

# Do Swedish property management companies have necessary conditions for environmental management?

## An interview study on environmental data availability

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### Introduction

Moving towards sustainable development, decision-makers have to handle a new, more complex reality. Not only economic, but also social and environmental aspects are important. This paper focuses on environmental aspects in Swedish property management companies. Knowledge of environmental data, like energy use and material use are important. Circa 40 percent of the yearly Swedish material use and energy use are caused by the building sector. To reduce the environmental impact from the building sector changes have to be made.

Property managers are one of the key actors regarding material and energy use in the building sector. Since there is no consensus about environmental management in the building sector, actors like property managers make environmental decisions in different ways. The goal to reduce the environmental impact may be the same, but the results from environmental management are often vague. Quantitative environmental data will help property managers to measure environmental improvements. With environmental data property managers are able to evaluate companies' environmental performance in order to decrease the total environmental impact caused by property management. Hence, knowledge on environmental data will help the building sector to reduce their environmental impact.

There is a thirst for knowledge about environmental data related to buildings. This paper serve not only to slake the thirst of knowledge, but it also demonstrates possibilities for property managers to handle their environmental work towards less environmental impact.

### Objectives and method

The objective of the paper is to investigate necessary conditions for environmental management. Good knowledge and control of environmental data are important conditions for environmental management. Important environmental data are data on:

- energy use and emissions related to energy use,
- material use and data on material waste released,
- water use and data on wastewater released.

Environmental improvements in form of quantitative data are easy to measure and to control. Therefore, environmental data in form of quantitative data can serve better data knowledge than qualitative data. Since buildings often have lifetimes of more than 50 years, long-term data, preferably more than 10 years, serve better environmental data control regarding to buildings than short-term data for only one year.

Other important environmental related conditions for environmental management are awareness of:

- life cycle perspectives regarding management and building,
- environmental work,
- companies actor role and responsibilities in environmental work,
- data importance and
- time importance.

Personal interviews with persons in property management companies were carried out in an interview study. Interviewees were people with knowledge of environmental data (environmental coordinator and technical director) or the head of the company. The property management companies were divided into following categories: building type (multi-family housing companies and non-housing companies) and ownership (municipal, private and tenant-ownership). In each category, representatives with a significant building stock from companies in Gothenburg and western Sweden were interviewed. In total 12 companies were investigated.

Questions asked within the interview study concerned:

- Environmental and general management
- Environmental data regarding operation and maintenance (including repairs and renovation)
- Documentation routines for material and energy data

Personal interviews were recorded in form of interview notes and completed with information from annual reports, environmental declarations and companies' home pages. Complete information about the interview study can be found in Brunklaus & Thuvander (2002).

In order to check if these companies have necessary conditions for environmental management, the interview notes and other information were investigated to answer the following questions:

1. What kind of environmental data are available in Swedish property management companies? Are there other data available relevant as environmental data?
2. Which factors have an effect on environmental data availability?
3. What kind of other necessary conditions do property managers have for environmental management?

## **Environmental data available in Swedish property management companies**

Relevant environmental data for property management companies can be found among operational and maintenance data. Important environmental data are data on resource use and emissions.

### ***Environmental data on resource use and emissions***

*Energy use and emissions to air.* All property managers collect quantitative data for energy use, but just a few calculate emissions related to energy use. Emissions related to energy use are important because different energy sources like oil, gas or water energy lead to different amount of CO<sub>2</sub> emissions, which contributes to the greenhouse effect. Three types of data for energy use are collected: heating, domestic hot water and electricity. Differences are in time perspective and level of detail. Data on energy use are available per property, per building and per flat. Time perspectives range from two years up to ten years back. Companies use their energy data for different reasons: building comparison within the company, operation optimisation and efficiency (control optimisation, error determination and energy saving target) and environmental reasons. Data about energy use is very detailed because saving energy means both saving money and reducing environmental effects.

*Material use and material waste.* Material data is generally the most limited data category among the interviewed property management companies. Existing data on material are mostly qualitative data and data about environmental hazardous materials (PCB, asbestos, etc). Quantitative data as well as longer time perspectives have to be reconstructed from economic data or were not found. Material waste data, domestic waste or building waste, are important. Property managers can reduce their material use by reusing their material waste. Regarding domestic material waste data exist mainly about waste separation ability. Some cases about demolition include an inventory on building material waste.

*Water use and wastewater.* All property managers measure quantitative data on water use per property, per flat or per room level, but no wastewater data are recorded. Data on wastewater is important. Property managers have several possibilities to reduce their wastewater. They can reuse it as toilet water or do their own biological cleaning instead of giving it to the municipal wastewater cleaning.

### ***Use of environmental data***

Environmental data for property management companies are found not only among operational and maintenance data. For internal or external communication, environmental data are translated into environmental indicators or used in different environmental assessment tools.

*Environmental indicators* used among the property management companies were energy data for heating and electricity, data for water use and data for waste separation. One

company has even developed their own internal environmental index based on quantitative data on energy, water and waste. Besides, data for tenant change and transport were also observed. Data for tenant change can for example be used as an indicator for material use.

Environmental data are also used in *environmental assessment tools* for different purposes: Management tools for environmental management, Building tools for environmental building information and Material tools for environmental material information. Management tools used in the interviewed property management companies were three environmental management certification systems: one international (ISO 14000), one European (EMAS) and one local (Miljödiplomering by Miljöförvaltning in Gothenburg). The local certification is more simplified and used by most of the interviewed companies, while ISO 14000 and EMAS are also used as second certification. Building tools used by the interviewed property companies were five different tools, but only one LCA-based tool addresses the building as a whole (EcoEffect by KTH in Stockholm). Almost all the property management companies use one of these different applications. Differences are found between housing companies and non-housing companies. Non-housing companies focus more on the building, while for housing companies social aspects such as tenants' influence are important. Like building tools, material tools are more used in non-housing companies. List over chemicals and products that should be avoided exist in almost every company.

There are two reasons for the company not using an environmental assessment tool. First, environmental assessment tools do not necessary mean a better environmental performance of a company. A company with good knowledge in environmental issues can come to the conclusion that environmental assessment methods are not good enough to guide the company to a more sustainable development. In that case, no assessment method is used despite of the fact that the company has reached long in their environmental work. Second, knowledge can be regarded as negative for the company, because tenants can be suspicious about environmental risks, even if the levels are below threshold levels.

## **Factors with effect on environmental data availability**

Factors of different natures can have an effect on environmental data availability. In property management companies we found factors like environmental strategies, maintenance plan, environmental policies, use of evaluation methods, ownership, type of building and company size. Data loss has the most negative effect. Organisational change and turnovers of properties cause it.

*Environmental strategies.* Environment is only one of several strategy aspects in property management companies. Social aspects, customer focus or building stock refining are examples for other company strategy aspects. Essential strategies and routines are for the whole company (policy) even though companies' management questions are solved locally. This might be a problem of translating strategies and routines into local daily work, which can affect data availability. Environmental

strategies shown externally and internally can be different as well. During contact with tenants, companies choose to talk about environment, but internally they talk about money and energy savings.

*Environmental policies.* One of the most common environmental tools among property management companies is the environmental policy. Most of the 12 companies have an environmental policy. They are driven by regulations (for example ban of hazardous material like PCB), driven by “Natural Step”, driven by “Agenda 21” or by “eco-cycle thinking”. Environmental policies are giving directions for companies’ environmental work, which can have an effect on which data are collected.

*Use of evaluation methods.* Evaluation methods like environmental assessment of management, buildings and materials can have an effect on data availability. By using these methods companies are forced to collect certain data.

*Maintenance plan.* Maintenance plans among the interviewed companies are based on different aspects (tenant demands, statistical data and inspections), which can have an effect on data availability. Differences are also found among the companies. Non-housing private companies are just following necessities, while non-housing municipal companies are running after a structured 3 years plan with a planning phase, a preparation phase and an action phase. Companies with both housing and non-housing building stock manage each stock separately. Time perspectives regarding maintenance plan can also have an effect on data availability. There are time perspectives from one to ten years. Housing companies have time perspectives from 5 to 10 years, non-housing companies from 1-5 years and private non-housing companies only one year.

*Data loss.* Organisational change in form of reorganisations or replacements of staff and turnover of properties can generate data loss. Data loss might be the result if there is neither need nor interest or money for saving data. Common are internal data loss regarding to use of latest data upgrades. External data loss is caused by property turnovers. Depending on the company, property related data are following to the next owner or not. How often there are turnovers of properties is dependent on ownership. Municipal companies own their building over a longer time period (years up to decenniums) than private companies (just a few month in the extreme case).

*Ownership, type of building and company size.* Last but not least differences in ownership, in type of building stock managed (housing, non-housing, age) and in company size lead to managing differences and effect data availability. Housing companies for example manage the interior and the exterior building and have data on exterior an interior building, while non-housing companies who manage the exterior building just have only data on the exterior building.

## **Other necessary conditions property managers have for environmental management**

Besides good knowledge of environmental data there are other conditions important for environmental management. Here we present a few, only environmental related conditions. Companies are aware enough of some environmental aspects like environmental work, but they are not aware of life cycle perspectives, companies' actor role and responsibilities in environmental work, data importance and time importance.

*Awareness of environmental work.* Generally, property management companies are aware of the importance of environmental work. Most of the companies have an environmental policy, which shows that there is a will to work towards more environmental friendly management. Of course, there are also companies that use environmental policy in order to get a better environmental image.

*Awareness of life cycle perspectives regarding management and building.* Awareness of life cycle perspectives regarding management and building are not common among property management companies. Only one company comes to the conclusion that the material flows into the buildings have to be lowered in order to minimize the total environmental impact of their company.

*Awareness of companies actors role and responsibilities in environmental work.* As mentioned before, property managers' environmental work has an important role in reducing the environmental impact from the building sector. Property managers have an actor role in different system frameworks. They are customers of energy suppliers, material suppliers and water suppliers. They are costumers of municipal waste and wastewater treatment companies or suppliers for material waste. Besides, they are suppliers for flats and premises and landlords for tenants. Independent of which role they play customer role or supplier role, property managers can choose what they buy or sell.

Not every property management company is aware of every actor role and environmental responsibilities in different system frameworks. Some companies are aware of their influence towards other companies and tenants and some think that the customer has the power. Some companies are aware of their environmental responsibility, while other commented that tenants do have the responsibilities.

*Awareness of data importance.* Some companies are more aware of data importance in environmental work than others. There is only one company that has developed their own environmental index based on quantitative data on energy, water, and waste.

*Awareness of time importance.* In property management companies long-term time perspectives are needed for a better environmental control of operation and maintenance activities. Some companies are aware of the time perspective. They talk about today's short-term thinking and would prefer a long-term thinking like 50 years time perspective for environmental reasons.

## Conclusion

Property management companies have some basic environmental data, but knowledge of quantitative data especially material data could be better. Some data are available up to ten years back (energy) while others are not available over a longer period of time. Though, some environmental data can be reconstructed of from economic data (material), from other indicators (tenant change) or from assessment tools (management tools, building tools and material tools).

Differences in environmental strategies, maintenance plans, environmental policies and use of evaluation methods affects data availability. Even though using environmental indicators and environmental assessment tools can have a positive effect on data availability, some property management companies choose not to use them. Data losses are caused by organisational change and property turnovers.

Environmental strategies and data availability are dependent on ownership, type of building (housing, non-housing, age) and company size. Housing companies have a better data control than non-housing companies over their building stock, because they manage the inside and the outside of their buildings. Municipal companies have a better data control than private companies because their time perspective is longer. Municipal owners have for example longer time-series of energy data than private owners.

Regarding other conditions for environmental management, property management companies are aware of the importance of environmental work. Though, not every company is aware of their actor role and environmental responsibilities, aware of data importance, aware of time importance and aware of life cycle perspectives regarding management and buildings.

Concluding, property management companies have basic conditions for environmental management. The paper shows also that management strategies and data availabilities are different. Future studies will find out in what way these different strategies effect the environment.

## References

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