

CONTRACT CONSTRUCTION ACTIVITY

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ABSTRACT: *This paper presents the main types of contractual arrangements used worldwide in construction: traditional contracts, cost reimbursable type contracts, management contracts and other contractual arrangements such as partnership, offering two-phase, contracts in series and turnkey contracts. Also, based on a comparison of the main types of contractual arrangements a number of recommendations are suggested for choosing the appropriate type of contract construction project to be realized.*

KEY WORD: *type of contract used in construction; cost reimbursable; contracts management*

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1. INTRODUCTION

The contract is the legal act done by agreement of wills between the acquiring entity (investor) and contractor (offeror) to perform construction project. For public investment, form of contract is usually one of the conditions of contract submitted by the entity acquiring contractors through the tender documents. In some cases, by the end of the contract it can pass through the following phases:

- form of contract proposed by the acquiring entity and part of tender documents;
- form of contract acceptable to the contractor and the accompanying tender;
- the final form of the contract completed and signed by the parties after the award and negotiation.

The contract consists of the form of contract, general conditions, supplementary and special contract and other documents specified in the form of contract. General conditions of contract are the document available to the contractual

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parties general principles applicable to contract construction. In all cases, they become part of a contract for construction works.

Additional conditions of contract are contained in the complementary document the general conditions of contract which fixed term contracts of a given specific procurement entity. Special conditions of contract are the complete document or, amended the general conditions and supplementary contract applicable to a particular contractor.

Traditionally, customers turn to architects and engineers design and supervise the execution of construction .In recent years, however, worldwide, for large projects such as power plants, airports, oil refineries and other complex targets like this method proved relatively ineffective. The causes that led to this situation are:

- insufficient skills in the management of the project many contractors with a highly specialized and technological complexity involved in such projects;
- customer inability to adequately define requirements from the outset of the project.

Therefore, we tried using various contractual arrangements to address this situation, including cost-reimbursable type contracts, turnkey contracts, two-stage tendering, contract number and, lately, management contracts or the design and management. If the client assumes the role of project manager, it will create, in most cases, a separate organizational entity will be responsible for designing and building the target. Project Manager will design and build contracts with specialized companies. If the customer does not have sufficient expertise to achieve these contractual arrangements appeal to companies and independent professionals who will handle project management on behalf of the client. This trend is evident in the construction industry has an impact on contractual arrangements used for certain types of projects.

2. TYPES OF CONTRACTS

The main types of contracts used in construction can be grouped into four categories. In chronological order of their appearance, they are:

- Traditional Contracts
- Cost reimbursable type contracts
- Other forms of contractual arrangements
- Contracts Management

1.2.1. Traditional Contracts

Customers or their managers undertake project architects to prepare the technical design, selecting contractors and overseeing works. The main traditional forms of contracts are:

- a) Total price type contract
- b) Contract price type of work quantities
- c) Unit price type contract
- a) Total price type contract

Contractor is invited to prepare drawings based on supply and specifications for construction projects. Contractor shall assess all costs arising from implementation of the ongoing work. Usually no changes are allowed after the conclusion of the contract total price offered unless the customer requests changes to the project. Price may be divided on the execution phase to facilitate payment by installment of work.

b) Contract price type of work quantities

In some countries, customers prefer to provide a document type contractors to submit prices - demand. It shall be based on drawings and includes chapters work to be done, a brief description and quantities involved. Contractor shall complete with unit prices each chapter of work including labor costs, materials, equipment, administrative expenses, pay subcontractors and profits. Weighting quantities and unit prices for works by summing the results to obtain price - bid. During the work, the actual quantities of work are measured and valued at the price set. Additional work required will be assessed at a new price and / or taking into account the fixed unit prices for similar works.

c) Unit price type contract

Many projects are so complex that they allow complete design before tendering for the award of construction works. In these circumstances, bidders are required to submit unit prices for a list of categories of works typical project work to be done. To substantiate the contractors prices are given preliminary drawings for execution and some geological studies, together with approximate quantities of work. Pay the contractor for work actually performed is based on their measurements and their evaluation at agreed unit prices. Categories of works which were not included in the list provided bidders, renegotiating prices.

1.2.2. Cost reimbursable type contracts

As with standard contracts, the customer calls to technical architects for the project execution and construction supervision. The main feature of these contracts is a fee, a fixed amount or a percentage of direct costs carrying out the work of the contractor. Direct costs of work will be reimbursed as the contractor's work performance.

This type of contract was created to allow for construction works as advance planning work. The main disadvantage of this type of contract is that the entrepreneur can increase the direct costs of work almost without restrictions thus transferring most of the risks to the client. The main forms of cost-reimbursable type contracts are:

- a) Fee contract with a fixed amount or percentage
- b) Cost-target type contract

a) Fee contract with a fixed amount or percentage

Contractor and client negotiate a fee to cover administrative costs and contractor profits. Direct costs related to payroll, subcontractors, purchasing materials, insurance and operation of equipment are paid the client as the execution of works . Therefore, the customer will ultimately pay the direct costs plus contractor's fee. If the fee is calculated as a percentage of direct costs, then the risks assumed by customers and grow more for that fee will increase the growth of direct costs.

b) Cost-target type contract

To remove disadvantages fee contract with classic customers have sought to find a way to increase contractor accountability on project costs. The solution is to establish a correlation between the fee paid to the contractor and cost - the target agreed based on a set of drawings of drawings and specifications. Fee paid shall be initially decreasing or increasing the amount determined by the percentage of excess or economy achieved calculated by the difference between actual cost and cost - of the work target. Take account of changes requested by the client during the execution of works.

1.2.3. Other forms of contractual arrangements

In this category we can include:

a) Partnership

Partnership is the customer selecting a particular contractor, negotiate a price for work to be done, and agreeing to program execution and contract terms and conditions. The main objective is to generate mutually beneficial cooperation between contractor and client. Contractor is encouraged to discuss openly all aspects of client problems in the project. Contractor - partner may be engaged by holding an auction, through negotiations or on a traditional relationship. Last solution is usually preferred. After selecting the contractor will negotiate the terms and conditions, establishing common objectives. Benefits of partnership are to reduce costs, implementation time, improving the quality of work and reduce sources of conflict. For successful use of client partnership must have experience and competence in design and construction to have a good dialogue with the contractor.

b) Contracts construction type, ownership, operation, transfer

Contractual arrangements for such construction, ownership, operation, transfer (CPOT), construction, operation, transfer (TOC), Construction, Property, Operation (CPO), etc. are increasingly used in major infrastructure projects, which were traditionally funded from governmental sources. In these contracts, the developer (usually a large contractor or a trust contract) is responsible for establishing contractual relationships between the many stakeholders and functional (Figure 1), raising the funds needed for construction, facility operation and eventually transfer the property to local government after a period sufficient to pay loans, interest and a profit. Projects such as power stations, water desalination, highways or even large industrial units are typical examples of targets for extending this type of contract used. Using such construction contracts, property, operation, transfer and derived forms is more common in countries experiencing problems in raising funds nationally for large-scale projects which use strong companies, multinationals to gain access to foreign funding sources. Also, this method is used in more and more industrialized countries, where governments are unwilling to finance infrastructure development through increased taxes.

c) Two-stage bidding

For large and complex projects, offering two phases can be improved cost control and increasing discipline. The first phase is a request for proposals addressed a

small group of companies with recognized experience in the field. Previously, the discussions between the customer and the companies on the type, scale works and their respective ability to attain them. Each contractor submit bids with an estimated retail price. After selection of the contractor, in the second phase, it is required to work with the designer advising on the methods of construction, necessary equipment, allocation of work packages to subcontractors, priorities, program implementation and materials supply, etc. It then calculates the price that the customer is to pay and the contract is concluded on this basis.

d) Contracts in series

If the client wishes to make several similar projects, eg schools, you can select a contractor at an auction and the winning bid price may be the conclusion of further contracts with the same contractor for future similar projects. Of course, the new contracts will take account of inflation and other objective factors (Eg, differences in achievement from the Foundation on land with different characteristics). This method encourages the establishment of a trust relationship between the parties.

e) Type design and construction contracts (turnkey contracts)

Key contracts are prepared at the design stage of future goal. After selecting the contractor's tender, it should make the technical design, the construction of objective and in some cases up to the planned parameters operation and maintenance.

f) Overall contract

Overall contract is concluded between the acquiring entity, on the one hand, and the contractor (general contractor) and general supplier on the other hand, the latter assuming the overall responsibility of project completion, having the right to conclude subcontracts with specialist contractors and suppliers. Same overall agreement may be concluded between the entity acquiring both general contractor and supplier, in which case the latter comes from an association agreement which defines the responsibilities of the parties.

g) Separate contracts

Separate contracts are concluded between the acquiring entity and several contractors and suppliers one contract with each of them, where the acquiring entity has the technical capability to perform the Functions and Organization of supplier and general contractor. In this case the overall responsibility for the project is acquiring entity, contractors and suppliers responding strictly for work, supplies and services contracted separately.

h) Project with its own

Some clients, such as public authorities, companies in industries of strategic interest, some large companies, have the ability to realize they need the buildings themselves. In this case a contract is not required. May be used but the execution of works with subcontractors.

1.2.4 Contracts Management

Management contracts have emerged in response to the recent requirements of the construction industry, increasing the competence and care in planning and

controlling projects, from feasibility study to final acceptance of work. Currently uses three systems:

a) The construction management contract

Contract is concluded between the client and contractor (s). Originally, the outset of the project, the client hires a construction manager who will advise, will plan and coordinate the achievement of the objective. Construction manager is usually a construction company selected from the most prestigious national company. This will not directly make any construction; its role is similar to that of the designer or consultant.

b) Contract Management

Many customers consider that the risk of using multiple contractors, involved the use of construction management contract is too March. As a result, the trend appeared to employ a single contractor to lead the achievement of the subcontracting construction works. In this case, although the general contractor's duties are similar to the construction manager, risks that it assumes it is larger, because - although not directly involved in carrying out the works - has responsibility in terms of its performance, quality and fixed costs.

c) Contract Design and Management

Customer carried by themselves or by an independent firm to design the overall objective of the initial designs and, based on their required bids. Contractor offering the lowest cost for design and execution is the preferred target, but take into account the reputation, quality of service and fee required for project management. Winning contractor to tender and will choose both the designer and subcontractors who will perform through construction. He will not do any construction work directly. This type of contract is a logical development of contract management, including the design.

3. SELECTION OF TYPE OF CONTRACT

Select the type of contract that will be used to conduct the construction should take into account the characteristics of the project and the particular client organization. This is an essential element for successful project and therefore should be given great attention and to be completed as soon as possible after project initiation. It is necessary to compare the characteristics of the project with the characteristics of each type of contract. The significance of the main characteristics of types of contracts are as follows:

1. Responsibility for diversity. High dispersion of responsibility is to increase the power of decision and control project manager but may also lead to a phenomenon of dilution of responsibility.
2. Market size that is tested prices - demand. If the achievement of bids by contractors require expensive project to completion documentation available on how, they might be discouraged to participate in competition, unless it holds a restricted tendering. This narrows the auction market that is price-offer testing and lead to obtain a non-competitive price if the auction is done before the preliminary evaluation of contractors.

3. Precise definition of customer requirements. In the case at key defining customer requirements must be very accurate since the initial stage of starting project and it is necessary to have a final. Other types of contracts allow the progressive framing of customer requirements, approach that may be useful for projects with high risk and complexity.
4. Commencement of construction speed. Is low for traditional contracts, because you can not start construction before design completion. All other types of contracts can provide progressively, in parallel, design and construction.
5. Flexibility in achieving change. This criterion refers to the ease with which the client can make changes during construction to achieve the original project. If flexibility is low-key contracts, while the other types of contracts that vary within reasonable limits.
6. Ability to acquire and build progressively. Where the project is an important element of risk or funding sources are limited to its realization may be useful and progressive construction contracting.
7. Monitoring capacity costs to the customer. All types of contracts offer varying degrees, opportunities monitoring costs to the customer.
8. Consultation with the manufacturer early design stage. Manufacturer involvement in the design phase can lead to more effective technical solutions because in this way take account of the interests of another manufacturer from defining the project. By using contract turnkey client clearly pursues the achievement of such a situation.
9. Customer influence on the selection of subcontractors .Customer influence in this regard is limited in traditional contract is not possible for turnkey contract.
10. The possibility of controlling the quality of customer. Turnkey contracts do not provide customer quality monitoring; if he so wishes to engage a firm or an independent expert.
11. Possible existence of contractor for the lucrative cash flow. As for construction works entail significant financial transactions, contractor may obtain benefits if he can collect as soon as funds due and to delay payments as much as possible.
12. Financial incentive to the contractor for effective project management. Key and traditional contracts provide a good financial incentive for the contractor's performance while for contract management or construction management contractor receives a fee that is not necessarily related to the obtained performances.
13. Potential conflict. Quality, construction time and completion costs can be improved through better collaboration within the team. The types of contracts that recognize the responsibilities of various parties involved in construction management and excluding the operation of any of the parties are those that avoid conflicts.

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