

THE DIRECTORATE OF PUBLIC CONSTRUCTION AND PROPERTY'S ENVIRONMENTAL SURVEY 2004

The Directorate of Public Construction and Property carried out an environmental survey in the period March to September. Below is a description of processes linked to development of the method.

CHOICE OF METHOD

Requirements in NS-EN ISO 14001

The Directorate of Public Construction and Property has based its environmental management system on the requirements in NS-EN ISO 14001. The environmental standard NS-EN ISO 14001 requires that organisations that wish to establish an environmental management system must first determine their environmental status. In practice, this means compiling an overview of the organisation's main environmental impacts.

The challenge is thus twofold: firstly, information must be gathered about how the organisation's activities affect the external environment; secondly it must be decided which of these impacts are to be regarded as the most serious.

The overview of environmental impacts is a useful tool for the management in defining the Directorate of Public Construction and Property's main focus areas for environmental work. It also forms the foundation for the rest of the environmental management system, such as environmental targets, procedures, environmental auditing and reports.

Choosing methods

NS-EN ISO 14001 does not indicate which methods should be used to chart current environmental status. Organisations and companies that want to implement an environmental management system must decide this themselves, and a wide range of different methods have been used since the introduction of the standard.

The choice of method depends on the size and complexity of the organisation. A survey to identify the main environmental impacts of all the activities in an organisation will necessarily yield a general, simplified impression of the organisation. The method used will often entail a high degree of professional judgement. The purpose of the survey is to map general tendencies and the most important focus areas, and the findings will form the starting point for further improvements.

Background for choice of methods

The Directorate of Public Construction and Property wanted to ensure that the charting process was well documented and that clearly defined methods were used. It is important to be able to understand the assessments that underlie the results, in case we want to revise the overview of environmental impacts at a later date.

The Directorate of Public Construction and Property developed the method on the basis of environmental surveys in similar organisations, including the Swedish National Property Board (SFV). Special survey groups were appointed for each of the Directorate's business areas. The survey groups consisted of representatives from the project group and other key people from the business area. The methods used to identify environmental impacts were adapted to suit the individual business areas. The survey groups were responsible for these adaptations.

THE CHARTING PROCESS

The charting process consisted of two steps:

1. Charting

Identification of which processes and activities in the different business areas may have an environmental impact. For example, all the activities undertaken during a typical construction project were reviewed to find out which activities might have an environmental impact. Studies were performed on practices in the Directorate of Public Construction and Property, for example in connection with construction projects.

2. Weighting

The charting process resulted in a list of many serious environmental impacts in all the business areas. It was then necessary to weight these impacts to differentiate between major and minor environmental impacts. Below is an example of a weighting table from Property Management. The individual parts of the table are explained afterwards.

AKTIVITET,PRODUKT,ELEMENT	MILJØPÅVIRKNING										JUSTERINGSFAKTOR					
	Klimaeending	Vannforurensning	Støy, støv, luft	Høyt energiforbruk	Forringelse av naturkvaliteter	Lokalklima	Kulturminner	Høyt material- og ressursforbruk PRODUKSJON	Høyt material- og ressursforbruk DRIFT	Giftige stoffer/kjemikalier	Får 3'er innen to eller flere av AADs fokusområder?	Rutiner/ansvar forf. old tilstrekkelige per i dag?	Sum 1 (uten vekt)	Sum 2 (med vekt)	TOTAL SUM (med justeringsfaktorer)	Vesentlig miljøaspekt
	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	X	X				X
Overtakelse av nybygg, prøvedrift	2	1	1	3	1	1	2		1	1		X	13	32	12	
Løpende drift inkl. utendørsarbeider	3	2	1	3	2	1	2		3	3	X		20	52	62	X
Teknisk service	3	2	1	3	1		1		2	2	X	X	15	41	31	
Planlagt vedlikehold og utskiftninger: Bytte av gulvbelegg/vinduer/himling, kontrahering av tjenesteleverandører, maling etc.	1	1	1	2			3		3	3	X		14	37	47	
Løpende ombygging: Mindre endringsarbeider. Flytting av lettvegger, mindre ombygging av ventilasjonsanlegg etc.	1	1	1	3	2		3		3	3	X		17	44	54	X
Oppgradering og utvikling av eiendom: Tilbygg, ombygging, fasaderenovering, takbytte etc.	3	2	3	3	3	3	3		3	3	X		26	60	70	X
Omdiskutert tema (interesseorganisasjoner/ media)				X	X		X									
Sum 1	13	9	8	17	9	5	14	0	15	15						
Vekt (AAD fokusområde)	3	3	1	3	2	1	2	2	3	3						
Sum 2	39	27	8	56	23	5	33	0	45	45						
Påvirkningsfaktor %	40	40	30	40	10	10	10	0	80	40	10					
TOTAL SUM	16	11	2	22	2,3	1	3	0	36	18						

Each activity is given a score indicating the significance of the environmental impact from this activity. 1 = minor, 3 = major

X gives + 10 points

X gives - 20 points

Total score incl. weighting and adjustment

Activities linked to operation and maintenance of buildings

5 extra points for environmental impacts where the Directorate's influence has led to public focus

Weighting 3 (Total 1 multiplied by 3) for environmental impacts that the Ministry of Labour and Government Administration defined as focus areas for the Directorate in the letter of allocation for 2004

The higher the score, the more serious the environmental impact

Total 2 is multiplied by a percentage rate that represents the significance of the impact and the business area compared with the Directorate's total activities (see table below)

Assessment of activities

Weighting	Explanation
<p>Activities are assessed in relation to a number of environmental impacts. Points are added up horizontally.</p> <ul style="list-style-type: none"> • Climate change • Emissions to water • Noise, dust, odour • High energy consumption • Deterioration of natural assets • Local climatic effects • Heritage sites • High consumption of resources • Toxic substances / chemicals 	<p>1: has little real or potential impact 2: has medium real or potential impact 3: has major real or potential impact</p> <p>The total for each activity is given in the green column</p>
<p>Focus areas defined by the Ministry of Labour and Government Administration</p> <p>Some environmental impacts are subject to an extra round of weighting because the Ministry of Labour and Government Administration has defined it as one of our focus areas. Total 1 is multiplied by the extra weighting total</p>	<p>Environmental impacts are weighted thus:</p> <p>3: Climate change, water pollution, high energy consumption, high consumption of resources for operation, and toxic substances and chemicals</p> <p>2: Deterioration of natural assets, heritage sites, high consumption of resources during production</p> <p>1: Noise, dust, odour</p>
<p>Adjustment factors</p> <p>Weighting on the basis of more subjective matters. The points are added to the previous scores:</p>	<p>$X = \text{score}$</p> <p>If an activity scores 3 points for two or more of the environmental impacts defined as focus areas by the Ministry of Labour and Government Administration, the activity is given an extra 10 points.</p> <p>If an activity has sufficient routines and procedures to ensure that environmental impacts are only potential and not real, 20 points are deducted from the score</p>

Environmental impacts

Topic	Explanation
<p>The environmental impacts' scores are added up vertically in the table.</p>	<p>Scale 1–3</p> <p>The total score for each environmental impact is given in the green row</p>
<p>Public interest</p> <p>Interest in the topic in society at large (organisations, media, local communities, etc.)</p>	<p>$X = 5$ points</p>
<p>Influence factor</p> <p>The business areas have varying influences on the Directorate of Public Construction and Property's environmental impacts. This is represented by the influence factor, which is a percentage related to each environmental impact. The table below demonstrates the relationship between the business areas when calculating influence factor</p>	<p>0–100 %</p>

Influence factor as a percentage

	Climate change	Water pollution	Noise, dust, odour	High energy consumption	Deterioration of natural assets	Local climate	Heritage sites	High consumption of materials and resources – PRODUCTION	High consumption of materials and resources OPERATION	Toxic substances / chemicals
Planning and Research	20	30	10	10	50	50	30	0	0	10
Consulting and Construction	40	20	60	50	40	40	30	100	20	50
Property Management	40	50	30	40	10	10	40	0	80	40
Total	100	100	100	100	100	100	100	100	100	100

Weighting thus gives two scores, showing the environmental significance of the Directorate of Public Construction and Property's:

- environmental impacts
- activities, assessments or products

A high score means that the matter should be regarded as significant.

Treatment of the weighting results

We now have a weighting result for each business area. The totals for the environmental impacts in each of the business areas (green row in the weighting diagram) are added together to indicate the main environmental impacts in the Directorate of Public Construction and Property as a whole. The results are given in the table below.

Environmental impact	Consulting and Construction	Planning and Research	Property Management	TOTAL
Toxic substances / chemicals	24	3	18	45
High energy consumption	20	4	22	45
High consumption of materials and resources OPERATIONS	7	0	36	43
Climate change	17	8	16	41
Deterioration of natural assets	12	24	2.3	38
Deterioration of heritage sites	10	14	13	37
High consumption of materials and resources PRODUCTION	28	0	0	28
Local climate	4	23	1	28
Water pollution	8	5	14	28
Noise, dust, odour	6	4	2	12
Local climate	4	23	1	28
Water pollution	8	7	11	27
Noise, dust, odour	6	4	2	12

Since the scores at the top of the tables are relatively close, the Directorate of Public Construction and Property has chosen to regard the six environmental impacts with the highest scores as being of equal significance.