



Extract from the report to the
Public Accounts Committee on
the Danish Building and Property
Agency's use of life cycle costing
in government construction projects

May
2014

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1. Introduction and conclusion

1.1. Purpose and main conclusion

1. This report concerns the Danish Building and Property Agency's use of life cycle costing in government construction projects and how the agency has performed its general duties in the area. The report addresses a well-defined issue and is therefore characterised as a narrow report. The Danish Building and Property Agency is the largest public builder in Denmark and is responsible for elaborating rules and guidelines on government construction projects.

The concept of life cycle costing was introduced in the Danish State Building Act in 1971 (now the Danish Public Construction Act). Regulations concerning the application of life cycle costing in construction projects have existed since 2000, and were succeeded by new rules issued by the Danish Building and Property Agency in October 2013. Since 2001, the public budget guideline has prescribed that the concept of life cycle costing should be applied to the extent relevant on government construction projects and reported on in the appropriation documents. Government builders are thus required to apply life cycle costing techniques on construction projects to ensure that they are implemented in the most cost efficient manner taking into consideration the intended use and future operation and maintenance of the asset.

2. The purpose of the examination is to assess whether the Danish Building and Property Agency, to the extent required, ensures the use of life cycle cost estimates in government construction projects. The report answers the following questions:

- Has the Danish Building and Property Agency to the extent required applied life cycle costing techniques on its own construction projects?
- Has the Danish Building and Property Agency to the extent required supported the application of life cycle costing?

The audit approach and quality requirements to **narrow reports** are identical with those applying to Rigsrevisionen's other reports, but the scope of narrow reports is more limited.

Life cycle costing

In construction projects, life cycle costs include costs related to the initial establishment of the facility and operation and maintenance costs in subsequent years. Government builders may use estimates and calculations of life cycle costs to identify alternative solutions to bring down overall project costs.

MAIN CONCLUSION

The effort made by the Danish Building and Property Agency to ensure use of life cycle costing in government construction projects is considered inadequate by Rigsrevisionen. The agency has, however, taken steps to strengthen the guideline and follow-up on the application of life cycle costing in construction projects.

The Danish Building and Property Agency – and the bodies previously responsible for the area – have for several years been aware that life cycle costing has not been applied on government construction projects in general, amongst other because relevant calculation methods and experience data have not been available. Rigsrevisionen's review of five recent construction projects managed by the agency showed that the rules in force at the time had not been complied with. Nor did the life cycle cost estimates made at the time meet with the requirements of the new rules issued in October 2013. The review also showed that life cycle costing was not addressed specifically in the relevant government documents.

Nor was life cycle costing addressed in government documents concerning 14 other building projects reviewed by Rigsrevisionen. The Danish Building and Property Agency has, however, elaborated on life cycle costing in the government documents on eight public-private partnerships (PPP) and public-private collaboration projects (PPC). The agency has informed Rigsrevisionen that generally other tasks had been favoured at the expense of promoting life cycle costing, but the agency will now make an effort to ensure application and documentation of life cycle cost methods.

In the opinion of Rigsrevisionen, the statutory order and guideline from October 2013 will not suffice to promote the use of life cycle costing. The Danish Building and Property Agency has not defined clear guidelines on the application of life cycle costing, and guidelines and contracts that support life cycle cost estimates and calculations are not available to the individual builder and consultant. Rigsrevisionen therefore welcomes the agency's initiative to launch a project aiming to develop a life cycle costing methodology and thus strengthen, among other things, the collection of experience data.

Last, Rigsrevisionen finds that there is lack of compliance between the life cycle costing rules stated in the agency's guideline and those included in the budget guideline. The Danish Building and Property Agency and the Ministry of Finance have agreed to harmonise the budget guideline with the agency's life cycle costing requirements.