



FACULTY OF ARCHITECTURE, CTU IN PRAGUE

**Examination Issues for the Final State Exam in the Course Block  
BUILDING ECONOMICS and MANAGEMENT**

Architecture and Urbanism Master follow-up degree programme

Guarantee of the Final State Exam – Department of Building Construction 15 124

**PRINCIPLE AND EXAM ISSUES**

**PRINCIPLE**

The master's final examination should verify the student's ability to approach **independently** the problem/assignment solved and to introduce the manner of its **solution**. The state examination differs

from the ordinary examinations in particular subjects in its form: this examination does not primarily require a number of partial information and data but, on the contrary, it concentrates on the depth of the theme **comprehension** and the quality of the creative **approach**. Therefore, the main essence is not a presentation of encyclopaedic knowledge but a debate on the theme. The student presents his own understanding of the theme (cc. 7 min) and consequently answers the complementary questions of the examining board (cc. 7 min). The capability of orientation in the thematical area is assessed as is finding phenomena, information and approaches substantial for the architectural design and depth of knowledge. The source material for preparation for the exam is primarily the content of requisite subjects of the master's study at FA CTU and the relevant literature. Gathering knowledge of relevant themes from other subjects within the study and from individual sources is also required.

**SOURCE MATERIALS**

The source material for the examination is primarily the content of the compulsory **subjects** within the master study programme at FA CTU and the corresponding **literature**. Supposed is also acquiring knowledge of the themes concerned and of the other subjects within the study programme and from individual sources as well. An essential part of the answers will be introducing **examples** from practice, i.e. possibilities of real **utilization** of the particular knowledge, i.e. links to both theoretical and practical **sources**.

**EXAM ISSUES**

**1. Position of an architect in each particular stage of scheduling and implementation in the building process.**

Orientation of a future graduate from the Faculty of Architecture in the environment of market economy and in the stages of the projects life cycle, basic economic problem, macroeconomic cycle. Building market, its basic characteristics, and specific properties of structural engineering. Contractors system, mechanism of building market, offer and demand. Organization of the investment process, participation of the architect, investor, contractor and further subjects in the scheduling and implementation in the building process (DaB, PFI).

**2. Setting the total project costs, architects and engineering works as a part of architectural studies and designs.**



The structure of the carried out design and engineering activities in the scheduling and implementation of buildings. Hourly rates. Setting the demand factor expressing the character, function, significance and purpose of the building (commission). The way of setting the price, composition of the bidding price, its calculation, costs, price negotiation, price contract. The bidding budget in the preliminary project scheduling, background papers and instruments for the working out of the budget for the building costs setting.

### **3. Total costs of the project, their purpose and content necessary for the process of decision and the evaluation of the investment building-up.**

The estimation of total costs of the building in the scheduling stage of the investment cycle as one of the important background papers for the decision on further stages of the investment. The characteristics of essential component parts of the building with regard to its future utilization and necessary costs. The role of depreciation quota on project efficiency.

### **4. Investments, capital expenses, economic efficiency.**

Characteristics of investments, their forms, the meaning of "to invest". Investment, its constituents and their importance for economic efficiency. Economic opportunities and criteria for their evaluation. Principles of the economic efficiency measurement. Basic quantities entering into the investment evaluation, costs, sales, revenues, interests, creation of profit, labour productivity. Indicators of economization – efficiency, their purpose and significance. Economic efficiency of a project and its criteria.

### **5. Techno-economic study within project phases (feasibility study).**

Formulation of commercial, technological, financial and economic requirements for the project (opportunity study, PEST anal.). The position of the architect in the relationship: client (customer), public concern, environment, within the observation of safety regulations during the performance, utilization, hygienic requirements and purposeful expenditure of financial means (EIA, IPPC). Principles of variant solution. Setting the project objectives, size and location. Basic characteristics of marketing and its strategies. Financial and economic aspects of the project. Initial – in use – manufacturing – decommissioning – disposal cost.

### **6. Utilization of decision methods during the choice of architectural, construction and material variants.**

The process of decision as an inseparable part of influencing the process of the architect's activities. Rules of the decision process, analysis of the problem, determination of objectives and criteria, the setting of alternatives, measurement of usability and risks under one or more criteria. Choice of an alternative under security and under risk conditions. The role of information.

### **7. Methods of network analysis as a help for the solution to complicated links with time and capacity demands in the project and engineering activities of a graduate from a faculty of architecture.**

The significance and utilization during planning and management of the scheduling and implementation of the building-up projects. The organizational aspects of the processes – activities, current methods and their features. The methods of a critical path – CPM. Basic elements and rules, nodes, arrows - activities, BKM activities in precedence diagrams, scheduling activities and conditions, links between activities. Network diagram, way of constitution, paths in a network diagram, calculation of CPM – the duration time of the project and its reserves. Balance of resources: evaluation of time, material sources, financial needs, costs and the workers' needs. Advantages and disadvantages of CPM method.



## **8. Graphic methods of building-up scheduling**

Types of building-up scheduling methods, their principle and characteristics, advantages and disadvantages, mutual comparison of methods; continuous method – rhythmical and rhythmless streams, calculation and drawing in a space - time diagram; implementation of methods during the construction of building ensembles and buildings; influences of building-up methods on urban, architectural and construction solution; optimization of continuity and distances of activities and streams among themselves.

## **9. Building Code and related provisions - basic concept**

- systematics of the Building Code and broader legal context (legal regulations of special character
- systematics of land planning
- systematics of the building act
- administrative procedures carried out in coherence with the Building Code; special 31.3.09 administrative procedures and special building institutions and other administrative bodies
- obligatory statements and their place in the process of land planning and in the administrative procedures carried out in the regime of the Building Code
- general and specific technical requirements for building-up
- Building Code and the exercise of profession; activities of authorized persons, other persons with regulated activities and activities of authorized supervisors.

## **10. Exercise of a profession (professional regulations and professional documents)**

- constitutional framework for the exercise of a profession and the structure of the law on the exercise of a profession; sphere of action of the professional self-administration; sphere of action of authorized persons
- survey of activities liable to a special legal regime related to building-up (authorized persons, authorized supervisors, persons entitled to exercise further activities related to building-up)
- concept of professional standards for performance and documentation in land planning (including the setting fee)
- concept of professional standards for performance and documentation in the designing of buildings (including the fee settings = soft cost of the project)

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