

European Horizontal Standardized Methods for the Assessment of the Sustainability Aspects of Construction Works

Ari Ilomaki and Thomas Lützkendorf



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Global Alliance
for Buildings and
Construction

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Introduction & background

- Needs for setting requirements in regulations for different sustainability aspects is growing
- Common standardized assessment rules to prevent formation of technical trade barriers
- European standardization organization CEN Technical Committee, CEN/TC350, by the request of European Commission



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Structure and targets

- CEN/TC 350 standards enable sustainability aspects to be taken into account in the decision making without creating trade barriers
- Main conditions: assessment with the
 - LIFE CYCLE APPROACH
 - PERFORMANCE BASED APPROACH
- Assessment and target setting in a transparent and equal way for all three pillars of sustainability



<https://pixabay.com/de/dart-spiel-bull-s-eye-ziel-155726/>



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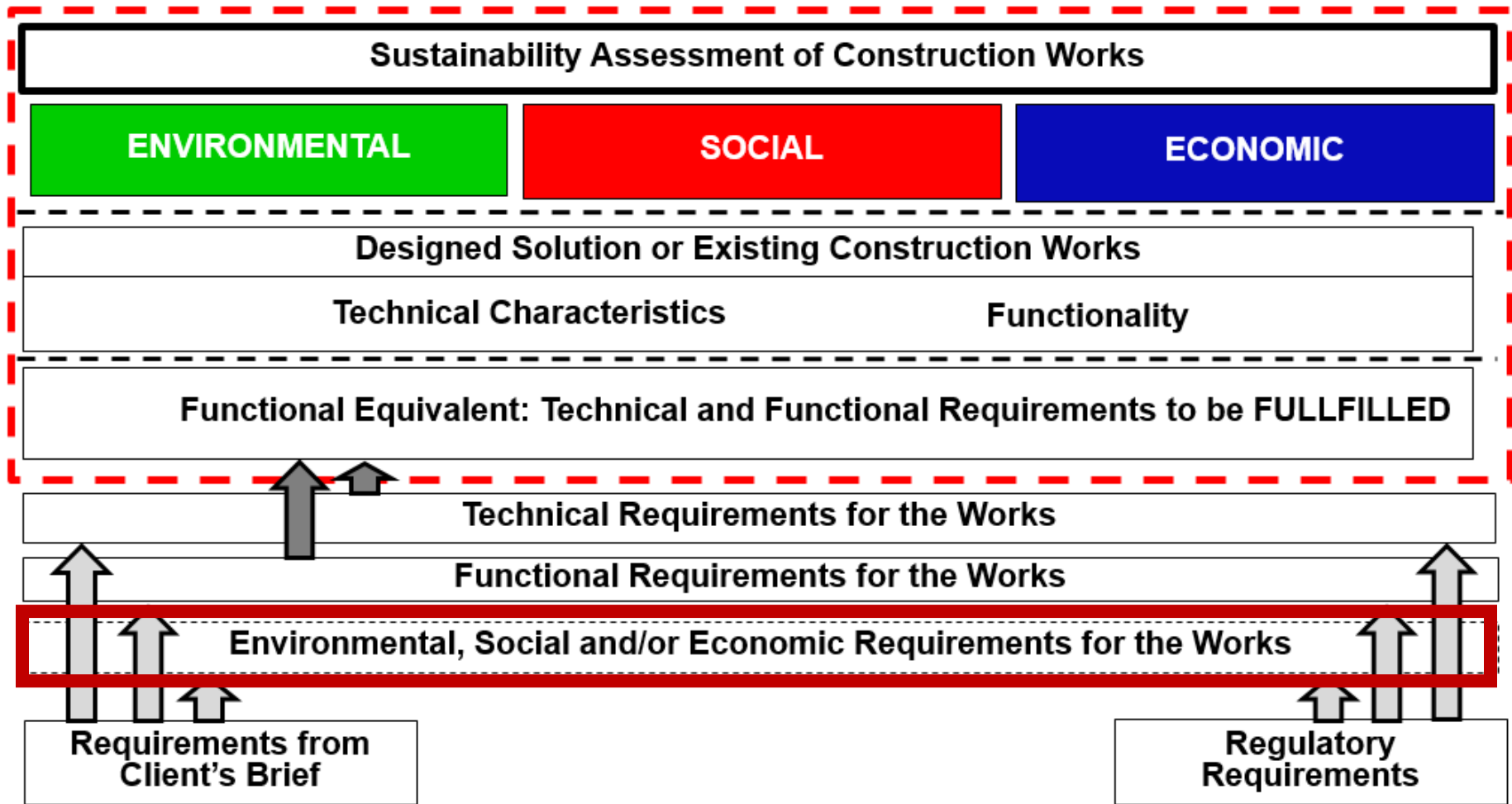


Structure of CEN TC 350

Framework level	EN 15643-1 Sustainability Assessment of Buildings - General Framework [1]			Technical Characteristics	Functionality
	EN 15643-2 Framework for Environmental Performance of Buildings [2]	EN 15643-3 Framework for Social Performance of Buildings [3]	EN 15643-4 Framework for Economic Performance of Buildings [4]		
	prEN 15643-5 Framework for Sustainability Assessment of Civil Engineering Works [5]			Service Life Planning – General Principles (ISO 15686-1) [15]	
Works level	EN 15978 Environmental Performance of Buildings [6]	EN 16309 Social Performance of Buildings [7]	EN 16627 Economic Performance of Buildings [8]	EN ISO 52000 Standard Series on Energy Performance of Buildings [16]	
	prWI028 Sustainability Assessment of Civil Engineering Works [9]				
Product level	EN 15804 Environmental Product Declarations [10]	(see Note below)	(see Note below)	Service Life Prediction (ISO 15686-2) [17], Feedback from Practice (ISO 15686-7) [18], Reference Service Life (ISO 15686-8) [19]	
	CEN/TR 16790 Guid. to EN 15804 [11]	<p>Note: At present, technical information related to some aspects of social and economic performance are included under the provisions of EN 15804 to form part of EPD</p>			
	EN 15942 Comm. Form. B-to-B [12]				
	CEN/TR 15941 [13]				
	CEN/TR 17005 [14]				



Integration of additional requirements



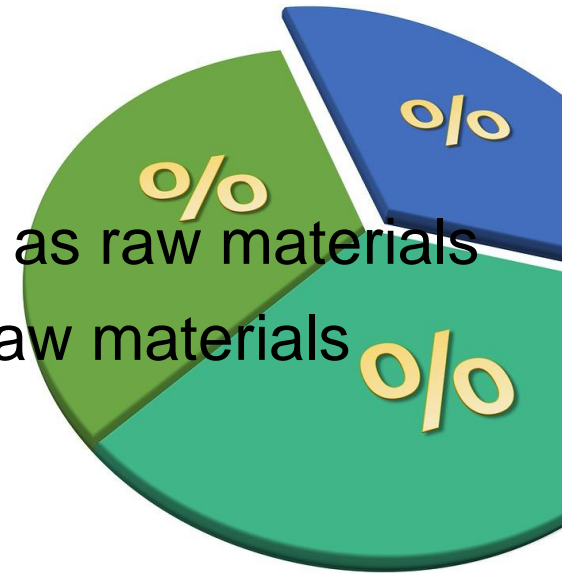
Indicators for environmental impacts

- Global warming potential
- Destruction of stratospheric ozone layer
- Acidification of land and water resources
- Eutrophication
- Formation of ground level ozone
- Abiotic depletion potential (fossil fuels)
- Abiotic depletion potential (elements)



Indicators for use of resources

- Use of non-renewable primary energy
- Use of renewable primary energy
- Use of non-ren. prim.energy resources used as raw materials
- Use of ren. prim.energy resources used as raw materials
- Use of secondary materials
- Use of non-renewable secondary fuels
- Use of renewable secondary fuels
- Net use of freshwater resources

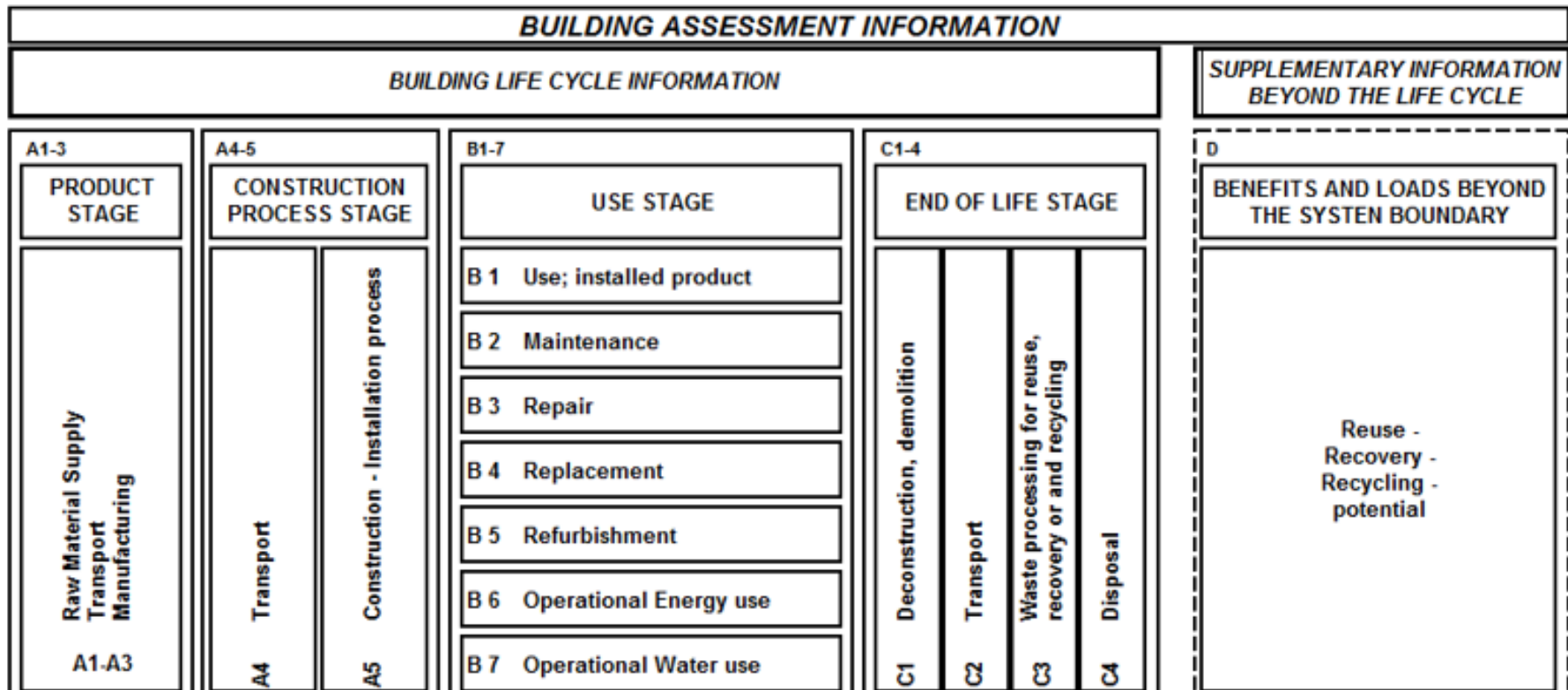


Indicators for other envir. information

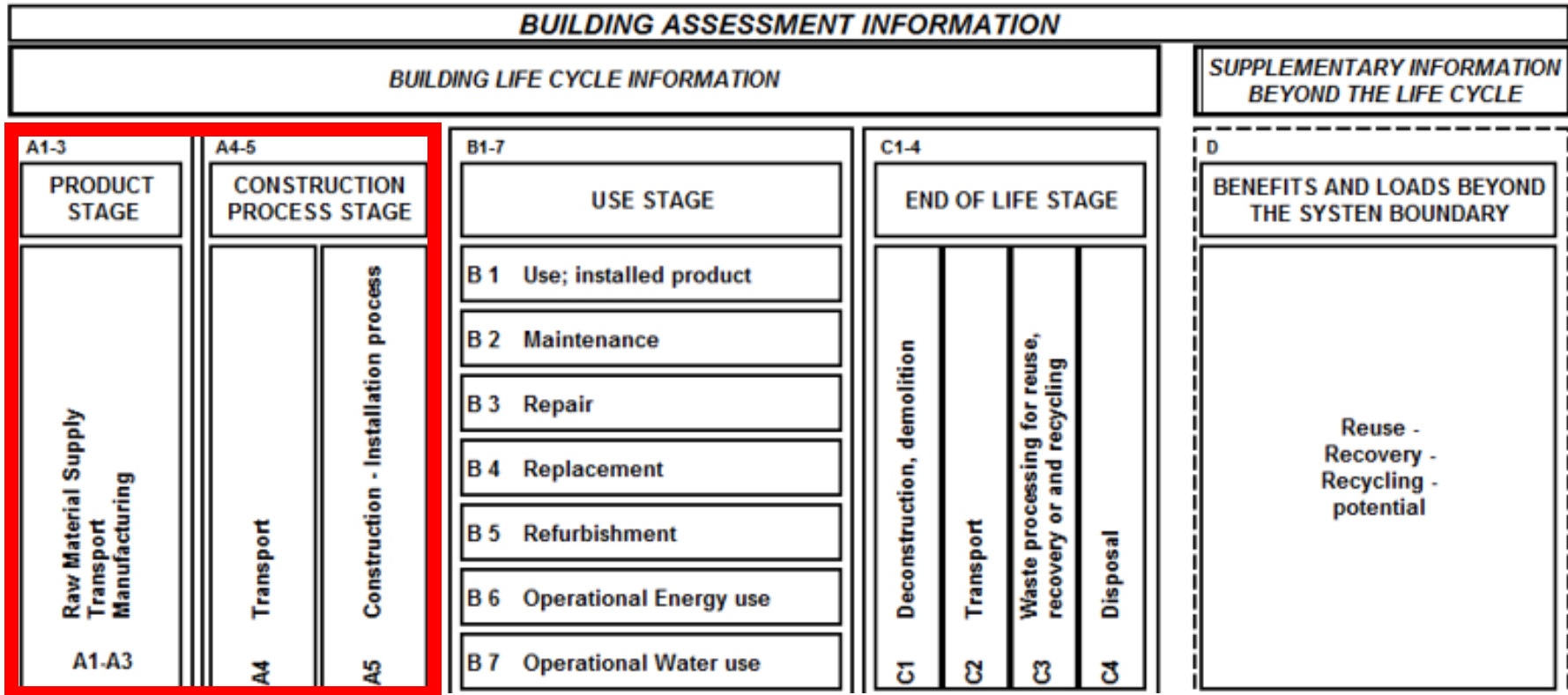
- Components for re-use
- Materials for recycling
- Materials for energy recovery
- Non-hazardous waste to disposal
- Hazardous waste to disposal
- Radioactive waste to disposal
- Exported energy



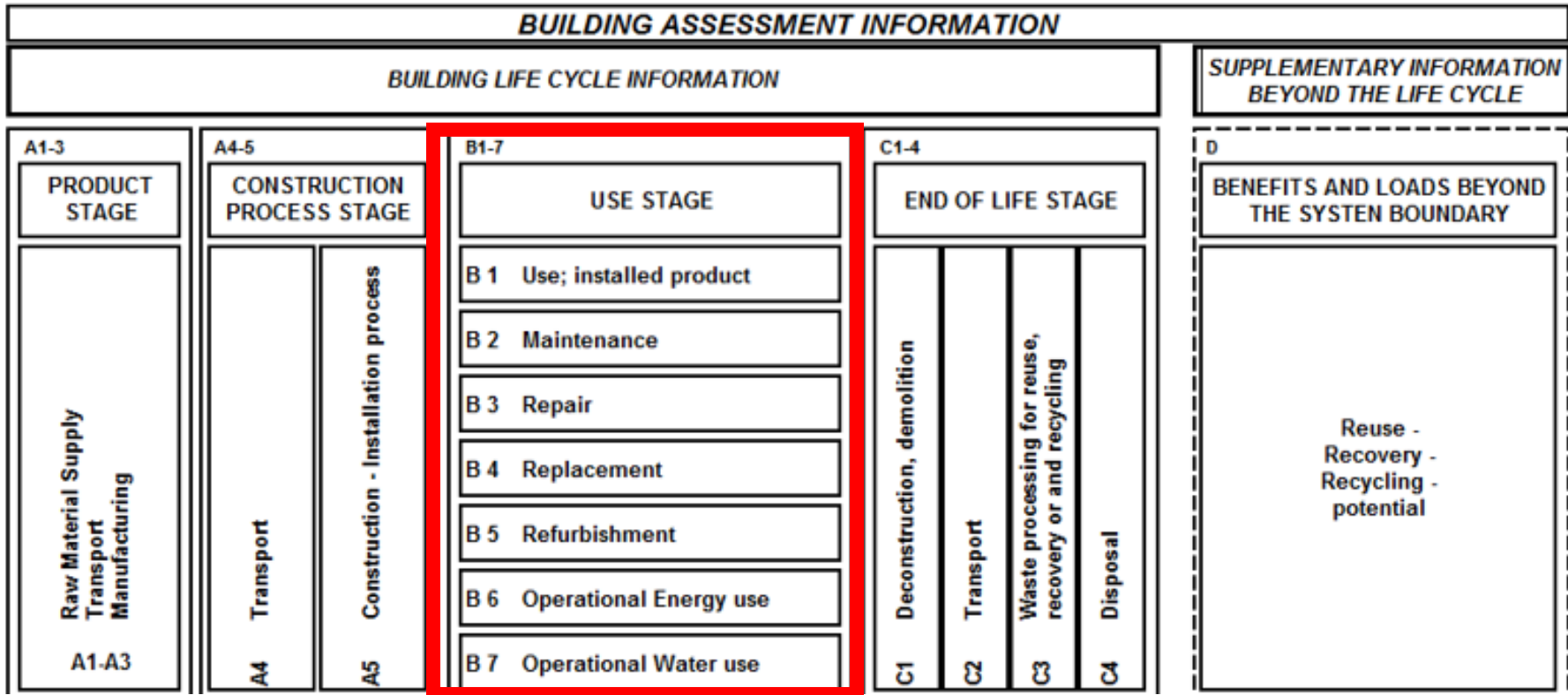
Building level – the modules



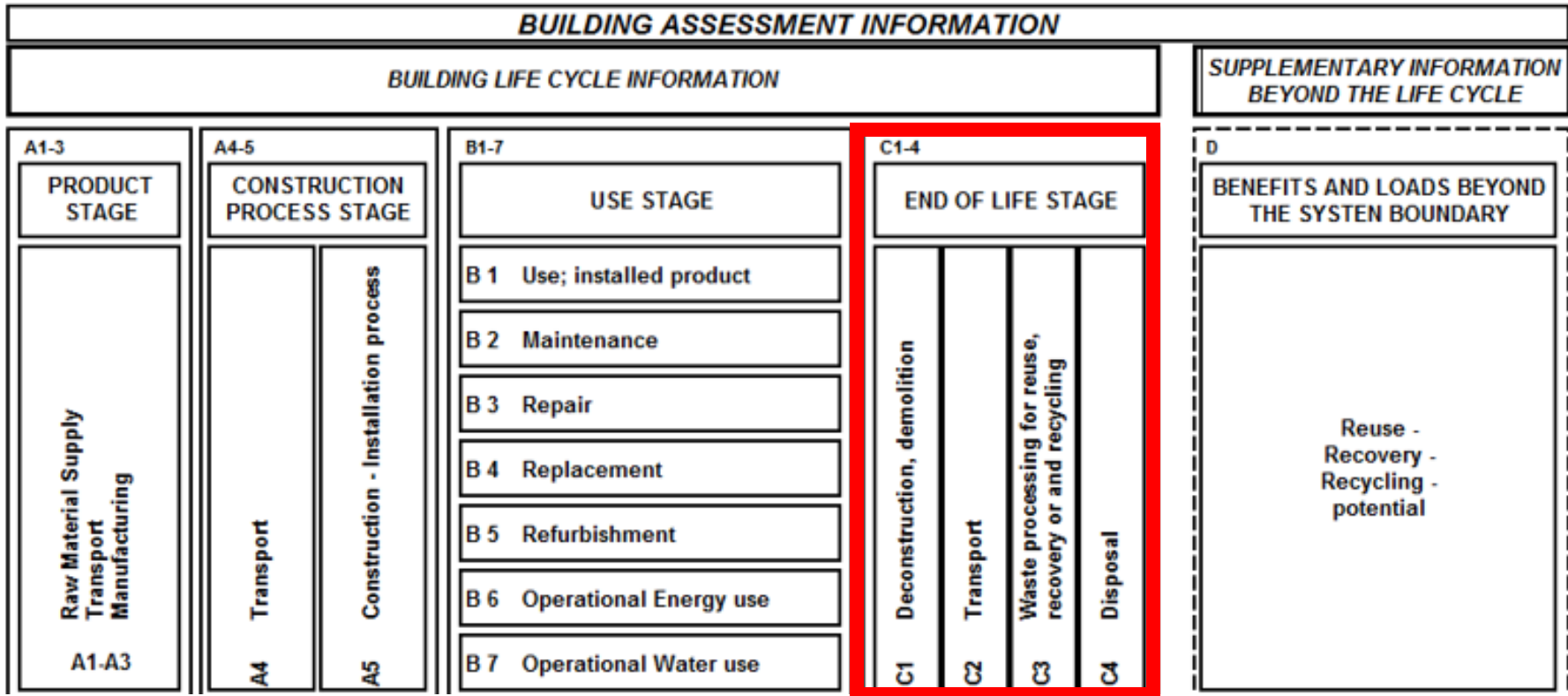
Building level – module A



Building level – module B



Building level – module C



Building level – module D

BUILDING ASSESSMENT INFORMATION									
BUILDING LIFE CYCLE INFORMATION					SUPPLEMENTARY INFORMATION BEYOND THE LIFE CYCLE				
A1-3		A4-5		B1-7	C1-4				
PRODUCT STAGE		CONSTRUCTION PROCESS STAGE		USE STAGE	END OF LIFE STAGE				
Raw Material Supply Transport Manufacturing A1-A3		Transport Construction - Installation process A4 A5		B 1 Use; installed product	Deconstruction, demolition C1	D BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY Reuse - Recovery - Recycling - potential			
				B 2 Maintenance			Transport C2		
				B 3 Repair				Waste processing for reuse, recovery or and recycling C3	
				B 4 Replacement					Disposal C4
				B 5 Refurbishment					
				B 6 Operational Energy use					
				B 7 Operational Water use					

Summary and outlook

- CEN/TC 350 standards enable sustainability indicators to demonstrate the level of
 - Environmental performance,
 - Social performance, and
 - Economic performance

against the desired functional and technical requirements for a building over its life cycle in a transparent way.

- EN standards based on life cycle approach with quantifiable and performance based indicators are ready NOW.



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Thank you

