



Extract from the report to the
Public Accounts Committee on
cost overruns in national building
and construction projects

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I. Introduction and main findings

1. At its meeting in December 2007, the Public Accounts Committee asked Rigsrevisionen to submit a report on cost overruns in national building and construction projects along with recommendations to initiatives which can prevent cost overruns.

The examination considers two questions:

- What is the extent and causes of the significant overspending related to certain projects compared to the original budget which is based on the original appropriation (in the following referred to as “the original budget”)?
- How can the planning and implementation of national building and construction projects be improved?

The budget is based on the original appropriation made for a specific building or construction project.

Rigsrevisionen’s main objective of this examination has been to provide a number of recommendations to improve the process of building and construction projects. The recommendations are building on the current framework set for national building and construction activities.

2. The majority of the examined building projects are implemented by building administrations with expert knowledge in the respective areas, i.e. The Palaces and Properties Agency under the Ministry of Finance, the Danish University and Property Agency under the Ministry of Science, Technology and Innovation and “Forsvarets Bygnings- og Etablissements-tjeneste” (service unit responsible for the Danish Defence’s buildings, including cleaning, waste disposal, canteens, etc.) under the Ministry of Defence. The remaining building projects which Rigsrevisionen has examined in this report have been implemented by the Ministry of Health and Prevention, the Ministry of Culture and the Ministry of the Environment.

National construction projects fall into two categories: 1. National road network projects, which belong under the Danish Road Directorate, and 2. Railway network projects where the Public Transport Authority is in charge of the planning and Rail Net Denmark (Banedanmark) is responsible for the actual project implementation.

3. The examination comprises 49 projects (32 building projects and 17 construction projects). The original appropriation for these 49 projects exceeded DKK 10 million and the accounts for the projects have all been closed in the period 2003 – 2007. Rigsrevisionen has, in accordance with the Public Accounts Committee’s request, assessed the causes of the cost overruns related to certain projects. Rigsrevisionen has focused on cost overruns exceeding 10 percent of the original budget. Cost overruns of that size are considered significant in this report, because it appears from the budget guidance issued by the government that cost overruns amounting to maximum DKK 10 million or up to 10 percent of the total costs of certain projects may be covered and will not require presentation of a separate appropriation application to the Finance Committee.

Rigsrevisionen also examined a few of the projects which were within the original budget in order to determine whether special conditions had contributed to keeping cost within the original budget.

The total investment relating to the 49 projects amounts to approximately DKK 9 billion (price level at the time). Two large projects, DR Byen and the third phase of the Metro, are not included in the examination. The building of DR Byen is not subject to the building regulations governing national building projects and the third phase of the Metro is included in an overall examination of the Metro project initiated by Rigsrevisionen.

MAIN FINDINGS AND CONCLUSIONS

Around 80 percent of the examined national building and construction projects were implemented within the original budget, or cost overruns amounted to less than 10 percent of the original budget. The remaining projects (mainly within construction) showed significant cost overruns.

The examination identified specific conditions which notoriously increase the risk of cost overruns. On the basis hereof, Rigsrevisionen has elaborated five recommendations to initiatives which can contribute to reduce the risk of cost overruns in future building and construction projects.

This overall assessment is based on the following:

To a wide extent, the examined national building and construction projects have performed as budgeted, or cost overruns have been insignificant. However, in some instances the original projects have been subjected to, for instance functional adjustments which is why cost has been within the original budget or only marginally over the original budget. Cost overruns of more than 10 percent are mainly related to construction projects.

- 39 of the 49 examined projects, or 80 percent, were implemented either within the original budget or at cost overruns of maximum 10 percent.
- 10 of the 49 projects, or 20 percent, were significantly over the original budget, i.e. by more than 10 percent. These 10 projects included eight of the 17 construction projects and two of the 32 building projects.
- Certain risk factors, which are not to the same extent present in the other projects under examination, characterize the projects where costs are significantly over the original budget. These factors are: missing requirements specification, late changes to project design/function, errors or omissions on the part of the builder, contractor and consultant, unpredictable events like, for instance cyclical expenditure, soil condition and new regulations.
- Rigsrevisionen's review of three projects which were within the original budget showed that the cost of one of the projects was within the original budget due to the implementation of functional changes in the original project which had the effect that the objectives of the project were not fully achieved. In another project, tight finance management had resulted in savings which ensured that cost were within the original budget and the implementation of functional changes of significant importance to the objectives of the project was not required. In the third project, the original budget was overestimated due to the application of inadequate key indicators and consequently cost appeared to be within the original budget.

The planning and implementation of national building and construction projects can be improved. It will be possible for the institutions to counter the most frequently occurring risk factors if they follow the recommendations listed below:

In order to counter the impact of missing requirements specifications and late changes in project design/function, Rigsrevisionen recommends:

- Elaboration and use of project specific risk buffers on the basis of concrete analyses.
- Systematic collection and application of key indicators on unit prices in the construction area.
- Ensuring short interval between the decision to implement a project and the start of the project.

In order to counter the consequences of unpredictable events like, for instance cyclical expenditure, soil condition and new regulations, Rigsrevisionen recommends:

- Elaboration of catalogues of potential savings in the initial project phase.

In order to counter the consequences of errors and omissions on the part of the builder, contractor and consultant, Rigsrevisionen recommends:

- Systematic, key-indicator based collection of experience and information on contractors, consultants and others in the construction industry in order to strengthen the institutions' supervision of the partners involved in the project.