

SBi 2010:29

Baltic Sea House

CREDIT Case FI02



Danish Building Research Institute
AALBORG UNIVERSITY

CREDIT[©]

Construction and Real Estate -
Developing Indicators for Transparency



Baltic Sea House

CREDIT Case FI02

Merja Julin (Sponda Oyj)
Jarmo Pousi (Ovenia Oy)
Kari Nissinen
Veli Möttönen
Janne Porkka

Title Baltic Sea House
Subtitle CREDIT Case FI02
Serial title SBI 2010:29
Edition 1 edition
Year 2010
Authors Merja Julin,(Sponda Oyj), Jarmo Pousi (Ovenia Oy), Kari Nissinen, Veli Möttönen, Janne Porkka
Language English
Pages 20
References Page 20
Key words Baltic Sea House, enterprises, benchmarking, buildings, open-plan office

ISBN 978-87-563-1441-1

Photos Sponda Oyj
Cover Sponda Oyj
Printer

Publisher Statens Byggeforskningsinstitut
Danish Building Research Institute
Dr. Neergaards Vej 15, DK-2970 Hørsholm
E-mail sbi@sbi.dk
www.sbi.dk

Extracts may be reproduced but only with reference to source: *Julin et al. (2010). Baltic Sea House. CREDIT Case FI02. (SBI 2010:29). Hørsholm: Danish Building Research Institute, Aalborg University.*

Contents

Contents	3
Preface	4
Summary	5
1. Introduction and objectives.....	6
1.1 Objectives and work packages of CREDIT	6
1.2 Background, purpose and focus of the case study	7
1.3 Research design and methods applied in the case study	7
1.4 Reading instruction	7
2. Buildings – assessments in construction or real estate processes.....	9
2.1 The actual building, building parts and processes	9
2.2 The applied assessment methods and tools in the processes.....	10
2.3 Cost and performance indicators applied in the assessments.....	10
2.4 Relation to different enterprises and national benchmarking	14
2.5 Visions and innovation for future improvements.....	14
3. Enterprises – assessments and indicators internally applied	15
3.1 The actual enterprise, company and firm	15
3.2 Assessment methods and tools applied in the enterprise	15
3.3 Costs and performance indicators applied in the enterprise	16
3.4 Relation to building cases and benchmarking organisations	16
3.5 Visions and innovation for future improvements.....	16
4. National benchmarking – indicators, assessment and organisation	17
4.1 The actual benchmarking organisation and its purpose.....	17
4.2 Assessment applied in the benchmarking organisation	17
4.3 Cost and performance indicators applied in benchmarking	17
4.4 Relation to enterprises, building project and real estate	17
4.5 Visions and innovations for future improvements.....	17
5. Discussions and conclusions	18
5.1 Buildings - lessons learned and recommendations.....	18
5.2 Enterprises - lessons learned and recommendations	19
5.3 National benchmarking - lessons learned and recommendations.....	19
References	20

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).
- Pekka Huovila, VTT.
- Päivi Hietanen, Senate Properties.
- 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

Buildings (WP4) summary

The goal of the CREDIT case Study Baltic Sea House was to gather up and collate the performance related indicators, measures and reports that the owner and the manager of the building utilize in their daily, weekly, monthly and yearly routine during the using period of the building.

The second goal was to find out what kind of new indicators and measures might be needed and useful for the building owner and the manager. Furthermore the occupiers were asked which performance indicators they consider important and if there is any need for new indicators. This was done by interviewing three tenant organizations.

Enterprises (WP5) summary

For the building owner the performance of the building is a vital thing. Better the building performance, easier the building to use and to rent. The owner of this Case Study building, professional real estate business company Sponda Oyj, has its own performance mapping systems that can not be published in detail in this case study report.

National benchmarking (WP6) summary

In Finland there are certain companies that concentrate on benchmarking of real estates, buildings and premises. On the national level some of the leading enterprises are Catella, KTI Kiinteistötieto Oy, Newsec, Statistics Finland and VTT. Most of the data produced by these companies is meant for purposes of real estate business. We believe that there is a growing demand for new transparent key performance indicator system for real estate industry in Finland.

1. Introduction and objectives

1.1 Objectives and work packages of CREDIT

Sir Winston Churchill once said, “We shape our buildings, afterwards our buildings shape us” (28th 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

The goal of this case study was to gather up and collate the measures and reports that the owner and the manager of the building utilize in their daily, monthly and yearly routines during the use period of the building. The second goal was to find out what kind of new indicators and measures might be needed and useful for the building owner and the manager. Furthermore the occupiers were asked which performance indicators they consider important and if there is any need for new indicators. This was done by interviewing three tenant organizations.

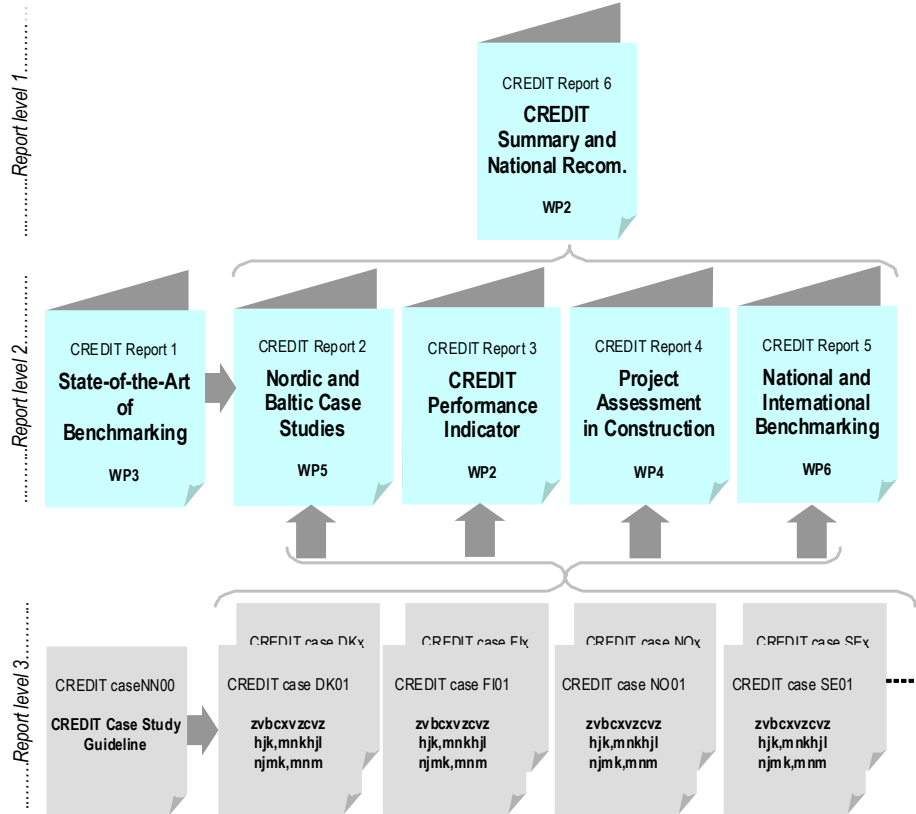
1.3 Research design and methods applied in the case study

This case study has been conducted as an action research by researchers and members of a client organisation seeking to improve their situation (Greenwood and Levin, 1998). We have gathered data in this case study from multiple sources to enhance reliability and trustworthiness of the results (Robson, 2002). Documents, direct observations, interviews, questionnaires and to some extent also standardised tests have been methods for data collection. Research setting is exposed to changes, and because of this quantitative method has been used in collecting indicator and process data. Then qualitative analysis has been employed to the results.

1.4 Reading instruction

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.

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



2. Buildings – assessments in construction or real estate processes

The Baltic Sea House, Itämerentalo in Finnish, was designed by professor Teräsvirta and built in 1971. The building comprises three underground and five above ground floors and its foundations are about 10 m below the adjacent sea level. Besides, the Baltic Sea House was the first open-plan office building in Finland. It is owned by Sponda Oyj and managed by Ovenia Oyj, and thoroughly renovated in 2002.

2.1 The actual building, building parts and processes

The building has a total gross floor area of 22,000 m². There is around 9,000 m² of rentable office space on five floors and parking space for tenants in the basement. There is also a wide range of services in Ruoholahti area within the immediate vicinity of the building.

- Region: Helsinki metropolitan area, Ruoholahti (3.5 km from Helsinki City Centre)
- Gross floor area: 22 117 m², net floor area: 14 602 m² and rentable floor area: 11 171 m²
- Number of employees: 400
- Car parks: 99
- Central heating and cooling systems
- Ventilation system: mechanical + heat recovery

Services in the building:

- Catering services (Sodexo Oy): number of seats 55
- Conference and meeting rooms
- Lobby and office services
- Operation and maintenance services
- Security services
- ICT services
- Wide scope of additional services are available in the immediate vicinity for example in the Ruoholahti Shopping Centre.



Figure 2: Bird's eye view to Ruoholahti Area.



Figure 3: Baltic Sea House (Image courtesy of Sponda Oyj).

2.2 The applied assessment methods and tools in the processes

The following reports were studied when collecting indicators and measures utilized by the owner and manager of the Baltic Sea House:

- continuous/monthly energy and water consumption monitoring
- yearly customer satisfaction survey (KTI Kiinteistötieto Oy)
- yearly FM cost and energy consumption benchmarking (KTI Kiinteistötieto Oy)
- customer's service requests, web based service request system (FIMX)
- failure statistics produced by the building automation and control system
- condition surveys done by Ovenia Oy twice a year

New indicator needs were gathered during discussions (interview study) with the representatives of the owner, manager and three tenant organizations of the Baltic Sea House.

2.3 Cost and performance indicators applied in the assessments

Primary objective in CREDIT WP2 is to present a list of key indicators applicable in the life cycle of buildings and setting a new international standard widely accepted in the Nordic and Baltic countries. The end result of this work, the CREDIT indicator classification, is developed upon the experiences from the best buildings and enterprises and on detailed international standard and research knowledge to promote value generation. This case study follows nationally agreed Finnish indicators on cost and performance because the CREDIT indicator framework was not finished when this case study has been implemented.

LOCATION AND ARCHITECTURE (L)

PLOT OPPORTUNITIES

Site characteristics

L2 Sea level

- About 1 1/2 underground floors (cellars) under the sea level

L3 Proximity of sea or lake

- Class 1: (< 1km), sited on the sea bank

L7 Proximity of infrastructure

- Class 1: (At site border, short connection distance)

ACCESS TO SURROUNDING SERVICES

L15 Distance to public transport

- Distance to Helsinki-Vantaa international airport: 21 km
- Distance to Helsinki railway station: 3.5 km
- Distance to tram stop: 400 m, interval of trams 10 min
- Distances to bus stops: 500 m, 600 m, 1000 m, interval of busses 22 min
- Distance to subway: 900 m, interval of trains 5-10 minutes

L16 Distance to pedestrian and bicycle

- Distance to bicycle path: 100 m
- Distance to footway: 20 m

L17 Extent of services in the vicinity

- Distance to growing neighbourhood: 800 m to Ruoholahti Shopping Centre
- Many canteens and restaurants in the neighbourhood
- Car wash

L18 Distance to green and open spaces

- Distance to Ruoholahti Park: 1.1 km

BUILDING PERFORMANCE (P)

INDOOR ENVIRONMENT AND HEALTH

Thermal quality

P1 Thermal comfort

- S1 (Finnish Society of Indoor Air Quality and Climate FiSIAQ: 2001) / Category I (EN 15251:2007)

Air quality

P3 Air quality

- Category I (EN 15251:2007)

SAFETY

P17 Meeting present needs and regulations

- The building was thoroughly renovated to fulfil present-day requirements in 2002.

P18 Human security

- Access control system in the building
- Private security company, mobile patrolling

P19 Material security

- Access control system in the building
- Private security company, mobile patrolling
- Condition assessment every 5th year

REAL ESTATE BUSINESS (B)

APPLICABILITY OF THE FACILITY

B1 Branding and rating certificates

- Finnish Energy Certificate

B3 Workplace management

- Space use: 36.5 Net Floor-m² per employee that is a bit above the median value of office buildings in Finland (KTI Kiinteistötieto Oy)

OPERATION AND MAINTENANCE

B4 Failures

- Overall condition class 4 (1 to 5 scale)
- Windows and part of wastewater drain system is old
- Building automation system reports failures
- Internet based feedback system for tenants

B5 Frequency and significance of failures

- Number of feedback (complaints) from tenants during one year 151
- Distribution of complaints during one year (Electricity 34%, Construction 22%, Cleanliness 16%, HVAC 11%, Thermal comfort 9%, Appliances 3%, Courtyard 3%, Lifts 1%)

- Priority class (normal 53%, urgent 35%, duty work 12%)
- B6 O&M manual with short and long term measures
- Yes (condition assessment and budgeting ever 5th year)
- B7 Systematic procedure for updating the manual
- Yes (Manager company, Oventia Oy, is responsible)
- B8 Training of personnel organized
- Yes

SERVICES

- B9 Availability of facility services
- Catering: 55 seats that is 0.14 seats per employee
- Catering services (Sodexo)
- Conference and meeting rooms; net-based booking system (Sponda)
- Lobby and office services
- Operation and maintenance services
- Security services
- Waste disposal (extra waste)
- ICT-services
- B10 Service to find a proper space
- Yes
- B11 Spectrum of services
- Wide range of services in Ruoholahti area within the immediate vicinity of the building.

PARKING

- B12 Number of parking places
- 99 car parks: 0.25 car parks per employee.
- B13 Quality of parking places
- In the garage 74 car parks and outside uncovered with plug box 25

SUMMARY SET (S)

- S2 User satisfaction questionnaire and S3 Overall user satisfaction
- Yearly user satisfaction study by KTI Kiinteistötieto
- Results are described in the Table 1.

Table 1: The results of the KTI's user satisfaction study of Baltic Sea House. The shares of very satisfied, satisfied fairly satisfied, fairly dissatisfied and dissatisfied.

	Very Satisfied	Satisfied	Fairly Satisfied	Fairly Dis-satisfied	Dis-satisfied	Very Dis-satisfied
Customer satisfaction to the spaces						
Applicability of the spaces for own activities	11 %	56 %	33 %	0 %	0 %	0 %
Functionality of the floor plan	22 %	67 %	11 %	0 %	0 %	0 %
Lightning	22 %	33 %	33 %	0 %	0 %	11 %
Indoor air quality	22 %	33 %	22 %	0 %	22 %	0 %
Modifiability of spaces	0 %	44 %	44 %	0 %	11 %	0 %
ICT infrastructure	11 %	56 %	0 %	22 %	11 %	0 %
Location	22 %	67 %	11 %	0 %	0 %	0 %
Neighbourhood and its services	11 %	44 %	33 %	0 %	11 %	0 %
Transport facilities	22 %	67 %	11 %	0 %	0 %	0 %
Parking facilities	0 %	0 %	33 %	0 %	67 %	0 %
Customer satisfaction to the owner						
Satisfaction to the renter	11 %	33 %	44 %	0 %	11 %	0 %
Understanding of Customer Needs	33 %	11 %	33 %	0 %	11 %	11 %
Professional skills, expertise	22 %	22 %	56 %	0 %	0 %	0 %
Clarity of the rental terms	0 %	63 %	38 %	0 %	0 %	0 %
Reachability of the contact person	33 %	44 %	22 %	0 %	0 %	0 %
Ability to fulfill the agreements	22 %	33 %	44 %	0 %	0 %	0 %
Fluency of customer service	11 %	44 %	33 %	0 %	11 %	0 %
Communication	11 %	44 %	22 %	0 %	22 %	0 %
Price-quality ratio of the sapce	11 %	44 %	33 %	0 %	11 %	0 %
Image of the owner as a renter	11 %	33 %	56 %	0 %	0 %	0 %
Ability to decide	33 %	33 %	33 %	0 %	0 %	0 %
Customer satisfaction to the services						
Satisfaction to services	0 %	57 %	43 %	0 %	0 %	0 %
Cleaning of the common facilities	0 %	20 %	80 %	0 %	0 %	0 %
Waste management	0 %	43 %	29 %	0 %	29 %	0 %
Caretaking of outdoor areas	33 %	33 %	33 %	0 %	0 %	0 %
Services in fault and emergency situations	0 %	43 %	29 %	0 %	29 %	0 %
Janitorial services	0 %	57 %	29 %	0 %	14 %	0 %
Safety and security	29 %	43 %	29 %	0 %	0 %	0 %

S4 Return on Investment

S5 Development potential, upside

IMPACTS (I)

ENVIRONMENTAL IMPACTS

I1 Carbon footprint

- Energy performance rating: 193
- Heating consumption: 2.46 kWh/heated m3/month that is just below of the median value of office buildings in Finland (KTI Kiinteistötieto Oy)
- Electricity consumption: 55.5 kWh/m3/year, it is well above of the median value of office buildings in Finland (KTI Kiinteistötieto Oy)

COSTS

I3 Operation and maintenance costs

- Operation and maintenance cost deviation and rank are shown in the Figure 4 and Table 2.

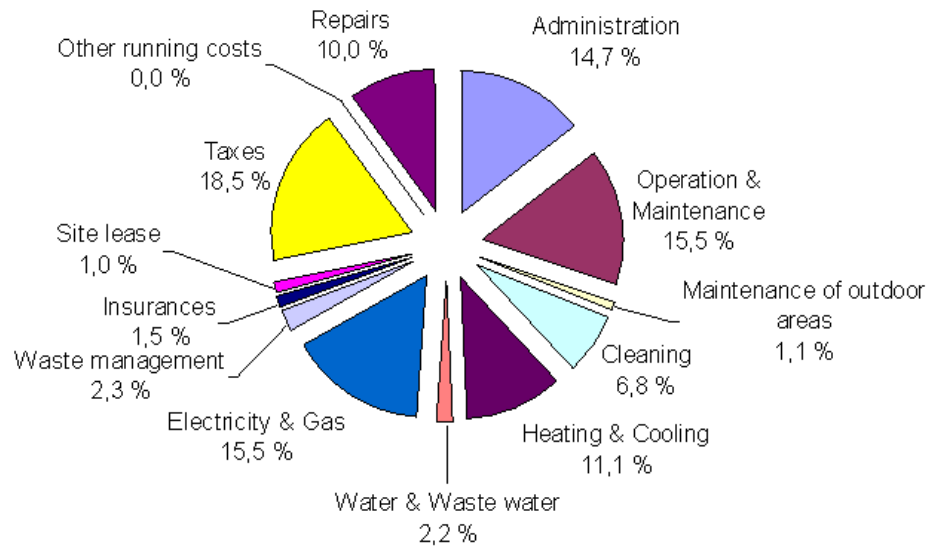


Figure 4: Operation and maintenance cost deviation of the Baltic Sea House.

2.4 Relation to different enterprises and national benchmarking

Sponda Oyj (including Baltic Sea House) takes part in the national FM cost and customer satisfaction benchmarking surveys of the office buildings that are run by KTI Kiinteistöieto Oy. Example of FM cost benchmarking results is shown in the table 2.

Table 2: Operation and maintenance cost analysis. Values of The Baltic Sea House (€/m², month) compared to median values of office buildings in Finland. (Source: KTI Kiinteistöieto Oy).

	<Lower quartile	Lower quartile - Median	Median - Upper quartile	>Upper quartile
Administration			X	
Operation & Maintenance			X	
Maintenance of outdoor areas		X		
Cleaning	N.A.			
Heating & Cooling			X	
Water & Waste water			X	
Electricity & Gas		X		
Waste management			X	
Insurances			X	
Site lease		X		
Taxes		X		
Other running costs	N.A.			
Repairs		X	X	

2.5 Visions and innovation for future improvements

Certain indicator needs were identified during the indicator collection. Future improvements concerning indicators were gathered by occupier interviews.

3. Enterprises – assessments and indicators internally applied

3.1 The actual enterprise, company and firm

Sponda Oyj is a real estate investment company that specializes in leasing business premises and developing and owning properties.

By developing business premises into attractive, a tailored business environments, Sponda promotes its customers' success. With its innovative, customer-orientated solutions, and high-quality properties, Sponda actively develops the best practices in its sector and enhances the environment and cityscape in a responsible way.

Sponda's office, retail and logistics properties are located in the largest cities in Finland and Russia. The properties in Finland are mainly located in the Helsinki metropolitan area and in Oulu, Tampere and Turku. In Russia Sponda owns properties in St Petersburg and Moscow. The total leasable area of Sponda's investment properties is about 1.5 million square metres and consists of office and retail space, shopping centres and logistics properties. The fair value of the property portfolio is EUR 2.8 billion (30 June 2009).

The company's operations are organized into four business units: Investment Properties, Property Development, Real Estate Funds and Russia. Sponda serves customers in Finland through nation-wide customer service center and ten regional offices. In addition Sponda has two offices in Russia: in Moscow and St Petersburg. Sponda's share is quoted on the Nasdaq OMX Helsinki. Sponda's vision is to be the first choice of customers seeking new business premises.

3.2 Assessment methods and tools applied in the enterprise

Sponda Oyj uses regularly the following assessment methods and tools:

- yearly customer satisfaction survey (KTI Kiinteistötieto Oy)
- yearly FM cost and energy consumption benchmarking (KTI Kiinteistötieto Oy)
- level of rent benchmarks (KTI Kiinteistötieto)
- special questionnaires for new tenants
- customer's service requests, web based service request system (FIMX)
- condition surveys done twice a year by Ovenia Oy
- condition assessments done by special companies
- updating long term maintenance plan once a year on the grounds of condition surveys and assessments
- failure statistics produced by the building automation and control system
- continuous/monthly energy and water consumption monitoring
-

3.3 Costs and performance indicators applied in the enterprise

Cost and energy consumption indicators applied by Sponda Oyj are listed in the table 3. Sponda Oyj utilizes various key performance indicators produced by FIMX maintenance system and condition surveys and assessments.

Table 3. Cost and energy consumption indicators applied by Sponda Oyj

Administration	€/m2, month
Operation & Maintenance	€/m2, month
Maintenance of outdoor areas	€/m2, month**
Cleaning	€/m2, month*
Heating & Cooling	€/m2, month
Water & Waste water	€/m2, month
Electricity & Gas	€/m2, month
Waste management	€/m2, month
Insurances	€/m2, month
Site lease	€/m2, month
Taxes	€/m2, month
Other running costs	€/m2, month
Repairs	€/m2, month
Heat Consumption	kWh/heated m3/month
Water Consumption	m3/net floor area/year
Electricity Consumption	kWh/m3/year
* m2: cleaning area	
** m2: outdoor area under maintain	

3.4 Relation to building cases and benchmarking organisations

Sponda Oyj co-operates constantly with KTI Kiinteistötieto Oy that is one of the leading real estate benchmarking organizations in Finland.

3.5 Visions and innovation for future improvements

Traditionally Sponda Oyj has taken part in many real estate research and development projects in Finland. Some future improvement interests focus on special matters of risk management, i.e. indoor air quality, more detailed market analyses and also ecological impacts of real estates.

4. National benchmarking – indicators, assessment and organisation

4.1 The actual benchmarking organisation and its purpose

Some most important real estate benchmarking organizations acting in Finland are Catella Oyj, KTI Kiinteistötieto Oy, Newsec Oy, Statistics Finland and VTT.

4.2 Assessment applied in the benchmarking organisation

Every organization has their special benchmarking systems.

4.3 Cost and performance indicators applied in benchmarking

Every organization has their own indicators. As an example some of the indicators used by KTI Kiinteistötieto can be found in the table 3.

4.4 Relation to enterprises, building project and real estate

The benchmarking organizations mentioned above offer their services to any real estate owner/management/occupier. The scopes of services and types of contracts vary a lot case by case.

4.5 Visions and innovations for future improvements

Every organization has their own strategic goals and visions. The future improvement needs are based on these and it is not public information.

5. Discussions and conclusions

5.1 Buildings - lessons learned and recommendations

Sponda Oyj uses wide range of cost and performance indicators in its daily operations. These indicators are results of many different actions, systems and partners. The overall customer satisfaction of the tenants in Baltic Sea House is on the good level.

In this case study three occupier organizations were also interviewed in order to find out their opinions of some performance indicators and on what level the performance of the building and premises was. The interviewees were asked the importance of each indicator and how they found the actual performance. The importance was asked by scale 1 to 5 where 1 was not at all important and 5 was very important. The results of the importance of each performance indicator/item are shown in the table 4. The tenant organizations found all the indicators at least important (lowest average value 4,0).

Table 4. The average importance of the performance items according to three tenant organization interviews in Baltic Sea House.

Performance item/indicator	Importance of the item/indicator (Scale 1 to 5)
Rent	
- general information of the rent level in the area	4,0
- detailed composition of the rent	5,0
Quality of the building and indoor environment	
- brand and reputation of the building	4,0
- security and safety	5,0
- usability, flexibility and adjustability	4,0
- thermal comfort	5,0
- indoor air quality and healthiness	5,0
- cleanliness	5,0
- acoustics	4,7
- esthetics and visual signals	4,7
- feelings & sensations	5,0
Operation and maintenance	
- technical O&M	5,0
- caretaking of outdoor area	5,0
- waste management	5,0
- long term maintenance	4,3
User services	
- reception services	4,7
- catering	4,7
- meeting rooms	5,0
- car parking	4,3
- additional services available in neighbourhood	4,3
TOTAL	4,7

The tenants were also asked if they need any new performance indicators. According to the interviews the tenants want more information about the indoor air quality of the building and the premises. There is a need for some kind of new indoor climate verification system that shows clearly if the indoor circumstances and indoor air quality are good or poor. Another point that came up was some kind of “easy to understand”- classification system of the greenness of the building and the premises.

5.2 Enterprises - lessons learned and recommendations

Sponda Oyj’s evaluation of Cost and performance indicators listed in CREDIT Indicator Classification is shown in the table in appendix 1.

5.3 National benchmarking - lessons learned and recommendations

For benchmarking purposes it is essential that the indicators are exactly defined, uniform and easy to generate. This requires better and deeper co-operation from the actors.

The sophisticated management tools and systems of today produce huge amount of data. However this data is not fully utilized in practice. Refining this data could give a lot of added value to building owners, managers and occupiers.

References

KTI. (2008). User Satisfaction Survey in Baltic Sea House. Confidential report from KTI Kiinteistötieto Oy.

Robson. C. (2002). *Real world research*, 2nd ed., Oxford: Blackwell.

Greenwood, D.J. and Levin, M. (1998). *Introduction to action research: social research for social change*, Thousand Oaks, CA: Sage Publications.



This report represents the finding and results from the third Finnish case study (FI02) called Baltic Sea House. Work belongs to Nordic project Construction and Real Estate – Developing Indicators for Transparency (CREDIT), that represents a sectional view to case studies from varied building types in Nordic and Baltic countries: offices, housing, schools and nursery, shopping centres and hospitals. The work has been undertaken by the most prominent research institutes within benchmarking and performance indicators in construction and real estate, namely SBi (Denmark), VTT (Finland), SINTEF (Norway) and Lund University (Sweden), and partners from Icelandic Center for Innovation (Iceland), Tallinn University of Technology (Estonia) and Vilnius Gediminas Technical University (Lithuania).

1st edition, 2010

ISBN 978-87-563-1441-1