



UNIT-5

Contractual and Legal Responsibilities within a Construction Project

Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ Explain the various types of construction contracts
- ✓ understand the types of construction contracts
- ✓ Discuss and appreciate consumer protection.

Unit 5

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Introduction

Before a construction project begins, the owner and selected contractor have to sign a contract, which lays down the terms and conditions and other relevant specification. In the event of disputes, an arbitration board may be set up to resolve them.

This unit will highlight different types of contract that can be drawn up and how disputes can be settled in the course of the project.

Definition of a Contract

Any agreement backed by law is known as a contract. Only people who signed the contract are bound by its terms and conditions, as well as the benefits and losses resulting from the agreement. The contract may or may not make provision for third parties. Third parties should not benefit or suffer from the contract unless they are included. The laws which govern contracts are usually based on local and state laws or they may be based on the location of the parties signing the contract.

Disputes may be settled by the engineer-in-charge or the courts. In the event of a dispute, the engineer's decision shall be accepted as final, provided both parties have already agreed to this course of action. Alternatively, aggrieved parties may go to court if they disagree with the engineer's ruling.

Essential Elements of a Contract

The law only recognises contracts containing certain essential elements, otherwise the contract shall be declared void. Elements of a valid contract are as follows:

1. Agreement

Contracts require both parties to agree to the terms and conditions. They must be written in unambiguous or non-ambivalent manner. Contracts should be simple and crystal clear in meaning to all signatories. An agreement is finalised when parties append their signatures to the contract. There is provision to nullify any contract if it turns out that there was no actual agreement between the parties.

2. Lawful Subject Matter

No contract signed must contravene the rule of law, state laws and public policies. Any contract which contravenes any of these conditions is declared as illegal subject matter. Examples of illegal contracts include contracts involving fraud, arms, collusion, gambling and speculation. Care must be taken to ensure that the subject matter of a contract is not against public policies. Subject matter must not lead to monopoly nor be against the interest and progress of the state

or the public. Contracts are binding on people who signed them ignorantly without understanding the implication of the content of the contracts.

3. Valid Consideration

Consideration means undertaking reciprocating actions by parties who have signed a contract. Considerations have to be real, valid and valuable for the contract to be legal. The law protects all considerations and does not judge whether the contract is fair or not. The law will however, arbitrate in situations involving liquidated damages or debts. Acts of God, unilateral promises, and impossible promises are not enforceable by the law because they are not viewed as real consideration. All considerations need to be stated unambiguously in the contract and not implied in order to avoid misinterpretation.

4. Competent Parties

Only persons who are sane, not minors or drunken can legally sign a binding contract. A drunken person 'who knows what he is doing' may sign a valid contract provided it has been 'made in good faith'. The law governs competency issues at all levels of the contract. It restricts the type of contract a corporation may enter into and the extent to which the contracting parties may exercise their technical competency in executing a project.

When a contract with a private corporation fails because it was the firm was incompetent, the corporation may be able to obtain compensation for services rendered. However, cancellation of contract with a public corporation does not warrant any compensation to be paid as a result of incompetence.

Provision of the Law with Regards to Form

The law requires certain types of contracts to be in writing. These contracts include:

- i. Contracts relating to the sale or lease of land and expressing interest in a land
- ii. Promise to pay a claim
- iii. Making payment for debt or paying for someone who has defaulted
- iv. Agreement which are not expected to be performed within a year of signing it
- v. Contract for the sale of equipments

Individuals, partnerships, or corporations may sign contracts with the contracting party. Whichever entity may qualify to sign a contract must ensure that 'the names or legal titles' of the signatories and their business addresses are included in the contract. Also, stamp seals or embossments may be incorporated into the contract.

The contract must also highlight the scope of service, the expected date of completion, the level of performance expected and other pertinent aspects of the project which are of the highest priority. Signatures must be appended to these milestone or highlights by authorized persons representing all parties signing the contract.

Types of Construction Contract

1. Competitive bid contracts

- a) Lump sum contracts
- b) Unit price contracts
- c) Combined lump sum and unit price contracts

2. Negotiated contracts

- (a) Cost plus percentage of cost contracts
- (b) Cost plus fixed fee contracts with a profit sharing clause
- (c) Cost plus fixed fee contracts with a bonus clause
- (d) Cost plus a sliding scale of fees contracts
- (e) Cost plus a guaranteed ceiling price contracts
- (f) Management contracts
- (g) Architect engineer management contracts
- (h) Combined engineering and construction contracts
- (i) Joint venture contracts
- (j) Incentive type contracts
- (k) Equipment rental contracts
- (l) Guaranteed maximum cost

Competitive Bid Contracts

This type of contract involves awarding contact to the lowest bidding party who is qualified to undertake the project. The winner is expected to have significant working capital. The bid winner should also be free from all litigations and he should not have ever defaulted and must be willing to provide the needed guarantees and sureties for the project. Selection of the winning bid is done either by the owner or the project engineer.

Lump sum Contracts

This contract involves the provision of a fixed amount for the whole duration of the construction project. It can be paid in instalment or tied to completion of each phase of the project. This contract assumes advance knowledge of the scope of work and all associated risks. It also assumes all bill of quantities submitted are identical. This type of contact is ideal for standardize construction projects where the quantities of resources required as well as the detailed specifications and all associated cost are specified in the tenders. The main advantage of this type of contract is that no extra personnel would be required for inspecting work and for determining the monthly rate of material consumption.

Special Features

- i. The contractor may order extra items or even omit some of them
- ii. Only variations, extras or omissions of work need to be re-measured and not the whole work
- iii. The contractor is given access to the site to access conditions prevailing before starting work
- iv. Working conditions and date for completion of the project are usually determined in advance
- v. Excess variations and omissions are not permitted
- vi. Full details or description of drawings and specifications are provided

Lump sum contract is unsuitable for the following:

- i. When dealing with difficult foundation works
- ii. Works which are difficult to estimate due to the difficult conditions of the soil structure of the site. E.g. excavation involving rocks.
- iii. When alterations or additions have to be included in the work
- iv. When extreme weather conditions exist at the site.

Unit Price Contracts

This type of contract requires the price per unit item and an estimate of total quantities of items to be determined in the tender bid. The winning tender is the one which offers the lowest price when the overall cost of items has been computed. Payment is made when agreed schedules of work has been completely carried out.

The unit price contract is suitable for projects in which it is not possible to quantify the amount of work to be done or when constructing large quantities of few type of construction. The scope of work, the nature of the work and detail design and drawings and estimates should be provided to assist the contractor to determine how much work needs to be done and potential problems to anticipate.

Supplementary drawings should be prepared after signing the contract. The information contained in these drawings is important for procuring the necessary materials and serve as a guide to undertake the actual work. It can also be used to prepare detailed drawings. As the work progresses, the owner and the contractor would be obliged to perform more independent calculations and analyse all results to guide them in procuring more materials.

Combined Lump sum and Unit Price Contracts

Useful features of the lump sum and unit price contract may be combined under certain conditions to arrive at a combined contract. When it is difficult to determine the total quantity of item or work to be done, then unit price method may be applied. When certain sections of the work can be readily estimated and the exact quantities can be calculated, then a lump sum payment can be issued. This type of contract is suitable for constructing buildings.

Negotiated Contracts

A negotiated contract is awarded based on the contractor meeting certain criteria such as having the right equipment or facility, the right expertise and previous experience. Negotiated contract is prevalent in private sector construction and usually requires the contractor investing his own capital in the project. The owner pays back the cost of the project plus compensation for the use of contractor's facilities and expertise to get the job done.

Negotiated contracts take the form of cost-plus contracts with the owner controlling expenditure through approval of purchase orders, salaries of workers and contractor's expenses. Overhead costs may form part of the level of compensation or may be paid separately. The lump sum and unit price contracts may also be negotiated. Cost accounting and suitable methodology should be used to determine the actual cost of work.

Cost plus Fixed Fee Contracts with Profit-Sharing Clause

In this contract, the contractor takes a fixed percentage of the total cost of the project as his profit. This type of contract is not recommended because there is the danger of contractors inflating the cost of construction in order to make more profit. For example, he may inflate the wages of worker or the cost of material. The main advantage of this type of contract is that work may start before plans are fully drawn up. This means that the owner may make modifications to the original plan as work progresses.

Cost plus Fixed Fee Contract with a Profit-Sharing Clause

The owner and the contractor negotiate for a fixed price for the cost of construction. The contractor is reimbursed the full cost of the project plus the fixed price for completing the work. Usually, the scope of work has to be clearly specified in order to determine the actual cost of construction. Since the contractor's overhead expenses are directly linked to the cost of construction, it will be in his interest to keep costs down and maximize his profit. Provision is made to include a profit sharing clause in the contract so that any saving made during construction may be shared between the owner and the contractor. The contractor may take home about 25-50% of money accruing from the savings.

Cost plus Fixed Fee Contracts with a Bonus Clause

This type of contract is ideal when the owner wants the project to be completed in record time. The contractor is paid the cost of constructions, the normal fees for completing the job and an additional fixed bonus for each day, counting from the day of completion up to the actual date the work was expected to have been completed, provided the work was finished ahead of time. Penalty charges are applied for each day of delay if the contractor is unable to complete the project on the expected date.

Cost plus Sliding Scale of Fees Contract

This type of contract uses mixed features of cost plus fixed fee contract and cost plus percentage contract. Generally, the cost of construction is estimated and the contractor is paid a fixed fee for

completing the project. If the cost of construction increases by a certain amount, the fees of the contractor are reduced by a specified fixed amount until a minimum guaranteed fee is reached. On the other hand, if the cost of construction decreases by a certain fixed amount, the fees are increased according to agreed rates. This scenario is referred to as the sliding scale of fixed fee. This type of profit-sharing contract serves as an incentive to the contractor to find ways of reducing cost of construction.

The formula for determining sliding scale fee is given by:

$$F = R(2T - A)$$

where R is the base rate, T is the target cost and A is the actual cost.

Cost plus a Guaranteed Ceiling Price Contract

This type of contract serves as a much improved type compared to the cost-plus types in which the plans are not fully developed for the total cost of work to be estimated. The cost-plus types are disadvantageous to the owner. However, the cost-plus guaranteed contract requires plans to be completely developed to aid cost estimation. This enables the owner to fix the maximum construction cost for the contractor. The contractor is paid the cost of work plus a fixed fee provided he does not exceed the maximum expected cost. If he does exceed the limit, he is not paid any compensation.

Management Contracts

This contract type is not the conventional type of contract in which a contractor makes profit from subcontractors working for him. Management contract does not allow such manner of profit-making ventures. Instead, it makes use of contractors with high technical ability, integrity and administrative skills to undertake managerial functions. The contract may specify that the contractor undertake only managerial function of only supervising all aspects of the project including labour and purchasing materials or use his own facilities to execute part of the work.

Architect-Engineer Management Contract

It involves hiring a single firm of engineers or architects to execute all aspect of the project from design to planning and to management. This type of contract was mainly used in the USA during World War II for military and industrial projects. It is not recommended for undertaking large scale projects.

Combined Engineering and Construction Contracts

This is also known as the 'turnkey project' requiring the services of a single organisation capable of both engineering and construction. Details of planning design and specifications are covered in the contract which is usually a cost-plus type of contract.

The engineer works in the interest of the owner by inspecting and supervising construction activities. He may also act as an arbitrator in the event of a dispute between the contractor and the owner. This type of contract is usually not recommended.

Joint Venture Contract

It involves several companies combining into one entity to share their assets and workforce in order to tackle large scale construction projects. Factors such as finance administration and resource management are performed by the joint venture company and are normally specified in the contract. The various companies also share all associated risks, profits and losses. This kind of arrangement is usually a temporary one between the individual companies. The individual companies may sign any variation of contracts between themselves, with details clearly specified in the contracts and subject to the owner's approval.

Incentive Type Contract for Work outside the Country

This type of contract is awarded to contractors willing to undertake projects overseas. The conditions of work may be fraught with uncertainties and danger and generally unfavourable in terms of resources required. This contract basically consists of cost-plus base fee plus incentive for executing the project at low construction cost. It is not recommended for local or domestic projects due to the complicated nature of the contract.

Equipment Rental Contracts

A contractor may rent equipment to execute contracted projects. With regards to cost-plus type contracts, the owner is usually an integral part of decisions relating to equipment rental. Other types of contract may not require any input from the owner; it is left entirely to the renter and the contractor to reach mutual agreement in terms and conditions of use. Equipment may be rented and charged on daily or hourly basis or based on a lump sum payment. The renter may include a recapture condition when certain level of work milestone is exceeded or the contractor breaches the terms and conditions of the contract.

Guaranteed Maximum Cost Contract

This type of contract is in many ways similar to the cost-plus guaranteed ceiling price contracts. In the guaranteed maximum cost contract, the contractor is allowed to provide an accurate estimate of the cost of construction from plans and specifications. The cost estimate is taken as the maximum allowable cost to the owner. The contract stipulates that the contractor does not exceed the maximum amount. If the contract does exceed the maximum guaranteed cost, he would have to pay for the extra cost. Provision is made for bonus when savings are obtained on completing the structure. The savings are normally shared between the owner and the contractor.

Purchase Orders as Contracts

A buyer and a vendor may enter into an agreement by signing a purchase order with terms and conditions as well as other details specifications agreed to. The buyer could be either the owner or the contractor. The vendor is the supplier of the materials. In order to enter into a formal purchase order contract or agreement, the buyer or the contractor has to prepare a purchase form with all terms and

conditions included, filled by the buyer and signed by both parties. Terms, conditions and clauses may include guarantees, taxes, credit, discount, mode of delivery, terms of payment and the like. The buyer may use the purchase order as a basis to resolve any future dispute relating to the items ordered.

Subcontracts

A subcontract is an agreement between the prime or main contractor (who has been awarded the main contract by the owner) and subcontractors who are employed to undertake specialised duties such as electrical works, mechanical works, HVAC, lift installation, etc. The subcontractor is also bound by the terms and conditions of the main or prime contract signed between the owner and the main contractor. The main contractor's function is limited to coordinating the activities of all subcontracted personnel to ensure they perform their assigned duties to the specified standard. Other duties expected of the main contractor include masonry, carpentry, concreting, and paint jobs, etc.

The agreement between the main contractor and the subcontractor can be a written acceptance letter by the subcontractor or an oral agreement. Important projects require a formal agreement containing details of the scope of work, duration, payment terms, rights and responsibilities and other pertinent specifications for the job. The owner holds the contractor responsible for all work done and not the subcontractor. However, the owner may request a 'surety bond' from the main contractor to guarantee prompt payment for all services rendered by subcontractors to prevent aggrieved parties from taking legal action against the owner of the project. The main contractor must also submit to the owner, releases from all claims for the work done by all subcontractors.

Contracts for subcontractors are awarded on a competitive basis in order to minimise costs with approval of the Site Engineer. Three bids from the subcontractors may be accepted for each category of work. The engineer also protects the interest of the owner by ensuring that the main contractor enters into the right type of contract with the subcontractors. The lump sum or unit price type of contract is acceptable but the cost-plus type is not recommended for subcontractors.

The main contract dictates how much work will be performed by the subcontractors. If the contract is a cost-plus fixed type, the main contractor may carry up to 80% of the work with the remainder going to the subcontractor. On certain occasions, the entire project may be undertaken by subcontractor with the main contractor acting as the general manager.

Awarding Contracts

Awarding contracts to subcontractors is usually the prerogative of the main contractor because he is ultimately responsible for the quality of their work. Notwithstanding this, the owner may also want to be part of the process to safeguard his interest by appointing an engineer to be part of the selection of subcontractors. The subcontractors may enjoy a level of protection from the owner provided the owner requests for a list of subcontractors' bids as part of the main contractor's bid. This way, there will be no bargaining between the subcontractor and the main contractor who may want to negotiate the price downward in order to increase his profit. Only bids satisfying selection criteria based on bill of quantities, design and specifications should be considered. All contracts awarded should specify the working

conditions and responsibilities of the main contractor and subcontractors as well as how resources should be share between them.

Selection of Type of Contract

The onerous is on the owner to select the most suitable type of contract with the help of the project engineer. The choice between a negotiated and competitive bid contracts should be based the one which gives a comparative advantage. Competitive bid contracts are suitable when the owner has time at hand and detail plans are available to plan const and the scope of work. Here, the owner has more control on how the project is executed by undertaking regular quality control inspections. Lump sum or unit price contracts may be chosen depending on the type of construction. Negotiated contracts are suitable for projects requiring fast completion when only partial design and specification details are available to start the project. The cost-plus-fixed-fee contract may suffice on such occasions. The various types of contracts should be analysed carefully depending on the nature of the project and the reputation of the contractor to determine the best option. Negotiated contracts could also take the form of lump sum or unit price contracts provided complete plans and specifications are available but the best choice is a competitive bid contract.

Project Insurance

The purpose of securing insurance for construction projects is basically to protect properties from getting damaged in the event of an accident. Insurance must cover the full cost of all project-related resources. Insurance usually covers specific risks inherent in the types of work being undertaken. There may be standard insurance policy for marine construction, building construction, bridge and tunnel constructions. The exception to the rule is highway construction contract which requires no insurance but only pays damages caused by 'acts of God' such as earthquakes, tsunamis, flooding or volcanic eruption and pays nothing due to mistakes or accidents. The contractor bears responsibility of paying for all other damages or accidents excluding 'acts of God'.

Insurance Contracts and Claims

Insurance Contracts

The insurance contract forms part of the main contract between the owner and the contractor. It covers all aspects of the construction project including employer's liability, damages to properties, workers compensation and general liabilities. The type of contract will determine whether the owner or the contractor assumes responsibility for the property insurance component. The insurer by entering into a contract with the policy buyer accepts responsibility for any damage or loss during the course of the project. The policy, however, does not cover liabilities due to negligence or oversight by the contractor and claims cannot exceed cost of damages or loss.

Insurance Claims

Proper documentation of all accidents, damages, or losses involving property or employees should be kept to facilitate claims from the insurer. It is expedient to select someone to take charge of all matters relating to insurance policies, claims and contractors' certificates. The person in charge of the project insurance issues is also required to apply for new policies or cancel existing ones or apply for renewal of policies.

Procedures for Disputes at Law

It is important to set up a dispute review board to resolve disputes in a fair manner. The function of the board is to settle misunderstandings between the owner and the contractor informally. It is not a substitute for the formal law court option. The aim is to promote cordial relationship between the protagonists by resolving issues amicably and informally and to prevent litigation. The board is expected to be impartial and highly professional. Selection of board members is done by the owner and the contractor. The board meets quarterly to discuss the latest developments at the site and are furnished with progress reports to keep them updated. The views of the board on any particular dispute should be accepted as final. Aggrieved parties may decide to seek redress in a court of law if they are unsatisfied with the ruling of the board.

Consumer Protection

Governments around the globe are taking consumer protection seriously by establishing consumer protection offices to deal with consumer complaints. Duties of consumer establishments include:

- i. Providing suitable venues for the receiving and investigating complaints from the public
- ii. Helping to settle disputes between the consumer and the offending party
- iii. Drawing up new legislation
- iv. Undertaking continuous education of the consumer on how to protect himself from becoming a victim of fraud and how to claim compensation if he is victimised.
- v. Promoting business self-regulation
- vi. Working in partnership with other agencies such as the chamber of commerce and judicial departments
- vii. Alerting government agencies about fraudulent activities
- viii. Managing consumer protection activities of governments.

Mediation

Sometimes, disputing parties may seek the services of an expert in construction to help settle disputes at the earliest possible opportunity. The third party mediator tries to help the disputing parties to reach a settlement by mutual consent. Both parties present their cases to the mediator for analysis. The mediator after studying the case then goes to each party to give his opinion on the case and suggests

solutions to them. The proposal may be accepted or rejected. There is an opportunity for arbitration if the proposal is not accepted.

Arbitration

Certain contracts make room for settling disputes by arbitrations. The rules governing arbitration may differ slightly but they have similar characteristics or procedures as the courts. An arbitration board is set up when each disputing party nominates a member to the board. The members of the board are allowed to choose a third person who is also an expert in construction to join them. The arbitration hearing is similar to court proceedings in which submissions are recorded in transcripts. The contractor who is disputing with the owner submits a statement of complaints, documents of facts, and a history of correspondence between the parties. The lawyer for the contractor instructs his client and witnesses on how to make presentations at the hearing. Witnesses must be given the opportunity to refer to the records present during cross-examination.

The owner also steps up to give his version of events. Based on all evidences presented, the arbitration board presents its 'impartial' findings to the parties. The initial contract may specify whether the arbitration ruling is final or not. If the ruling is final, then both parties are expected to accept it. Otherwise, they may resort to the courts.

Further Reading:

- ✓ *J. R. Murdoch, Will Hughes, (2000), Construction Contracts: Law and Management*
- ✓ *Justin Sweet, Marc Schneier, (2013), Legal Aspects of Architecture, Engineering and the Construction Process*
- ✓ *M. P. O'Reilly, (2009), Civil Engineering Construction Contracts*