



Hungarian System of Construction Related Sustainability Indicators

4th International Seminar on ECS

Prague,
19-20 June, 2003



CRISP
Construction and City
Related
Sustainability Indicators

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Background

CRISP

Construction and City Related Sustainability
Indicators

* * *

Setting Evaluation and Performance Criteria
in the Built Environment

Co-ordinator: BOURDEAU Luc
Centre Scientifique et Technique du Bâtiment

THEMATIC NETWORK IN EU FP5,

EESD / KA4: CITY OF TOMORROW and CULTURAL HERITAGE

CRISP background

“Sustainable Construction”

A global socio-economic-environmental approach
...but with various national/regional/local visions

*Strong need to **harmonise the ways of measuring** the various aspects and criteria of sustainable development in the construction field*

*A next step should be to reach **a more consensus vision** through a global common model and **to set up indicators** and policies to translate this vision into reality.,*

Indicator and CRISP systematization

Indicator Definition

- A synthetic variable, giving indications, describing or measuring the **state of a phenomenon or a situation**. Indicators reflect cause-to-effect relationship between an action and its consequences.
- A conceptual tool, expressed in clear and precise terms, that measures **progress towards an objective**; they provide a measurement unit through which modelling and monitoring can be conducted.

A variable which helps to measure a given aspect / criteria of sustainable construction

CONSTRUCTION AND CITY RELATED SUSTAINABILITY INDICATORS				
CATEGORIES	ENVIRONMENTAL	ECONOMIC	SOCIAL	INSTITUTIONAL
PROCESS				
URBAN PLANNING		URBAN BLOCK CLUSTER		PROCESS/ STRATEGY CLUSTER
PRODUCT DEVELOPMENT & DESIGN				
MANUFACTURING & CONSTRUCTION		BUILDING CLUSTER		
OPERATION & MAINTENANCE				
DECONSTRUCTION & DISPOSAL		PRODUCT CLUSTER		

GOAL

A broad statement that defines the ultimate condition desired

To minimize waste accumulation

OBJECTIVE

A desired direction of change

- 1. Reduce the generation of solid waste*
- 2. Increasing rate of reuse*

INDICATOR

A variable which helps to measure a state or a progress towards an objective

- 1. Per capita disposal (kg/person/year)*
- 2. Per capita reuse*

PERFORMANCE TARGET

A desired level of performance

- 1. < 200 kg/person/year*
- 2. > 150 kg/person/year*

TOOL

A pertinent use of several indicators and performance targets in relation to local conditions and specific uses

BREEAM, BEPAC, C-2000, Eco-Profile, Escale, PRESCO...

The Hungarian CRISP work

Working group:

In Hungary a working-group with around 30 professionals was established.

Coordinator:

Npc for Quality Control and Innovation in Building
PhD. Gábor Tiderenczi

Objective:

To work out a Hungarian National system of constructed related sustainability indicators connected to CRISP (“CRISP conform” system)

Groups of Indicators: Hungary

1. Healthy buildings
2. Energy in buildings
3. Waste management and reuse
4. Durability and maintenance
5. Urban environment
6. Building
7. Housing
8. Building products
9. Construction process
10. Quality Assurance and Building Diagnostics
11. Cultural Heritage and Aesthetical Quality in Architecture
12. Social and economic conditions of sustainable construction

Main aspects of developing the Hungarian indicator data-sheet

- **mainly following the CRISP data-sheet**
- **keyword system**
3-6 keywords referring the exact technical, economic or other content of each indicator (need for an effective computer searching system)
- **to point out the Hungarian priorities**
Regarding groups of indicators, topics and other features

Datasheet for Indicators 2/1

Description of indicator:

Indicator group/ Ref Nr.:.../...

Name

**Descriptipn and aims
with keywords**

Unit

Method of measurement and evaluation

Related indicator groups (acc. to Hungarian system)

1 2 3 4 5 6 7 8 9 10 11 12

SD issues (acc. to CRISP)

ENVIRONMENTAL; ECONOMIC; SOCIAL; INSTITUTIONAL

Construction categories (acc. to CRISP)

Urban Infrastructure Buildings Building products Process

Datasheet for Indicators 2/2

Indicator use & further information :

Corresponding system(s)

References

Additional information & remarks

(e.g. significance; restrictions and warnings for use)

Comments of participants

Attachements

Proposer

Date (last up-date)

Example of Indicator 2/1

Description of indicator: Indicator group/ Ref Nr.: 7/8

Name: Proper size of housing unit

Description: The indicator measures the **adequacy** of **flat sizes** by classifying the net **floor area** of flats in a housing project according to the number of users

Unit: % or points

Method of measurement: Calculation Further details are attached

SD issues (acc. to CRISP): ENVIRONMENTAL; ECONOMIC; SOCIAL

Construction categories (acc. to CRISP): Buildings

Indicator use & further information:

Corresponding system(s): Housing Quality indicators

Add. information & remarks: By using this indicator, proper scale can be a condition of getting certain financial support and subsidies in a new housing project.

Example of Indicator 2/2

Method of measurement: details

Table 1. Classifying in categories (1-5) the net floor area of flats in a housing project acc. to the No. of users.

N° of users	1	2	1	4	5	6	7	8	% of units
Category									
1	<30	<45	<55	<65	<75	<85	<95	<105	()
2	30-35	45-48	55-60	65-71	75-82	85-92	95-102	105-112	()
3	35-40	49-51	60-65	72-78	83-91	93-101	103-111	113-121	()
4	40-45	52-55	65-70	79-85	92-100	102-110	112-120	122-130	()
5	45<	55<	70<	85<	100<	110<	120<	130<	()

Each category (row) shows a range of floor areas. Category 1 represents the flats with smaller floor area than the proposed minimum. Category 5 represents flats with larger floor area than the appreciated maximum in subsidies. Category 3 represents the “optimal” range. The categories 2 and 4 are transitional. **In the evaluation process the proportion of units falling within each categories should be documented.**

Evaluation: The proportion of flats meeting the requirement of each category should be multiplied by determined values, for example: 0 for category 1 and 5; 50 for category 2 and 4 and 100 for category 3. The result will be a percentage showing the performance of this indicator.

For example: category 1: 0% of the flats; category 2: 20% of the flats; category 3: 45% of flats; category 4: 30% of flats; category 5: 5% of flats. The result will be: $0 + 0,2 \times 50 + 0,45 \times 100 + 0,3 \times 50 + 5 \times 0 = 70\%$