

OPTIMIZATION OF ENGINEERING TASKS FOR SMALL AND MIDDLE-SIZED CONSTRUCTION SITES IN HOUSING CONSTRUCTION BY USING NEWER TECHNIQUES OF INFORMATION AND COMMUNICATION

Preparing the Application of Electronic Data Processing in Small Construction Firms

In the past years the pre-requisites for the introduction of electronic data processing (EDP) in small and middle-sized construction firms have been provided by data processing firms. The supply of hard- and software gives every firm - no matter what size - the chance to get support by computer facilities of their own. Considering the multitude of offered programs, the problems mainly lie within the selection of suited software, meaning software fit for the operational sequences of the firm.

The aim of the research report is to aid small and middle-sized construction firms in selecting the EDP-solutions appropriate for them. Doing that the techniques for project management in a firm meaning the engineering tasks were especially considered with regard to the introduction of EDP.

Firms planning to employ EDP should take this occasion to critically examine operational sequences and organisational structures. The renewal cannot be achieved by just buying a computer without being prepared to also renew managing and organisational structures. When introducing EDP a change in the existing, accustomed to working procedures in the office cannot be avoided. The used EDP-components hardware, software, orgware influence the structure of the whole administration by their complexity and cost efficiency. It is mandatory to represent and recondition the managing organisation in order to find possible weaknesses in management and to eliminate them as well as possible before employing EDP. Weaknesses in management cannot be rectified by EDP.

By commentating the summary of engineering tasks in part B and C of the research report the firms are given the chance to think over

their own operational sequences and to possibly improve the conditions for the engineer in order to rationalize the course of construction and by that reducing the costs.

Based on these reflections the requirements for a practical use of EDP are formulated with the help of varied checklists. These checklists follow the modular set up of the software available on the market as well as possible.

The checklists are divided into the working section:

- I. preparing a tender
- II. rendering accounts
- III. ascertaining quantities
- IV. working up a contract and controlling the construction site
- V. planning terms and capacities
- VI. day work

This way it is possible to limit the use of the checklists to those needed for a special range of application.

The contractor can therefore compare software beforehand and judge them according to his special demands.

To round off, basic questions when choosing the hardware were dealt with in a further chapter.

In the last part of this report new techniques of information and communication and their employment up to now were summarized.