Project phases II. Tendering-construction-operation

Construction management 2.
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In practice, design, procurement and construction often overlap.
Tendering - contracting

Documentation for building consent → realising?

Terms

• **Client** (owner): gets the project financed, designed and built
  • **Public** owners – have to proceed in accordance with law
  • **Private** owners – individuals, partnerships, corporations
• **Construction work** is accomplished by **contractors**
  • **Specialty** contractors – concentrating on particular tasks
  • **Prime** contractors – assuming broader responsibility
  • **General** contractor and subcontractors
• **Procurement** is the acquisition of goods or services.
• **Tendering** = bidding process
Tendering - contracting

Documentation for building consent → realising
• The client selects a prime contractor on the basis of references, acquaintance, competitive bidding and/or negotiation (competition)
• Documentation for tendering
  • Complete construction details – construction drawings
  • Complete specifications (the documentation of the planning consent and precise descriptions of quality, performance requirements)

Tendering

• Methods of selecting the contractor
  • Direct contracting (choosing contractor by acquaintance or references)
  • Simple competition (competitive bidding or negotiation)
  • Public procurement
    • One-stage procedure
    • Two-stage procedures
    • Three-stage procedure
Tendering

• Process of tendering
  • Tender process is determined:
    • the type of tender
    • what will be involved
  • Request for tender is prepared (documentation for tendering):
    • what is required
    • the contractual requirements
    • how to respond
  • Tenders are invited:
    • by publication of contract notice
    • by invitation

Tendering

• Process of tendering
  • Tenderers respond: obtaining all relevant documentation, then:
    • Attending pre tender briefing sessions
    • Clarifying any uncertainties
    • Preparing response
    • Submitting response in the right format, on time and at the right location
  • Evaluation and selection:
    • tenders checked for compliance
    • evaluated against the criteria specified
    • The tender that offers best value for money/ lowest price wins the business.
Tendering

• Process of tendering
  • Notification and debriefing:
    • all the tenderers are advised of the outcome
    • unsuccessful tenderers are offered a debriefing interview.
  • Contracts established and managed: between the successful tenderer and the client.

Tendering

Public procurement

• Act CXLIII of 2015 on Public Procurement (Hungary)
• Gov. Decree 322/2015 (30. October)
  • Public procurement in construction
• COMMISSION REGULATION (EU) No 1336/2013 – application thresholds:
  • the Community thresholds (€ 5 548 000.- / 1 723 541 680.-HUF)
  • the National thresholds (25 000 000 and 100 000 000.- HUF)
  • based on a cost calculation
Tendering

Public procurement procedure types

- **Open** procedure: a contract award procedure whereby all those interested may submit tenders;
- **Restricted** procedure: a contract award procedure whereby only those invited by the contracting authorities may submit tenders;
- **Negotiated** procedure: a contract award procedure whereby contracting authorities negotiate the terms of the contract with one or more of the tenderers of their choice;

- **Competitive dialogue**: a public procurement procedure, in which the contracting authority shall conduct with the candidates they select a dialogue with the aim to identify exactly the subject-matter of the public procurement, and/or the type of and the conditions for the relevant contract, within the frame of conditions as defined by the contracting authority (three stages);
- Innovation Partnership
- Negotiated procedure without prior publication
Tendering

Process of public procurements

- **Participation stage**
  - the first stage of two-stage procedures
  - tenders are not submitted – the contracting authority decides about the candidate’s suitability or unsuitability

- **Preparing and publishing a contract notice**
  - Publication in the Official Journal of the European Union and in the Tenders Electronic Daily databank and in the Public Procurement Bulletin (paper form/online);
  - The contract notice has a standard form, stating the subject-matter and value of the public procurement. The contracting authority (client) specifies the method, the final date and the place for collecting the tender documentation and the terms of payment for the documents.

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Tendering

**Contents of a contract notice**

- The date of announcement of the results and the planned date of signing the contract.
- The language(s) of the tender.
- The evaluation criteria: the lowest price tender, or the most economically advantageous tender.
- The criteria of both economic and financial standing, technical and professional abilities of the tenderer, and the certification thereof. There can be specific conditions, requirements – e.g. environmental protection, quality assurance.
- The type and the extent of the guarantee(s) (a performance guarantee, a guarantee for good performance or other guarantee).
Tendering

Process of public procurements
• „Buying” the tender documentation – contents:
  • draft contract
  • list of the certificates, declarations to be submitted
  • technical specifications (performance, functional requirements)
• Requesting additional information
  • The tenderer may request additional information no later than ten days before the expiry of the time-limit to submit tenders.
  • The additional information is provided to all tenderers no later than six days before the deadline.
  • Additional information may also be provided in the form of consultation.

Tendering

Process of public procurements
• Providing the tender guarantee (if necessary)
• Preparing and submitting the tenders
  • The tendering deadline is not less than 30 (in special cases 35, 15/10) days from the date of dispatch of the notice.
  • Tenders are submitted in writing, in a sealed envelope.
  • Tenders indicate the price (tender calculation), the deadlines and technical variations (if permitted).
  • Tenderers provide proof of the adequacy of their financial and economic standing, technical and professional ability required for the performance of the contract
Tendering

• How to prove adequacy
  • a description of major works carried out over the past five years (public work concerning a historic monument);
  • a statement of the tools, plant and technical equipment available to the contractor for carrying out the work;
  • the contractor’s education and qualifications;
  • a statement of the firm’s average annual manpower statistics and the number of executive officers for the last three years;
  • etc.

Tendering

Process of public procurements
• Opening the tenders - announced date, time, place
• Evaluation of the tenders
  • Checking the tenders for compliance with the conditions.
  • Determining invalid tenders or tenderers to be disqualified.
  • Assessing tenders based on the evaluation criteria.
• The announcement of the results
  • The client prepares a written summary of the tenders.
  • The results of the procedure shall be publicly announced within three days from the decision.
Tendering

- Process of public procurements

- Participation
- Preparing and publishing a contract notice
- “Buying” the tender documentation
- Preparing and submitting the tenders
- Requesting and providing additional information
- Providing the tender guarantee
- Deadline, opening the tenders
- Report on the opening
- Evaluation of the tenders
- The announcement of the results

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<th>Minimum</th>
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Contracting

- Lots of contract forms and types are available to the client;
- The selection of the proper contract form is an important decision.
- Standards for contracting: FIDIC, VOB contract templates
- Range of contract:
  - Main contracting
  - General contracting
  - Co (-general-) contracting
  - (Sub-) Contracting
  - Service / Supply
  - Representation (agency)
Contracting

• The construction contract may include:
  • Construction services;
  • Design-construct;
  • Construction management services.

• Construction services:
  • The general contractor has the responsibility only for the accomplishment of the field construction.
  • The contractor has no input into the design process.

Contracting

• Design-construct
  • The client contracts a single firm for both design and construction.
  • The client, the designer and the builder work cooperatively in the total development of the project.
  • The contractor provides substantial input into the design process about materials construction methods cost estimates and construction time schedules.

• Construction management – project management
  • The objective is to achieve high quality at minimum cost.
  • Project planning, design, and construction are integrated tasks.
  • Management services range from coordinating contractors to broad-scale responsibilities over the whole project.
Contracting

• Types of contracts
  • **Fixed-sum contract**
    • Lump-sum contract – the contractor completes a package of work for a single lump sum of money.
    • Unit-price contract – the contractor performs certain well-defined items of work for a fixed price for each unit.
  • **Cost-plus-fee contract** – the client pays all the construction costs and a fee for construction services. Bonuses and penalties for efficiency.
  • **Work-by-force account** – the client is its own constructor.
    • Working with own forces
    • Subcontracting some parts or the entire project.

• **Turnkey contract** – the client delivers the facility design requirements, the contractor delivers the key of the building.

• **Build-operate-transfer (BOT) contract** – an extension of the turnkey method:
  • The contractor designs, constructs, operates, and maintains the facility for a predetermined concessionary period;
  • Usually the contractor receives no payment from the client, but gets all the money earned by the project;
  • At the end of the concession period, ownership transfers from the contractor to the owner.

• **Speculative construction** – the client builds structures for sale or lease to other parties (known or unknown buyers). The developers act as their own prime contractors.
Contracting

• Single-contract system – one prime contractor
  • The contractor brings together all the diverse elements and inputs;
  • Has the responsibility for the delivery of the finished job;
  • Fully responsible for the performance of the subcontractors.

![Diagram showing client and contractor relationship]

Contracting

• More separate contracts – no centralised control of one prime contractor
  • Several independent contractors, each is responsible for its own work;
  • Each of these contractors are prime contractors;
  • The coordination of these contractors may be undertaken by the client, the architect, a construction manager or one of the contractors.

![Diagram showing multiple contractors and client or management]
Contracting

**Traditional method**

Characteristics

- Long construction period
- Consecutive organisation
- Clear contracting relations

- There is no contractual relationship between the client and the subcontractors.

**Turnkey method**

Characteristics

- Single point responsibility
- Can be overlapped
- Client can be sure of maximum cost before final commitment
- Integrated design and construction
  - Fits to constructor’s expertise, working condition, organisation
- Thus costs should be lower – shorter time on site
Contracting

Construction management and management contracting

Project management types
- In-house project manager
- In-house and external project management team
- External project management

Construction project with management

Characteristics
- Management team is involved at early stage
- Design can be influenced
- Claims can be solved, delays reduced
- Save time – series of tenders, work packages
Construction process

- The process of erecting the building
  - Putting the materials and equipment into place
  - Providing manpower, construction equipment, materials, supplies, supervision and management
- Construction process – influenced by highly variable and sometimes unpredictable factors
  - The construction team changes from one job to the next
  - Different construction sites – differing subsoil conditions, surface topography, utilities and services...
  - Different time, location – differing weather, transportation, material supply, local subcontractors, labour conditions, available technologies...

Construction process

- Construction process involves many skills, materials, hundreds of operations
- Communication with
  - The client
  - Engineers, architects
  - Lawyers
  - Financial organisations
  - Government or local authorities
  - Insurance companies
  - Material manufacturers and suppliers
  - Building tradesmen
Construction process

• Tasks of the contractor:
  • To construct the building according to the contract
  • To ensure the security standards and legal prescriptions on the construction site
  • To report to the authority the start-up of the construction
  • To provide a written statement of completeness of the building (starting the handover)
  • To provide the statement of the competent technical executive (site engineer) for the permission of use.

Construction process

• Main phases of the construction
  • Site preparation, setting up
  • Earthwork, excavation
  • Foundation
  • Substructure (basement)
  • Superstructure, loadbearing structure
  • Inner and outer finishing works (+building services)
  • Test run
  • Handover procedure
Construction process

- Main phases of the construction
  - Earthwork, excavation

- Main phases of the construction
  - Substructure (basement)
  - Superstructure, loadbearing structure
    - in situ reinforced concrete
    - masonry
    - precast concrete
    - steel/timber structure
Construction process

- **Main phases** of the construction
  - Inner and outer finishing works (Building services)

- **Controlling the construction process**
  - Controlling quality, quantity (volume) \(\rightarrow\) quality surveyor
  - Cost controlling
  - Schedule, time control

- **Supervising the construction**
  - Continuous control of the construction logbook
  - Note all failures (deficiencies and faults) in the construction logbook
  - Controlling hidden structures and volume of the completed work (before getting covered e.g. reinforcement)
  - Controlling the conformance of the used materials (CE, etc.)
  - Informing the client about the work done and in progress (Are they according to the contract (volume, standards, prescriptions, etc. – Is it suggested for the client to pay all the bills or not?)
Construction process

Handover procedure
• It is the legally prescribed final period of the construction process
• Statement of completeness prepared by the contractor
  • the construction works are finished in accordance with the contract
  • the works are in accordance with the technical standards and legal prescriptions
  • the building is ready for proper use -> the process for the permission of use can be started
• If there are failures in the building, they are recorded and corrected by the contractor – the last bill is settled thereafter

Operation
• Evaluation of the project / Benchmarking (comparing with other closed projects)
• Operation and maintenance of the building → setting up and operating a Facility Management System
• Preparing plans for renovations, modernisations, reconstructions;
• Feed-back for future projects and FM – POE (post occupancy evaluation)
  • Operational Review, carried out 3 - 6 months after occupation
  • Project Review carried out 12 - 18 months after occupation
  • Strategic Review carried out 3 - 5 years after occupation.
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