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# Statistics Norway, Kongsvinger

CREDIT Case NO01



Danish Building Research Institute  
AALBORG UNIVERSITY



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Construction and Real Estate -  
Developing Indicators for Transparency



# Statistics Norway, Kongsvinger

CREDIT Case NO01

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# Preface

This report describes the results of a case study undertaken as part of the Nordic/Baltic project *CREDIT: Construction and Real Estate – Developing Indicators for Transparency*. The case study is part of the work in work package 4-6 with respect to project assessment tools, application in firms and national benchmarking systems.

CREDIT includes the most prominent research institutes within benchmarking and performance indicators in construction and real estate, namely SBI/AAU (Denmark), VTT (Finland), Lund University (Sweden) and SINTEF (Norway). Further, three associated partners have joined CREDIT. The three associated partners are the Icelandic Center for Innovation (Iceland), Tallinn University of Technology (Estonia) and Vilnius Gediminas Technical University (Lithuania).

The project has been managed by a steering committee consisting of the following persons:

- Kim Haugbølle, SBI/AAU (project owner).
- Niels Haldor Bertelsen, SBI/AAU (project coordinator).
- Päivi Hietanen, Senate Properties (chair of Finnish steering committee).
- Pekka Huovila, VTT.
- Ole Jørgen Karud, SINTEF.
- Magnus Hvam, SKANSKA.
- Bengt Hansson, Lund University.
- Kristian Widén, Lund University.

The project group wishes to thank our industrial partners and all the contributors to the case studies. In particular, the project group wishes to thank the four Nordic funding agencies that sponsored the project as part of the ERABUILD collaborative research funding scheme: The Nordic Innovation Centre (NICe), TEKES in Finland, FORMAS in Sweden and the Danish Enterprise and Construction Authority (Erhvervs- og Byggestyrelsen) in Denmark.

Danish Building Research Institute, Aalborg University  
Department of Construction and Health  
August 2010

*Niels-Jørgen Aagaard*  
Research director

# Summary

This report describes the case study of the usage of key indicators in relation to the Statistics Norway building in Kongsvinger. The study was undertaken as part of the Nordic and Baltic project CREDIT: Construction and Real Estate – Developing Indicators for Transparency.

The analysis aims at three levels: the project or building, the firm and the national benchmarking system.

## *Buildings (WP4)*

At the building level, a standardized data form is used to collect data on some key indicators. Statsbygg's motivation for collecting the data are among other things local assessment of the effects of local measurements, reporting upward in the system, and benchmarking against similar buildings, and to improve the work processes. Energy consumption has special attention.

A questionnaire to evaluate CREDIT Indicator Classification is shown in chapter 5. The values here show the importance Statsbygg put on different indicator for both public and internal project demands. Important indicators have been identified in relation to the project in almost all of the main indicator groups.

## *Enterprises (WP5)*

At the firm level, the analysis focuses on Statsbygg's usage of the indicators. In order to perform Life Cycle Costing analysis, Statsbygg's collects data on a number of cost and performance indicators. These are data regarding the individual building concerning size, number of employees, running costs, maintenance costs, developments cost and so forth. The data from individual buildings are processed and compared with different building categories and between different types of costs.

## *National Benchmarking (WP6)*

At the systemic level, the analysis focuses on the national benchmarking networks. Statsbygg reports to both NFB (The Network key numbers for Benchmarking) and NfN (Norwegian Facility Management Network).

The purpose of NBEF is to create a common communication and development platform for property owners, institutions / corporations, users / tenants and other individuals who have property-, building- and service management as their prime professions.

The NFB goal is to focus on activities that contribute to more efficient use of resources in the facility management, and hence using the key number (Key Performance Indicators) as support tools.

Statsbygg believes that it is important to keep focus on the physical usage of energy rather than energy costs.

# 1. Introduction and objectives

This chapter describes the objectives of the CREDIT project, the background, scope and purpose of the case study of search engines for private homes, and the research design of the study.

## 1.1 Objectives and work packages of CREDIT

Sir Winston Churchill once said, “We shape our buildings, afterwards our buildings shape us” (28<sup>th</sup> Oct 1943). This quotation underlines how strong a building can influence an occupier or a user. Providing complex public facilities for example hospitals, schools, universities and libraries that are able to meet both the internal and external stakeholders’ needs and requirements is not without complications. The aims and demands of different stakeholders within a project can sometimes create conflict with each other’s interest. Understanding the needs and requirements of these stakeholders are essential to remain competitive in today’s market. A client that pays attention to the needs of the end-users will be rewarded with a high-performance property. Simultaneously, this shift seeks to solve many ills associated with inadequate building conditions and resulting in poor building function.

Due to the amount of both public and private money being invested in delivering public and private facilities, strong actions must be adopted. Collaboration with the relevant stakeholders will help building owners in identifying the required performance indicators to create high-performance facilities. The project aims to define a model for the implementation of performance requirements, which ensure the fulfilment of the various types of users’ and stakeholders’ needs and demands. The model shall also allow for the continuous measuring of the effectiveness of the used requirements and the model as such so that it may be improved as more knowledge and experience of it is achieved.

Following the themes of the ERABUILD call closely, the aim of CREDIT is to improve transparency on value creation in real estate and construction.

Thus, the objectives of CREDIT are:

- To capture end user needs and requirements in order to identify and quantify – where possible – value creation in real estate and construction.
- To develop compliance assessment and verification methods.
- To define and develop benchmarking methods and building performance indicators in real estate and construction.
- To set out recommendations for benchmarking internationally key building performance indicators.

Consequently, the deliverables of CREDIT are:

- 1. The establishment of a network of Nordic and Baltic researchers for benchmarking and performance indicators through frequent interactions in workshops across the Nordic and Baltic countries.
- 2. A State-of-the-Art report, that will identify and critically examine a number of existing tools, databases, mandatory reporting, approaches and benchmarking schemes to capture and measure end-user needs, client and public requirements on performance and value creation.

- 3. A strategic management and decision making tool to guide the definition and development of benchmarking methods and building performance indicators in different business cases.
- 4. A comprehensive performance assessment and management tool with associated key performance indicators to capture end-user requirements and to continuously measure and verify the compliance of performance throughout the lifecycle of an actual building project and linked to building information models.
- 5. Recommendations as to how sectoral and/or national indexes for performance indicators can be designed in order to allow for international benchmarking of construction and real estate.
- 6. Dissemination of the lessons learned and tools developed through news articles, press releases, workshops with actors in the real estate and construction cluster etc.

## 1.2 Background, purpose and focus of the case study

Statsbygg acts on behalf of the Norwegian government as property manager and advisor in construction and property affairs. Statsbygg offers governmental organisations premises suited to their needs, either in new or existing buildings.

Statsbygg has been collecting key performance indicators in its facility management since the 1970's regarding energy consumption and costs. These indicators have been further developed and applied in a benchmarking system used by the organization (to a varying degree).

This particular building has been chosen as a case study because:

- It is a typical office building where data regarding cost, building performance and environment are collected and reported
- It demonstrates Statsbygg's current benchmarking system regarding facility management
- Data collected is part of a national benchmarking database (NfN – Norwegian Facility Management Network)

## 1.3 Research design and methods applied in the case study

This case study has been carried out in collaboration between Statsbygg and SINTEF.

Information about the indicators and how they are used is based on interviews with Kirsten Lindberg, head of the secretariat of the Property Management Department in Statsbygg and her staff. Information regarding Norwegian Facility Management Network – NfN, was obtained by interviews with NfN's secretary Fredrik Horjen. Both Statsbygg's and NfN's databases have been examined for contents, guidelines for data gathering, and real-world relevance.

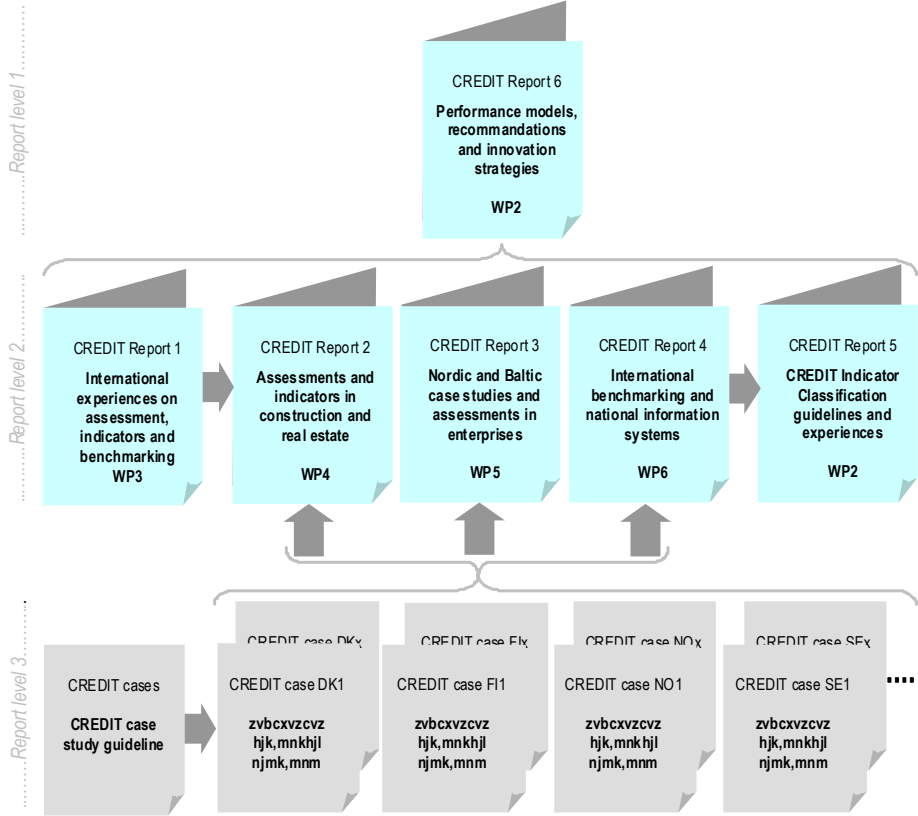
## 1.4 Reading instruction

This report summarises the case study of search engines as input to work package 4-6 of the CREDIT project. Chapter 2 in this report addresses issues relevant to WP4 on assessments at project level. Chapter 3 addresses issues relevant to WP5 on the application of assessments in firms. Chapter 4 addresses issues relevant to WP6 on sectoral, national or international

benchmarking systems. Chapter 5 discusses and concludes on the lessons learned with respect to the three levels of projects, firms and systems.

The work of each work package (WP) is documented in various other reports, articles etc. Below, a graphical illustration of the hierarchy and linkages between the individual reports is given.

Figure 1. Graphical illustration of the hierarchy of the CREDIT reports.



## 2. Buildings – assessments in construction or real estate processes

This chapter is particularly relevant for WP4 and CREDIT Report 2 and focuses on the KPIs relevant for FM of a specific office building. It addresses questions related to how data and information about the building is collected, managed, evaluated and used.

### 2.1 The actual building, building parts and processes

The office building is located at Otervegen 23, Kongsvinger, Norway. The gross floor area is about 12 700 square meters. The old part of the building was constructed in 1987, and a new part was added December 2005. Statistics Norway (SSB) has been in Kongsvinger since 1960, but the head office is in Oslo.

An important goal for the project was to design the new building so that it complements the existing one. The original main entrance was upgraded with a new and modern reception.

The new building has three storeys, and includes a canteen and open areas in a centre building.

Figure 2. Drawing showing the layout in the horizontal plane.

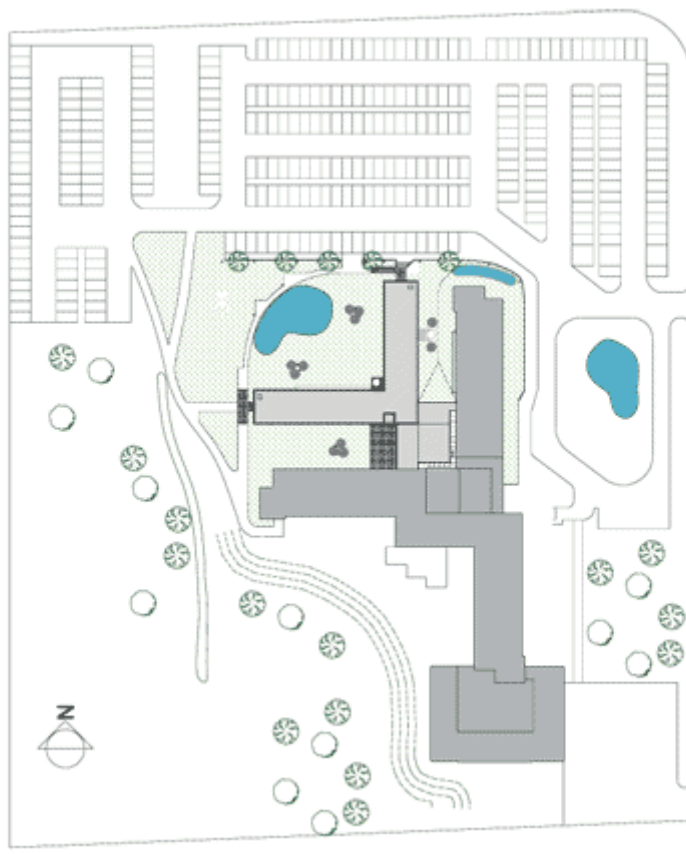


Figure 3. Photo of the new part of the building.



## 2.2 The applied assessment methods and tools in the processes

A standardized data gathering form is used to collect data on some key indicators. This form is based on NfN's (Norwegian Facility Management Network). Statsbygg has reported data to NFN since 2003.

In addition Statsbygg has its own energy and cleaning statistics. Statsbygg collects both cleaning cost and energy consumption. NFN, however, only collect energy costs.

The motivation for collecting the data in Statsbygg is:

- Local assessment of the effect of local measures
- Planning of activities
- Reporting upwards in the system: Property, region, headquarters, Ministry of Government Administration and Reform.
- Basis for Statsbygg analysis and reporting
- Benchmarking against similar buildings
- Improving work processes
- A basis for condition assessment
- Energy consumption has special attention

The system is an integrated part of Statsbygg operation and management of properties. The procedure is described on Statsbygg's intranet.

## 2.3 Cost and performance indicators applied in the assessments

Energy indicators are used to compare buildings within categories (office, education, etc.). The other numbers are compared independent of building category.

The real estate indicators are used to manage the existing buildings in a more efficient way, but as of today they are not used in the planning/design of new buildings. The transfer of knowledge from existing buildings to new buildings is not taking place in a large degree.

The area where largest progress has been made is energy performance. In addition the indicators are used when creating cost budgets and calculating rent. Statsbygg has created its own LCC-calculator ("LC-profit"), and they use it to do life cycle costing.

The main focus is better management of existing buildings. Statsbygg owns 2 300 buildings, but creates only about 20 -30 new ones each year.

Figure 4. Example of the key indicators gathered by Statsbygg. The numbers shown are from the "Statistics Norway"-building.

<b>Sum nøkkeltall</b>			
Revisjon:	0	Referansår:	<b>2007</b>
Eier:	Eiers adr.:	Bygn.adr.:	
Statsbygg	Biskop Gunerustgt. 6 0032 Oslo	Oterveien 23 2200 Kongsvinger Kommune: Kongsvinger	
<b>Basis for nøkkeltallene</b>			
	<b>Brutto areal</b>	<b>Sum Arb.pl.</b>	
	(kvm)	(stk)	
<b>Ekvivalent basis for nøkkeltall</b>	<b>12 755</b>	<b>390</b>	
(Data for den bygning som er grunlaget for nøkkeltallene)			
<b>Økonomiske nøkkeltall for kontor- og eiendomsvirksomhet</b>			
	<b>Totalt</b>	<b>Kostnader</b>	<b>pr. Arb.pl.</b>
	(KNOK)	pr. kvm	(NOK/Arb.pl.)
	(NOK/kvm)	(NOK/Arb.pl.)	
<b>EIENDOM</b>			
SUM FORVALTNING	507 336	40	1 301
SUM DRIFT OG VEDLIKEHOLD	5 324 036	417	11 892
SUM UTVIKLING	252 786	20	648
<b>SUM Eiendom = FDVU</b>	<b>6 084 158</b>	<b>477</b>	<b>13 841</b>
<b>KONTOR / SERVICETJENESTER</b>			
SUM ADM. + KONTORLEDELSE	0	0	0
SUM FLYTTING + ROKKERING	0	0	0
SUM KONTORMØBLERING	0	0	0
SUM REKVISITA	0	0	0
SUM PRINT OG KOPIERING	0	0	0
SUM VAKTHOLD / SKRING	0	0	0
SUM SENTRALBORD OG RESEPSJON	0	0	0
SUM POST- OG BUDTJENESTER	0	0	0
SUM KANTINETJENESTER	0	0	0
<b>SUM Kontor</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>SUM Kontor- og eiendomsvirksomhet</b>	<b>6 084 158</b>	<b>477</b>	<b>13 841</b>

(Continued below)

Nøkkeltall						Side 1 av 2	2007
Eiendom	Areal	Antall	Kostnader				
	(BTA)	arb.pl.	Totalt	pr. kvm	pr. Arb.pl.		
	(kvm)	(stk)	(NOK)	(NOK/kvm)	(NOK/Arb.pl.)		
<b>FORVALTNING</b>							
Skatter og avgifter	12 755	390	124 836	10	320	(2)	
Forsikring	12 755	390	0	0	0	(3)	
Administrasjon egne ansatte	12 755	390	382 500	30	981		
Øvrige administrasjonskostnader	12 755	390	0	0	0		
<b>SUM FORVALTNING</b>			<b>507 336</b>	<b>40</b>	<b>1 301</b>		
<b>DRIFT OG VEDLIKEHOLD</b>							
Personellkostn. DV-ansatte	12 755	390	621 000	49	1 592		
Renhold, sum	12 755	390	1 530 600	120	3 925		
- herav innvendig	12 755	390	1 530 600	120	3 925		
- herav utvendig	12 755	390	0	0	0		
Energi, sum	12 755	390	1 588 917	125	4 074		
- herav el-kraft	12 755	390	1 588 917	125	4 074	2 407 451	189
- herav olje	12 755	390	0	0	0	0	#DIV/0!
- herav fjernvarme/kulde	12 755	390	0	0	0	0	#DIV/0!
Renovasjon/avfallshånd.	12 755	390	152 923	12	392	2 407 451	189
Vann og avløp	12 755	390	69 147	5	177		
Teknisk sikring (alarmer, etc.)	12 755	390	55 728	4	143	(4)	
Utendørs	12 755	390	562 191	44	1 442	(5)	
Alternativ 1: for de som ikke skiller ut vedlikeholdskostnaden. Spørsmål? Ring 90882601							
Bygning	12 755	390	0	0	0		
VVS-installasjoner	12 755	390	0	0	0		
El-installasjoner	12 755	390	0	0	0		
Alternativ 2 for de som skiller ut vedlikehold.							
<b>VEDLIKEHOLD</b>							
Planlagt vedlikehold	12 755	5 066	366 658	29	72		
Utskiftinger	12 755	5 066	376 872	30	74		
Utendørs	12 755	5 066	0	0	0		
<b>SUM VEDLIKEHOLD</b>			<b>743 530</b>	<b>58</b>	<b>147</b>		
<b>SUM DRIFT OG VEDLIKEHOLD</b>			<b>5 324 036</b>	<b>417</b>	<b>11 892</b>		
<b>UTVIKLING</b>							
Løpende ombygging	12 755	390	0	0	0		
Offentlige krav/pålegg	12 755	390	54 436	4	140		
Oppgradering	12 755	390	198 350	16	509	(6)	
<b>SUM UTVIKLING</b>			<b>252 786</b>	<b>20</b>	<b>648</b>		

Nøkkeltall						Side 2 av 2	2007
Kontortjenester	Areal	Antall	Kostnader				
	(BTA)	arb.pl.	Totalt	pr. kvm	pr. Arb.pl.		
	(kvm)	(stk)	(NOK)	(NOK/kvm)	(NOK/Arb.pl.)		
<b>ADM. + KONTORLEDELSE</b>							
Personellkostn. ansatte	12 755	390	0	0	0		
Kjøpte eksterne tjenester	12 755	390	0	0	0		
<b>SUM ADM. + KONTORLEDELSE</b>			<b>0</b>	<b>0</b>	<b>0</b>		
<b>FLYTTING, ROKKERING ARB.PL.</b>							
Personellkostn. ansatte	12 755	390	0	0	0		
Kjøpte eksterne tjenester	12 755	390	0	0	0		
<b>SUM FLYTTING + ROKKERING</b>			<b>0</b>	<b>0</b>	<b>0</b>		
<b>KONTORMØBLERING</b>							
Kjøp av inventar og møbler	12 755	390	0	0	0		
Eksterne personellkostnader	12 755	390	0	0	0		
Personellkostn. ansatte	12 755	390	0	0	0		
<b>SUM KONTORMØBLERING</b>			<b>0</b>	<b>0</b>	<b>0</b>		
<b>REKVISITA</b>							
Kontor, datarekvisita, papir	12 755	390	0	0	0		

Statsbygg collects a large amount of data for each of its buildings. The figure above shows a screenshot of some of the information as presented in MS Excel.

## 2.4 Relation to different enterprises and national benchmarking

When facility managers in Statsbygg do their benchmarking they compare with other buildings in Statsbygg's portfolio, not with the numbers from the national benchmarking networks.

In each geographical region the facility managers meet twice a year. In these meetings the key indicators are used as discussion points.' A challenge with national benchmarking is the "apple and pears" problem. A major problem is that there are substantial differences when it comes to level of maintenance. Statsbygg believes that their buildings have a relatively equal level of maintenance. If attention is not paid to this matter benchmarking can result in misleading recommendations. Buildings with too low historical maintenance expenses can become best practice when maintenance level is not taken into account.

Another problem is that different definitions seem to be used when it comes to separating between value preserving maintenance and value increasing development.

In the Network Key Number for Benchmarking (NFB) buildings are characterized by the standard NS 3457 (containing a table for different building types). In addition they are categorized as owned, rented in or rented out. The cost data are categorized following the standard NS 3454 (Cost Data for LCC).

## 2.5 Visions and innovation for future improvements

At Statistics Norway, Statsbygg's property manager is responsible for collecting the required key performance indicators. The time and effort in collecting the key performance indicators are substantial. This goes for all of Statsbygg's properties. The company thus has a clear ambition of making the data gathering more simple and efficient (see Section 3.5).

### 3. Enterprises – assessments and indicators internally applied

This chapter focuses on how Statsbygg applies the assessments and indicators internally in their organisation to control and improve their business.

#### 3.1 The actual enterprise, company and firm

Statsbygg acts on behalf of the Norwegian government as property manager and advisor in construction and property affairs. Statsbygg offers governmental organisations premises suited to their needs, either in new or existing buildings.

Statsbygg is an administrative body, responsible to the Ministry of Government Administration and Reform, and operates in accordance with standard business principles. However, achievements in accordance with Government objectives take precedence over Statsbygg's own business interests.

Statsbygg manages approx. 2.6 million m<sup>2</sup> of floor space, in Norway and abroad. The property portfolio consists of government and cultural buildings, colleges and public administration buildings, royal properties, embassies and diplomatic residences abroad.

Statsbygg is responsible for organising, planning and completing building projects within set frameworks for budgets, time limits and quality. The buildings must meet quality requirements pertaining to architecture, functionality and environmental concerns. In total Statsbygg's annual building budget is approx. NOK 3 billion.

Statsbygg offers consultancy and assistance in civil engineering and technical matters to ministries and other governmental organisations. Statsbygg also cooperates with the public administration, and advises on assessing property needs, planning and acquiring property.

A new task for Statsbygg in the future will be to develop vacated state-owned premises for alternative public or commercialised utilisation. The objective is to create attractive areas, emphasising local interests, efficient use of resources and sound environmental solutions.

As responsible for the construction, management and development of state owned property, Statsbygg has co-ownership in the environmental challenges of our country.

Statsbygg as an organisation consists of the head office in Oslo and five regional offices. 300 of the 750 employees are based at the head office. More than 350 are engaged in the operation and maintenance of Statsbygg's properties, and the rest work at the regional offices.

## 3.2 Assessment methods and tools applied in the enterprise

Figure 5. Illustration from the cover of Statsbygg's energy report.



### **Følgenotat**

*Oslo, 8. februar 2007*

Vedlagt følger oversikt og presentasjon av drift- og vedlikeholdskostnader for 2006, for Statsbyggs eiendommer.

Statistikken 2006 er oppdelt etter Norsk Standard 3454, utgave 2 (Livssyklus kostnader for byggverk).

Regnskapsstallene er hentet fra Statsbyggs økonomisystem og er i henhold til regnskapsprinsippet. Kvadratmetertall er bruttoareal (BTA) og er hentet fra Propman per januar 2007. Det er kun eiendommer der det er ført kostnader i 2006 som er med i statistikken.

### **Kompleksoppdeling**

Oppdeling av komplekstypene følger oppdeling slik den er definert i Propman. Enkelte komplekstyper er slått sammen der dette fremstår hensiktsmessig. Kompleksoppdelingen i statistikken, er følgende:

1. Undervisning og forskning
2. Offentlig adm. og tjenesteyting, og Tinghus
3. Regjeringsbygg
4. Kultureiendom, Museer o.l.
5. Veg- og trafikkstasjoner, og Tollsted
6. Barnevernsinstitusjoner

### **Innledning**

Statsbygg har i snart 30 år registrert energiforbruket og utgitt årlige energirapporter for egne og andres bygninger. De siste årene er det benyttet data-assistert energioppfølging i dette arbeidet. Energi- og vannforbruk blir registrert i en felles database. Hensikten med dette er å redusere det manuelle arbeidet med energioppfølgingen i tillegg til å øke kvaliteten på rapporteringen. Energioppfølgingen stiller store krav til vårt driftspesoneell. Derfor legges det også vekt på en kontinuerlig kompetanseheving og erfaringsutveksling i Statsbygg. Eiendomsforvaltningen utvikler egne kurs i samarbeid med Statsbyggskolen. Etablering av e-læring og regional mentorordning er eksempler på viktige tiltak for at vi skal nå våre fremtidige målsettinger.

### **Energistatistikk 2008**

265 av Statsbyggs forvaltningseiendommer er med i selve energirapporten. Av disse er det kun 185 som er tatt med i det statistiske grunnlaget. Øvrige eiendommer er utelatt pga. manglende opplysninger, åpenbare feilregistreringer eller unormal energiforbruk pga. spesiell virksomhet. Justeringen gir et mer korrekt bilde av energiforbruket.

Statsbygg has close to 30 years of history in collecting and publishing information about energy consumption of their and other buildings. Energy and water data are collected in a common database.

265 of Statsbygg's properties are included in the report on energy consumption, but of these only 185 are used to create the statistics because of data quality and comparability issues.

Figure 6. Comparing some important energy- and water consumption indicators between different buildings. Statistics Norway is on the second to last row.

Reg. E.nr.	Eiendomsnavn	Areal m <sup>2</sup>	Fastkraft kWh	Oppvarming kWh	Vann m <sup>3</sup>	Totalt kWh	Totalt gdk. kWh	Spes.gdk. kWh/m <sup>2</sup>	Driftstid tim/uke	Spes.dtn. kWh/m <sup>2</sup>
EØ 60/101	Regjeringskvartalet G-Blokk	17 100	2 571 197	64 246	14 716	2 635 443	2 826 527	165,3	70 (58)	151,1
EØ 00074	Regjeringskvartalet Grubbegate 1	8 000	603 794	596 819	1 695	1 200 613	1 287 664	161,0	58 (58)	161,0
EØ 60/102	Regjeringskvartalet H-Blokk	19 222	2 847 494	1 770 107	7 132	4 617 602	4 952 403	257,6	70 (58)	235,6
EØ 60/105	Regjeringskvartalet Møllergate 19	3 962	615 142	0	1 030	615 142	659 743	166,5	58 (58)	166,5
EØ 60/107	Regjeringskvartalet R4 og M17	25 898	2 402 537	1 314 199	15 339	3 716 735	3 986 219	153,9	58 (58)	153,9
EØ 60/108	Regjeringskvartalet R5	48 774	5 378 226	2 782 600	11 926	8 160 826	8 752 530	179,5	70 (58)	164,1
EØ 60/104	Regjeringskvartalet S-Blokk	14 796	2 432 357	55 391	3 817	2 487 748	2 668 123	180,3	58 (58)	180,3
EØ 60/109	Regjeringskvartalet Utendørsanlegg*	0	0	0	0	0	0	0,0	(58)	0,0
EØ 60/103	Regjeringskvartalet Y-Blokk	21 805	1 297 417	1 562 599	3 289	2 860 016	3 067 383	140,7	70 (58)	128,6
EØ 00602	Statistisk sentralbyrå	12 755	2 354 447	0	3 568	2 354 447	2 517 770	197,4	58 (58)	197,4
EØ 00061	Victoria terasse	40 703	3 234 169	1 904 927	8 265	5 139 096	5 511 709	135,4	52 (58)	143,2
51 eiendommer i denne kategorien.		479 491	MWh	MWh	m <sup>3</sup>	MWh	MWh	kWh/m <sup>2</sup>	Snitt tim	kWh/m <sup>2</sup>
46 er med i statistikken.		468 287	49 648	30 880	171 009	82 879	88 374	189	78	169,4

The figure above shows how indicators are compared between different buildings in Statsbygg's portfolio. The data are compared within and between different building categories and regions. The data are also compared with historical results from previous years and trends are identified and commented. Statsbygg reports on its energy consumption to the Ministry of Government Administration and Reform. Statsbygg has an overall target of energy consumption decided by the Ministry. In 2009 the required target is 210 kWh / m<sup>2</sup>. In 2008, Statsbygg reported that its energy consumption was 206 kWh / m<sup>2</sup>.

Statsbygg also collects a number of key performance indicators regarding costs and building performances. These indicators are used when creating cost budgets and calculating rent. Statsbygg has created its own LCC-calculator ("LC-profit"), and they use it to do life cycle costing.

Table 1. The columns are (from the far left): id, description, planned maintenance, replacements, development, total maintenance, gross floor area. The “Statistics Norway, Kongsvinger” building is on the forth to last row.

Vedlikehold detaljert, per kvadratmeter Offentlig adm. og tjenesteyting, og Tinghus						
		Sum Planlagt vedlikehold	Sum Utskiftninger	Sum utvikling	Totalt vedlikehold	BTA
131	Statsarkivet i Bergen	13,2	13,4	1,3	27,9	6 029
13601	Visitasjonshall, Storskog	29,5	0,0	15,0	44,5	690
13619	Politihuset Kirkense	61,7	7,9	2,7	72,3	3 404
13621	Hjelpemiddeisentralen i M & R	277,8	0,4	37,3	315,6	2 122
13628	Politihuset, Kongsberg	39,1	12,7	167,0	218,8	2 681
13795	Fiskeriforskingen i Tromsø	23,6	5,2	7,1	35,9	5 654
178	Sinsenveien 76, Oslo	307,0	17,9	342,1	667,0	8 826
2008	Trygdekantoret i Båtsfjord	28,5	0,0	0,0	28,5	849
2610	Trygdekantoret i Verdal	37,3	0,0	0,0	37,3	909
2613	Trygdekantoret i Trondheim	463,2	0,0	0,0	463,2	227
2615	Rana Trygdekantor	6,0	20,2	3,6	29,8	1 984
2669	Nju, Leiv Finksonsveg 39-40	176,3	0,0	1,7	178,0	22 344
281	Gydas Vei 6, Oslo	146,3	20,6	31,6	198,5	8 529
3463	Tronka, Erling Skakkesgt. 66	-10 135,7	417,1	333,6	-9 385,0	1 139
347	Sunnhordland Tingrett	151,0	0,6	33,5	185,0	919
3471	Justisbygget i Mosjøen	129,1	0,0	0,0	129,1	3 331
350	Hardanger Tingrett	454,9	27,6	0,0	482,5	687
3514	Oslo Politi distr., Hundtjenesten	89,9	0,0	0,0	89,9	1 848
3528	S. For Marint Miljø Og Skkerh.	55,8	3,5	1,6	61,0	6 256
3543	Justisvesenet, Kjeller	34,6	148,5	0,0	184,1	7 406
3545	Statsarkivet, Kristiansand	2,2	20,4	10,9	33,5	4 027
357	Statens Hus i Leikanger	5,5	26,1	5,8	37,4	2 053
3572	Kystverket 6, Distr. Honningsvåg					(tom)
3574	Polarmiljøsenetret i Tromsø					(tom)
382	Kjelland Torikkensgt. 1, Kirken	18,5	0,0	8,0	26,4	1 421
474	Verde Politikammer	332,8	132,1	54,7	519,6	1 412
494	Lillegården, Eidanger	5,3	6,1	27,7	39,0	1 718
52	Sere Sunnmøre Tingrett	22,7	63,4	0,0	86,1	715
55	Statens Hus i Steinkjer	109,5	0,0	48,0	157,5	18 590
56	Statens Hus i Vidre	127,7	22,8	9,2	159,7	8 734
566	Statsarkivet i Tromsø	12,9	3,6	6,5	22,9	4 443
567	Brelviklia, Tromsø					(tom)
59	Værvarslings For Nord-Norge	67,9	96,1	0,0	164,0	1 484
602	Statistisk Sentralbyrå, Kongsv.	11,0	0,9	0,0	11,9	12 755
67	Statens Vegvesen Reg.Klr. Vest	99,6	12,7	104,5	216,8	3 944
679	Statens Kartverk, Hønefoss	28,3	7,1	9,7	45,1	16 931
720	Nyrud Politistasjon	44,8	0,0	0,0	44,9	350

### 3.3 Costs and performance indicators applied in the enterprise

In order to perform life cycle costing analyses, Statsbygg collects data on a number of costs and performance indicators. These are data regarding the individual building concerning size, number of employees, running cost, maintenance costs, development costs and so forth. The data from the individual buildings are processed and compared with different building categories and between different types of costs. The results are also used to calculate the budget for the individual property next year regarding the different types of costs.

The performance indicators focused upon in addition to costs are the energy consumption indicators described in 3.2.

### 3.4 Relation to building cases and benchmarking organisations

Statsbygg's intranet contains both statistics and procedures. The indicators are discussed locally among facility managers, and are used to create analysis and reports for different purposes.

When it comes to national statistics, Statsbygg is sharing data with NFN. Their statistic for facility management is also shared, while their energy statistics is not shared externally.

Statsbygg is required by the government to publish the specific energy consumption for its buildings.

### 3.5 Visions and innovation for future improvements

Statsbygg has an ambition of increasing the degree of automatic data gathering in its property management. An important goal is to get numbers with higher quality and for a lower cost. Statsbygg are currently working with an internal project called "Platform 2012" with this aim. Statsbygg are also investing heavily in developing Building Information Models (BIM), which have a huge potential as a tool for collecting, assessing and sharing information regarding a buildings whole life-circle. Statsbygg thus believes BIM will be a crucial part of its future system concerning key performance indicators.

In this process Statsbygg also acknowledges that it has to increase the number of indicators collected. Statsbygg are currently involved in research and development projects concerning usability. With increased insight into users needs, Statsbygg see the needs for more systematic data concerning a wider set of building performance indicators. The indicators put forward in CREDIT in this regard looks like a promising starting point and are in line with knowledge from the on-going usability project.

## 4. National benchmarking – indicators, assessment and organisation

This chapter focuses on sector, national and international benchmarking in related to the assessment and application of indicators in building in Chapter 2 and in enterprises in Chapter 3 and how benchmarking is organised, managed and rooted in the sector and what indicators are assessed in the system. Statsbygg reports both to NFB – The Network key number for Benchmarking and to NfN – Norwegian Facility Management Network. These two organisations are described in more details below. However, since Statistics Norway is the building in focus in this case and the numbers from this building is reported to NfN, the rest of chapter 4 will concentrate on NfN.

### 4.1 The actual benchmarking organisation and its purpose

Statsbygg reports both to NFB – The Network key number for Benchmarking and to NfN – Norwegian Facility Management Network. These two organisations are described in more details below.

#### **NBEF / NFB**

The Norwegian Society of Facility Management NBEF (<http://www.nbef.no>) consists of former Byggherreforeningen, The Network Key number for Benchmarking (NFB - <http://www.nfb.no>) and Network Facility Management. NBEF is a non-profit organization for companies and persons working in Facilities or property management.

The purpose of NBEF is to create a common communication and development platform for property owners, institutions / corporations, users / tenants and other individuals who have property-, building- and service management as their prime professions.

The NFB goal is to focus on activities that contribute to more efficient use of resources in the facility management, and hence using the key number (Key Performance Indicators) as support tools.

Accounting and property data has been collected since 1999. This means that you can see the evolution over time.

The database structure has been criticised because of the use of building categories. The majority of buildings are categorized as owned buildings, and the main report is essentially devoted to these. On the other hand, state buildings are categorized as leased buildings. There are relatively few cases in this group, which means that the benchmarking often has limited value for Statsbygg.

#### **NfN**

Norwegian Facility Management Network – NfN (<http://www.nfn-fm.no>) was established in 1992, and has since 1993 conducted annual benchmarking processes amongst the members. Initially the processes covered mainly Corporate Real Estate - CRE management but are now extended to include a broader span of Facility Management - FM.

The NfN highlights a number of professional networking groups where the practitioners can exchange experiences in work processes and dig deeper into their key figures. Members of these groups can facilitate bilateral benchmarking and enhance the development of internal benchmarking routines within the member corporations.

NfN is a member of EuroFM and has an ambition to contribute actively to the development of closer European relations particularly with the Nordic members in EuroFM. NfN is also member of a Nordic FM project which was initiated in 2003.

Nordic FM priorities were from the start given to the following objectives:

- Development of a common Nordic framework for standardization within FM.
- Benchmarking activities between participants in the Nordic.
- Facility Management professional environment and marketplace.
- Development of a framework and structure for education and qualification within FM on Bachelor and Master Level.

This network consists essentially of large private owners of offices. About 20 companies contribute data every year. Most members of the network have only reported data for management, operation and maintenance from few cases. This means that the work has less value in a benchmarking context, since the selection is so small. Energy consumption is one of the key indicators that are benchmarked in this cooperation. Benchmarking on energy consumptions can be shown both in kWh and the cost.

## 4.2 Assessment applied in the benchmarking organisation

Statsbygg reports the data on key performance indicators from Statistics Norway to the Norwegian Facility Management Network – NfN. NfN uses a standardized excel- file to collect the data. All participants also receive definitions, information of use, results and descriptions of the key performance indicators used.

NfN's own experiences;

- Choice of indicators: These have been changed somewhat from year to year to capture the fact that some of the participants have changed roles from owners into tenants, and some have outsourced the FM services.
- Quality control: If unusual values are encountered, they are double checked.
- All data providers are invited to a yearly meeting in order to discuss the results. The participants find this meeting to be useful for their understanding of the results.

## 4.3 Cost and performance indicators applied in benchmarking

The tables below shows the actual Key indicators collected in NFN and how the network secures that the data are collected in a proper manner by giving out definitions and describing in detail which numbers to collect and how to understand the definitions.

Figure 7. Screenshot from the NfN spreadsheet.

Key Indicators				
Company	0	Accounting year	2008	
Tenant	0			
Location of building	0			
Total square meters				
Square meters for office				
Number of users		Area per user	#VERDI!	
Number of offices		Offices	#VERDI!	
Cost				
	Totalt	pr. kvm	pr. Arb.pl.	NFN tall 2007
	(NOK)	(NOK/kvm)	(NOK/Arb.pl.)	(NOK/Arb.pl.)
Total cost per office	#VERDI!	#VERDI!	#VERDI!	
Rent	#VERDI!	#VERDI!	#VERDI!	
Property cost	0	#VERDI!	#VERDI!	20 521
Office running cost	0	#VERDI!	#VERDI!	18 265
Rent				
Rent of building	#VERDI!	#VERDI!	#VERDI!	
Parking	#VERDI!	#VERDI!	#VERDI!	
Total rent	#VERDI!	#VERDI!	#VERDI!	
Property Management (FDVU)				(NOK/kvm)
ADMINISTRATION	0	#VERDI!	#VERDI!	39
CLEANING	0	#VERDI!	#VERDI!	97
ENERGY	0	#VERDI!	#VERDI!	132
MAINTANANCE	0	#VERDI!	#VERDI!	162
FELLESKOSTNADER	0	#VERDI!	#VERDI!	62
TOTAL FDV	0	#VERDI!	#VERDI!	492
SUM OPPGRADERING/OMBYGGING	0	#VERDI!	#VERDI!	103
OFFICE RUNNING COST				(NOK/arb.plas)
ADMINISTRATION	0	#VERDI!	#VERDI!	730
RELOCATION	0	#VERDI!	#VERDI!	509
OFFICE FURNITURE	0	#VERDI!	#VERDI!	1 469
REKVISITS	0	#VERDI!	#VERDI!	1 187
PRINT AND COPY	0	#VERDI!	#VERDI!	1 925
SECURITY	0	#VERDI!	#VERDI!	2 816
RECEPTION AND SWITCHBOARD	0	#VERDI!	#VERDI!	2 269
POST AND DELIVERY	0	#VERDI!	#VERDI!	2 949
CANTINE	0	#VERDI!	#VERDI!	4 411
SUM OFFICE RUNNING COSTS	0	0	#VERDI!	18 265
ENERGY				
	Kwh per kvm	Kr per kwh	Kwh per kvm	Kr per kwh
EL	#VERDI!	#VERDI!	227	0,49
CENTRAL HEATING	#VERDI!	#VERDI!	25	
OIL AND NATURAL GAS	#VERDI!	#VERDI!	10	
Sum	#VERDI!		262	

## Definisjoner og beskrivelser

Tema	Forklaring
<b>GENERELL INFORMASJON</b>	
Bruttoareal	Bygningens totale areal iht. Norsk Standard, NS 3940, målt til utside yttervegg, ref. bygningens godkjente byggerelding (inkl. fellesarealer og tekniske arealer). Garasjer medregnes ikke. Dette areal tallet benyttes til beregning av nøkkeltall for kr per kvm. For sammenligning mellom selskapene er det avgjørende viktig at nevneren i brøken er riktig.
Kontorarbeidsplass	Antall kontorarbeidsplasser i registreringsåret - det vil si alle ansatte/inleide som disponerer arealer, har PC, bruker sentralbord, kopiering, posttjenester og andre brukerservicetjenester.
Antall brukere av bygget	Angi antall daglige brukere av bygget - totalt antall ansatte - inklusiv studenter, senger, produksjonsarbeidere, andre.
Beregnet husleieverdi	Hva kunne bygget vært leid ut for i markedet? Legg inn markedsleie i kr per kvm for tilsvarende lokaler i området. Prisen som legges inn er leie av råkloaker (Bear boat - leieavtale) det vil si eksklusiv service, energi, renhold, vedlikehold osv. (se figur lenger ned på regnearket). Undersøk markedet og gjør en skjønnsmessig vurdering. For de som ikke legger inn tall vil nøkkeltallssekretæren legge inn tall. Dette er den største kostnaden knyttet til det å forsyne en virksomhet med lokaler. Den slår kraftig ut i virksomheter som har mye areal per arbeidsplass. Det bidrar til å fokusere på arealbruken. Det er derfor en viktig kostnad å få med når man skal få fram den totale kostnaden per arbeidsplass
Faktisk betalt husleie	Husleiekostnad eksklusiv eventuelle felleskostnader. Felleskostnader og øvrige driftskostnader legges inn på neste ark.
Årsverk egne ansatte	Vi er her ute etter hvor mange egne årsverk bedriften har brukt i inneværende år til eiendom og kontordrift for eiendommen som er meldt inn. NB! Det kan være vanskelig å oppgi hvor mange årsverk man har til de enkelte oppgaver fordi mange har flere oppgaver. For å få et bilde av kostnader med egenproduksjon må du allikevel gjøre en grov vurdering og fordele årsverkene ut på de ulike oppgavene i tabellen. For forvaltere som ikke har ansvar for kontordriften: Det henstilles om at man henter inn opplysninger om egeninnsats og kjøp av varer og tjenester for de ulike oppgavene. Dette for å få et bredest mulig sammenligningsgrunnlag. Dersom det viser seg vanskelig å gjøre dette for alle oppgavene kan man velge de tjenestene der man har dekkende informasjon om hva tjenesten koster i form av egeninnsats samt kjøp av varer og tjenester. Dersom man bare har delvis informasjon om hva den aktuelle tjenesten koster skal det ikke fylles ut tall.
Kostnad for egne årsverk	Her er vi ute etter de faktiske kostnadene for de aktuelle årsverkene. Det vil si sum av lønn, sosiale, ontkostninger, kostnader til husleie, fôv og kontordrift, Kostnader til edb/lønn/personal/regnskap pr årsverk. For de som ikke har de reelle tallene kan tomrefingerregelen om årslønn ganger 2 benyttes.
Inleide årsverk	Nb en forvaltere har oversikt over inleide årsverk og kostnaden man betaler for disse. De som har denne informasjonen kan fylle ut kolonnen over inleide årsverk og tilhørende kostnad. De fleste som kjøper tjenester har ikke så detaljert kunnskap. Benytt da cellene på neste ark for kostnad til kjøp av tjenester.
<b>EIENDOM</b>	
<b>FELLESKOSTNADER (kun for leide bygg)</b>	
	Vi har i de følgende postene listet opp kostnader som kan inngå i felleskostnaden, det vil si kostnader som ikke inngår i husleien og som leietaker betaler i tillegg til husleien. Leietakere som kan spesifisere kostnadene i henhold til tabellen bes gjøre det. Vi er spesielt interessert i energi og renhold der vi sammenligner kostnadene mellom NFNs medlemmer. Det er derfor viktig at bidragene fra felleskostnaden kommer med. Øvrige kostnader kan legges i siste post i tabellen "Felleskostnader uspesifisert".
Gårdeiers administrasjon pluss påslag	Leietakere som mottar informasjon om kostnader til gårdeiers administrasjon pluss påslag oppgir det her.
Skatter og avgifter	Dersom leietaker mottar informasjon om gårdeiers kostnader til Eiendomsskatt, Helseavgift, Feieravgift, oppgis den her. Vann- og avløpsavgift inklusiv betaling for forbruk oppgis i egen post.
Forsikring	Kun forsikring knyttet til bygget- ikke utstyr og personer. Brannforsikring, innbruddsforsikring, ansvarsforsikring, egenandel. Ved skader skal eventuell egenandel føres her.
Utvending vedlikehold (gårdeiers vedlikehold)	Dersom leietaker har informasjon om kostnader til utvendig vedlikehold av bygget (tak og fasader) legges den her.
Energi fra felleskostnader	Dersom energi er en del av felleskostnaden må denne spesifiseres! Denne kostnaden registreres også under energi for å få fram nøkkeltall for den totale energikostnaden på bygget.
Drift og vedlikehold av tekniske anlegg	Gårdeiere som driver og vedlikeholder de tekniske anleggene vil legge denne kostnaden på leietaker. Dersom denne kostnaden er spesifisert legges kostnaden inn her.
Renhold av fellesarealer	Leietakere betaler for renhold av fellesarealer. Dersom man har spesifisert informasjon om denne kostnaden - oppgis den her. Dersom renholdet inngår i felleskostnaden er viktig at denne trekkes ut for å få en reell benchmarking av renholdskostnaden.
Investeringer i bygget	Gårdeier som gjør investeringer i bygget vil hente dette inn igjen i form av økt husleie. Dersom leietaker har spesifisert informasjon om denne kostnaden oppgis den her.
Renovasjon/avfallshånd.	- Drift av renovasjonsanlegg i bygningen, Leie av containere, Henting av containere, bortkjøring og tømning, Kildesortering, Renovasjonsavgift, Komprimator, Møkulering, Eventuell miljøstasjon for ansatte skal ikke tas med, Skadedyrbekjempelse
Vann og avløp	Høle regninga fra kommunen på vann og avløp inklusiv avgifter
Teknisk sikring (alarmer, etc.)	Her skal bare driften og vedlikeholdet av de tekniske sikringsanleggene ligge. Kostnader til vakt og sikringspersonell skal oppgis under vakt/sikring i kontordriften for eksempel securitas. Under denne posten legges kostnader til vedlikehold av de tekniske anleggene inklusiv serviceavtaler: Brannalarm, Adgangskontroll/kortleser, ITV-anlegg, Serviceavtaler, Bevegelsesdetektorer, Vaktpersonell og gjennomføring av vakttjenesten føres under vakt og sikring.
Utendørs	Alle kostnader knyttet til: Grøntanlegg, Veier, Parkeringsområder, Snøbrøyting, Bankplass, Feie fortau, Straing, Rensing av kummer, sykkelparkering, fontener/bassenger. Eventuelle inntekter fra parkering o.l skal ikke regnes med
Felleskostnader - uspesifisert	Her legges felleskostnadene som ikke er spesifisert i postene over inn. Mange leietakere mottar en samlet regning for felleskostnadene som ikke er delt opp og spesifisert. Benytt da denne posten.
<b>SUM FELLESKOSTNADER</b>	
<b>FELLESKOSTNADER (kun eide bygg)</b>	
Skatter og avgifter	Dersom leietaker mottar informasjon om gårdeiers kostnader til Eiendomsskatt, Helseavgift, Feieravgift, oppgis den her. Vann- og avløpsavgift inklusiv betaling for forbruk oppgis i egen post.
Forsikring	Kun forsikring knyttet til bygget- ikke utstyr og personer. Brannforsikring, innbruddsforsikring, ansvarsforsikring, egenandel. Ved skader skal eventuell egenandel føres her.

#### 4.4 Relation to enterprises, building project and real estate

NfN is concerned with property management. Statsbygg has not been very active in using numbers from NfN in its planning of new buildings nor in its management of its existing ones.

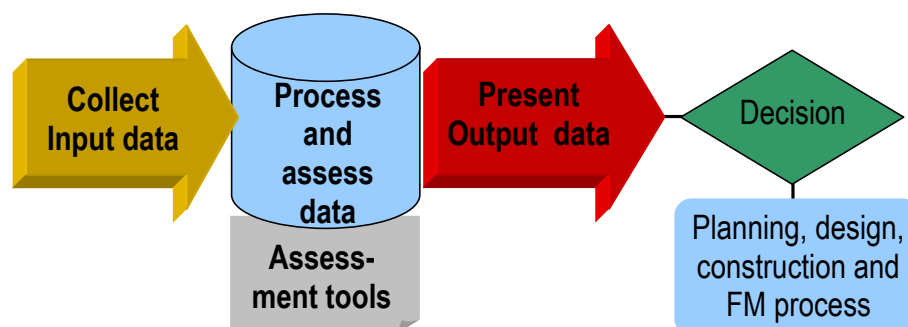
#### 4.5 Visions and innovations for future improvements

When it comes to the choice of indicators, NfN has added rental cost in the newest version and they are considering adding quality indicators. Further developments of the template for key indicators are being considered. They consider also a web-based solution and cooperation with other networks.

## 5. Discussions and conclusions

This chapter discusses the lessons learned from Statsbygg's experiences with benchmarking in general and in relation to the Statistics Norway office building.

Figure 8. CREDIT information model in relation to decisions in the planning, design, construction and facility management processes.



### 5.1 Buildings - lessons learned and recommendations

At the individual Statsbygg buildings (in this case Statistics Norway, Kongsvinger) the property managers are reporting that the key performance indicators collected regarded cost are absolutely crucial in planning the property management of the building. Without these numbers the rent could not be calculated properly and the budget and planning would suffer greatly. Regarding energy consumption, having these numbers are crucial in improving Statsbygg's energy efficiency at Statistics Norway.

The numbers collected is a good starting point for improving the property management of the building. However, collecting the numbers is costing time and effort and the motivation for conducting benchmarking thus suffers. The standardized definitions and instructions from the head office regarding the collection of the key performance indicators and how to report them is a big help for the property managers and without them the job would not have been done properly.

### 5.2 Enterprises - lessons learned and recommendations

For Statsbygg as a company the key performance indicators are a necessity, both for its planning and budgetary work, but also for its reporting to the Ministry of Government Administration and Reform. The numbers are also a good starting point for analyses and learning from best-practices within the company.

However the activity of collecting and assessing the data is not cost effective. The numbers of indicators should also be expanded. Statsbygg has yet not been able to improve its services or its efficiency by learning from other agencies or companies reporting to NfN.

### 5.3 National benchmarking - lessons learned and recommendations

Statsbygg participates in both the national benchmarking networks (NBEF and NfN) as a result of a policy decision. When it comes to using data for benchmarking purposes, Statsbygg uses its own internal data as comparison points. One reason why Statsbygg chooses to rely on its own data, is that some of the data from other participants in the networks might not be comparable. Some have for example different ambitions for the long term level of maintenance.

Statsbygg believes that it is important to keep focus on the physical usage of energy rather than energy costs. The reason is that fluctuating energy prices might distort the benchmarking.

## CREDIT Indicator Classification

Company: Statsbygg

Role: Property management

Project: Statistics Norway

Country: Norway

Date: 01072009 Sign: Morten Dybesland

## To which degree are the following indicators preferred?

Please use the following scale when answering:

2 Always - strategic and very important

1 Sometimes, depends upon the project

0 Not at all, unimportant

Table 2. Questionnaire to evaluate CREDIT Indicator Classification.

### Cost and performance indicators

	Public demands	Internal project demands	Measures during building process	Measures when finished project	During facility management	Comments and other indicators recommended
<b>1. Cost, price and life cycle economy (LCE)</b>						
11 Capital, investment, construction, commissioning cost						Construction covers this in Statsbygg
12 Building services related to operation and maintenance		2				
13 Business services related the activities in the building		2				
<b>2. Location, site, plot, region and country</b>						
21 Location and address	2	2				
22 Plot opportunities	2	2				
23 Spatial solution and property aesthetics						Important, covered in planning / construction phase
24 Surrounding services						Important, covered in planning / construction phase
25 Social values	2	2				
<b>3. Building performance and indoor environment</b>						
31 Category of building, quantity, size and area		2				
32 Safety and security of burglary		2				
33 Usability and adjustability	2	2				
34 Thermal comfort						Important, but no key performance indicator
35 Air quality and health						Same
36 Visual climate						Same
37 Acoustic climate						Same
38 Aesthetics of building and indoor spaces						Same
39 Feelings and sensations						Not focused on yet
<b>4. Building part and product performance</b>						
41 Category of building parts, quantity, size and area	2	2				
42 Safety		2				Important, but no key performance indicator
43 Durability						Same
44 Thermal quality						Same
45 Impact on air quality						Same
46 Lighting quality						Same
47 Acoustic quality						Same
48 Aesthetic quality as form, surface, colour and details						Same
49 Feelings and sensations						Nor focused on yet
<b>5. Facility performance in operation and use</b>						
51 Category of tenancy and operation and area of space		2				
52 Applicability of the facility		1				Some aspects
53 Operation		2				
54 Services		2				
55 Social performance		1				Some aspects
<b>6. Process performance in design and construction</b>						
61 Category of process, supplier and organisation						Covered in construction
62 Resource control and project management						
63 Health and safety and work environment						
64 Quality management						
65 User involvement and cooperation						
<b>7. Environmental impact</b>						
71 Resource use	2	2				
72 Emissions	2	2				
73 Biodiversity						





This report describes the results a case study of Statistics Norway. The study was undertaken as part of the Nordic and Baltic project CREDIT: Construction and Real Estate – Developing Indicators for Transparency.

The analysis is aiming at three levels: the project or building, the firm and the national benchmarking system.

The case study describes the usage of key indicators in relation to the Statistics Norway building in Kongsvinger.

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