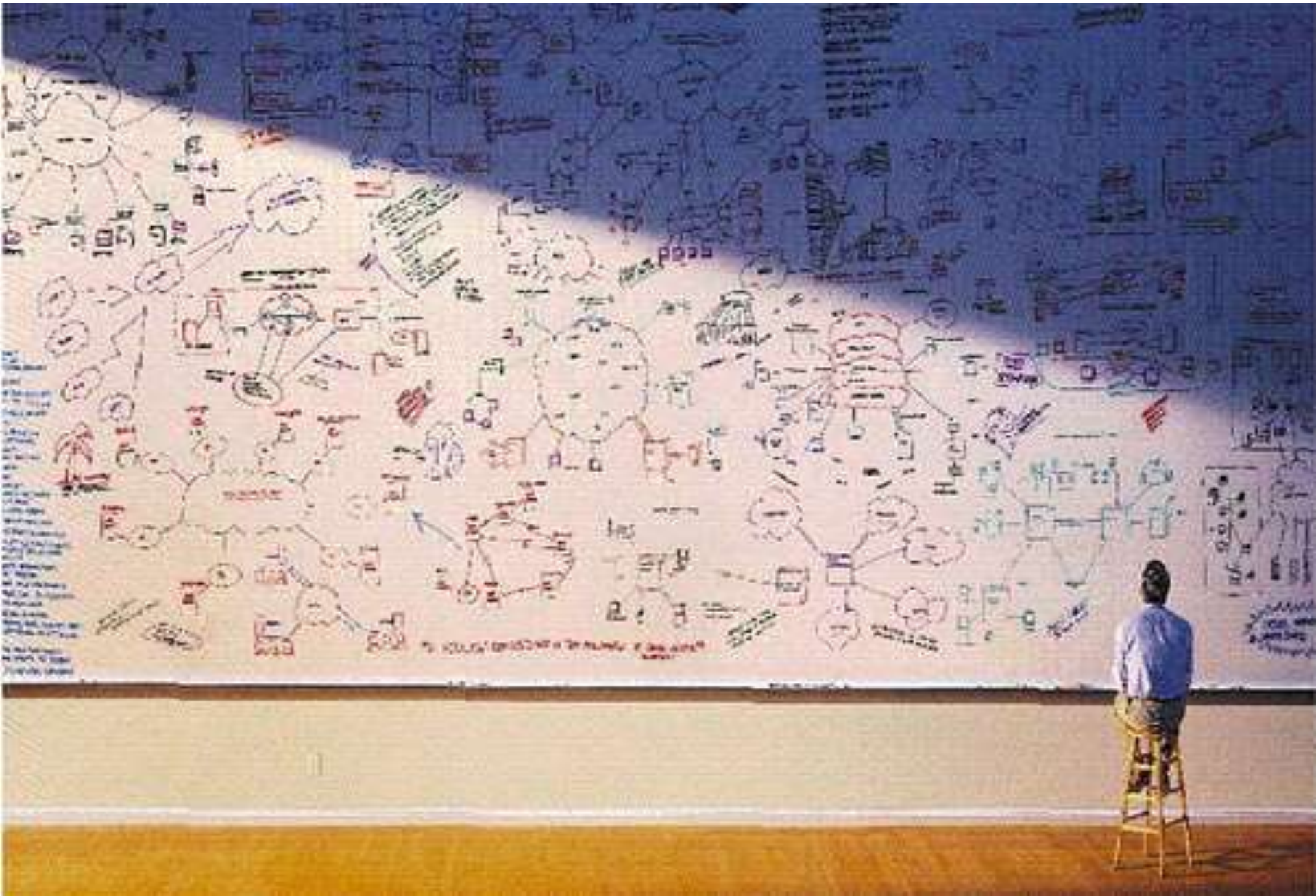
How do we want to live?

How do we want to live?

… and what are the consequences …. for the future

Which concept do we need for the future?

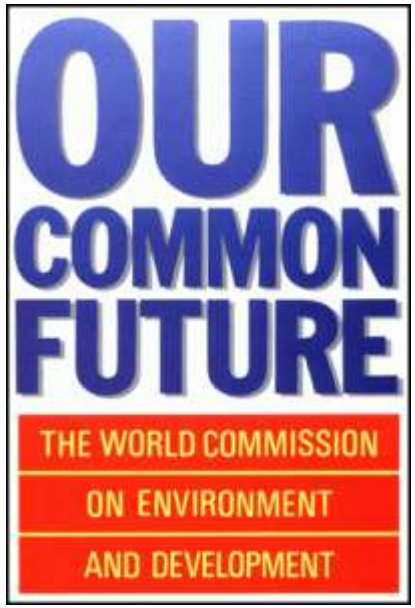


What can we say about the future?

Brundlandt Definition

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

UN Brundtland Report (1987)



Sustainability in Building and Construction

People

CSR, employment, share of women, health and safety of employees

Construction worker‘s health, noise, quality ensurance

Health & comfort of occupants, flexibility, maintenance

Planet

Emissions air, water, soil

Resource consumption of materials, land

Noise, dust: impacts through on site processes, noise, dust, area

Impacts of disposal

Profit

Costs of construction and planning

Operational costs and energy efficiency

Building performance on workers, machines, processes

Flexibility of building

Developments in Europe

- EU aims for integrated life-cycle-oriented approaches in the building sector
- Standards to introduce life cycle assessments for buildings and products are released (EN 15804 and EN 15978)
- Information requirements on climate change and resource management become legally binding through Construction Products Regulation (CPR)

Trends in the construction sector

Trend Nr. 1:

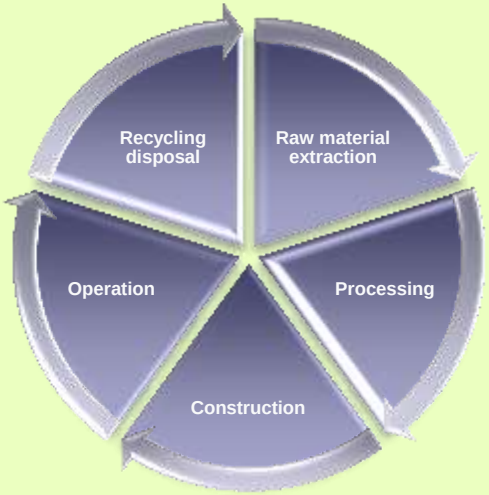
Sustainablility drives growth

Building owner understand value of Green Building Rating certificates
⇨ compliance with future requirements

Trend Nr. 2:

Holistic approach minimises risks

Life cycle approaches become integral part of assessments



Trend Nr. 3:

Informed customer

Customer asks for reliable environmental information for products he wants to buy
The CPR does so as well !

Requirements from building certification

DGNB pre-certificate / LEED „Core and Shell Development“

- Focus on Ecodesign of the complete building
- No evidence of life cycle based criteria is required / possible

DGNB certificate / LEED New Construction

- Certification as build ⇨ Evidence is required on product level

EPDs, LCAs, and PCRs

Decoding the Acronyms

The Guidelines

Product Category Rule (PCR)

"Set of specific rules, requirements, and guidelines for developing Type III environmental product declarations for one or more product categories" (ISO 14025)

The Analysis

Life Cycle Assessment (LCA)

"Compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle" (ISO 14040)

The Declaration

Environmental Product Declaration (EPD)

"Providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information" (ISO 14025)

EPD Development Process

1. Search for and evaluate existing PCRs, if necessary, create a new PCR
2. Select type of EPD
3. Conduct an LCA
4. Create the EPD
5. Register the EPD with a program operator
6. Verification that the EPD follows PCR

Types of EPDs

Depending on the declared unit and EPD holder

- Individual product EPD
  ⇨ for companies, one or several sites

- Average product EPD
  ⇨ for associations, shall represent industry average

- Generic EPD template
  ⇨ for associations , typical product EPD serves as a template
  ⇨ could be combined with a classification scheme, where the “worst case” of each class is declared

Grouping of the mortar products for EPD templates

Masonry mortar

- Standard mortar
- Lightweight mortar
- Special mortar (facing masonry)
- Special mortar (thinbed mortar)

Floor screeds:

- Cement screed
- Anhydride screed

Rendering / plastering mortars:

- Standard finishing plaster
- Standard finishing plaster with special properties
- Lightweight plaster
- Reinforcement plaster
- EPS-Insulation plaster

System boundaries

- Declared unit:1 kg mortar
- Included life cycle stages:
  - Production (A1-A3)
  - Erection of the building (A4 und A5)
  - Use stage (B1)
  - End of life / landfill (C4)
  - Benefits and burdens from recycling. (D)

Produktionsstadium			Stadium der Errichtung des Bauwerks		Nutzungsstadium							Entsorgungsstadium				Gutschriften und Lasten außerhalb der Systemgrenze
Rohstoffversorgung	Transport	Herstellung	Transport zur Baustelle	Einbau ins Gebäude	Nutzung / Anwendung	Instandhaltung	Reparatur	Ersatz[1]	Erneuerung[1]	Energieeinsatz für das Betreiben des Gebäudes	Wassereinsatz für das Betreiben des Gebäudes	Rückbau / Abriss	Transport	Abfallbehandlung	Deponierung	Wiederverwendungs-, Rückgewinnungs- oder Recyclingpotenzial
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D

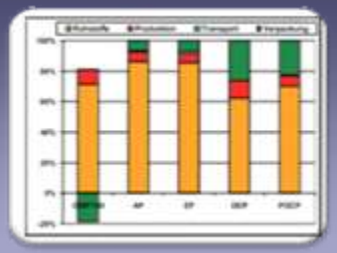

What’s important in the future?

What‘s important to keep in mind?

Sustainable Building Certificates

- DGNB, BREEAM, LEED ask life cycle information
- In some sectors they are already Standard“
- Investors and the finance industry are driving the market

Certificate



LCA

- Basis for sustainable building certification
- Producer know their data
- Planer needs input for building-LCA tools

LCA

Reliable information

- EPDs are based on LCA
- **A common approach for the mortar industry using EPD templates would be beneficial**

EPD

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