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Übersetzung Studienbrief »Kosten, Grundflächen und Rauminhalte im Hochbau«

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3 Costs, floor areas and volumes in structural engineering

3.1 Costs in the building and construction industry pursuant to DIN 276

3.1.1 Introduction

One of the main German industrial standards for building costs is DIN 276, drawn up in the 1930s and originally entitled ‘*Kosten von Hochbauten und damit zusammenhängenden Leistungen*’ (‘Costs of building construction and related professional services’). It has since been brought into line with the state of the art and basic economic parameters, and renamed ‘*Kosten von Bauwerken im Hochbau*’ (‘Construction costs in structural engineering’). The 12/2008 edition of DIN 276 remains valid at this time [5].

This latest version of DIN 276 defines building costs as follows:

Costs incurred in the building and construction industry include “*outlay for any goods, services, taxes, and charges that are necessary to prepare, plan and implement construction projects*”.

Costs in the building & construction industry

Amendments

DIN 276 has been amended as follows since the 1993-06 version:

- a) The title and structure of this DIN standard have been changed to extend its scope beyond buildings to other areas of the building and construction industry
- b) Its area of application has been reframed in accordance with the modified content
- c) The costing principles have been extended to represent principles of cost planning
- d) Principles of application have been framed for the concept of ‘cost projection’
- e) The principles of costing have been rewritten with the aim of achieving greater economic efficiency and cost certainty
- f) The costing stages have been extended and reframed with a view to ongoing cost planning
- g) Principles of application have been framed for the implementation of cost control and cost management
- h) The system for cost breakdown remains unaltered apart from some editing of the description
- i) A cost breakdown based upon the actual execution of the construction work (see *Section 3.1.8.2 Cost breakdown based on execution of construction work*) has been retained as an alternative
- j) The cost breakdown has been edited in accordance with the state of the art.

3.1.2 Scope

The DIN 276 standard applies to cost planning in the field of structural engineering, with a special focus on costing and cost breakdown. It extends to the costs for new builds, conversions, and modernisation along with the project-related costs; occupancy costs are covered by DIN 18960.

DIN 276 specifies terms used for cost planning in the building and construction industry and explains the distinctions between the different costs, thus creating a basis on which to compare costings.

The costs established according to this standard can also be used as a basis for other costing purposes (such as remuneration for contracted services, tax relief). However, the DIN standard doesn't allow for an evaluation of costs in terms of the relevant regulations.

3.1.3 Cost planning

The aim of cost planning is to ensure economic efficiency, cost transparency and cost certainty in the implementation of construction projects (definition according to DIN 276).

Aim and principles

Cost planning should be based on planning specifications (quantities and qualities) or cost projections, and should be carried out continuously and systematically throughout every phase of a construction project. Cost planning can observe either of the following principles:

- Keeping to the cost projection by making adjustments to qualities and quantities
- Defining qualities and quantities to minimise costs

3.1.4 Cost projection

The aim of cost projection is to increase cost certainty, reduce investment risks and encourage consideration of alternatives at an early stage in the planning process.

Aim and purpose

A cost projection can be drawn up on the basis of budget or cost estimates. Before a cost projection can be fixed, it is important to check its feasibility in terms of any further planning objectives. When fixing a cost projection, one must determine whether it is to serve as an upper cost limit or as a target figure for planning purposes. This approach should also be used for any forward projection of costs, particularly as a result of changes to the plan.

3.1.5 Costing

3.1.5.1 Costing principles

Costings serve as the basis for financing considerations and cost projections, cost control and cost management measures, decisions about planning, awarding contracts and executing the construction project, and as evidence of costs incurred.

Purpose

Costings should be seen as part of the cost breakdown. The costs must be listed and documented in full, including the details on which they are based.

Representation

If a construction project consists of several sections/phases (e.g. in term of function, time, space, or finance), separate costings must be drawn up for each phase.

Costing different phases

If a construction project involves existing building stock, a distinction should be made between the costs of demolition, restoration and rebuilding.

Projects involving existing

The value of existing building stock and re-used components must be accounted for separately within the relevant cost categories.

building stock

Internal/own labour The value of internal/own labour must be accounted for separately within the relevant cost categories. In the case of internal/own labour, one should enter labour and material costs which are commensurate with those that would be charged by a company.

Special costs In cases where costs are incurred due to exceptional site conditions (e.g. terrain, subsoil, surrounding area), special circumstances pertaining to the construction project, or requirements over and above those arising from the intended purpose of the building, such costs must be accounted for separately within the relevant cost categories.

Cost risks Costings should designate foreseeable cost risks according to type, scope and likelihood. They should likewise point out suitable measures to reduce, avoid, pass on, and manage cost risks.

Cost status and cost forecast A costing quotes figures which are valid at the time of costing, and is dated accordingly. Any forward projection of costs to the date on which the project is completed (cost forecast) must be accounted for separately.

Value added tax Depending on the respective requirements, value added tax (VAT) can be accounted for as follows:

- VAT is included in the cost data ('gross value')
- VAT isn't included in the cost data ('net value')
- VAT is only shown for individual elements of the cost data (e.g. if there are overarching cost categories)

The form of VAT accounting used must always be stated in the costing and when dealing with cost parameters.

Costing stages The costing stages (according to their purpose, necessary principles, and degree of detail) are defined in *Section 3.1.5.2 Cost framework* through to *Section 3.1.5.6 Statement of cost*.

3.1.5.2 Cost framework

Purpose of cost framework The cost framework serves as a basis for decisions pertaining to requirements planning and for considerations concerning fundamental economic feasibility and financing; it is also relevant when setting the cost projection. The following data forms the core of the cost framework:

- Quantitative requirements, e.g. space allocation plan with number of usage units, functional elements, and their surface areas
- Qualitative requirements, e.g. structural requirements, functional requirements, standard of facilities and features
- Details of the site (where applicable)

Within the overall costs that are indicated, one must – at the very least – show the construction costs separately.

3.1.5.3 Pre-tender cost estimate

Content The pre-tender cost estimate serves as a basis when making decisions about the preliminary planning stage. The following data forms the core of the cost estimate:

- Results of preliminary planning, particularly planning documents and drawings
- Quantity calculations for reference units in cost categories pursuant to DIN 277