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## **Various Forms of Project Delay in the Construction Industry**

*Project delay can be defined as an incident that causes extended time in order to complete all or part of a particular project successfully. In other words, delay is the time overrun, either ahead of the date for project completion specified by the contract or further than the extensive contract period where an addition of time has been granted. It should be pointed out that the project delay in the construction industry is a universal or large-scale observable fact affecting not only the construction industry but the overall economy of countries too. As far as world construction industry is concerned, project delays are common problems in the construction industries; particularly most common is in the housing development industries. This paper will present different types of project delay that took place around the world. Project delay involves diverse complicated issues all of which are continuously of crucial importance to the parties to the construction contract. These issues concern right to convalesce costs of the project delay or the need to lengthen the project with the considerable right to recovery costs for adjustments to the contract schedules.*

**Keywords:** *project delay, construction, contractor, time overrun, completion of project, excusable delay, concurrent delay*

### **1. Introduction**

Project delay can be defined as an incident that causes extended time to complete all or part of a particular project [1]. Delay can also be defined as the time overrun, either ahead of the date for project completion specified by the contract or further than the extended contract period where an addition of time has been granted. The project delay in the construction industry is a universal or large-scale observable fact affecting not only the construction industry but the overall economy of countries too [1].

Project delay involves manifold multifaceted issues all of which are perpetually of decisive magnitude to the parties to the construction contract. These issues concern right to recuperate costs of the project delay or the need to extend the project with the substantial right to recovery costs for adjustments to the contract schedules [2].

One of the main objectives and policies of any public or private sectors dealing with the execution of project is to upgrade projects performance, through reduction of costs, completion of project within their assigned budget and time constraints and improve quality [2]. Private housing project delays are often caused by circumstances that create barriers to launch and further implementation of project activities. When project delays are unexpected, they are uncontrollable and have rather a negative impact on project activities and results. An unexpected delay extends the overall duration of project activities and entails an increase in project costs. It generates time-associated cost effects that increase resource consumption and require more time for reaching project success [3].

In the private housing sector a developers can just be project owners or both the owner and contractor of a development project. In either capacity, a developer has certain obligations that need to be spelled out clearly in the contract document. If this is done, the probability of a successful completion of the project is enhanced. If the initial step is omitted, the chances of delay and conflict will increased [2].

## **2. Types of Project Delay**

When a construction projects begins, the original plan often changes due to some types of delays. Many type of delays can be avoidable by planning properly. Other types are often predictable due to conditions beyond the contractor's power. The type of delay can also have an impact on non-critical activities which need a more detailed analysis to determine whether additional time extension can be given, or if the reduction of the time float can be justified [3].

### **2.1 Critical and Non Critical**

Critical delays are those which cause delay to the entire original completion date stated in the contract while Non critical delays not essentially effect the completion of the project but it will affect the construction progress. In all the projects delays are considered at the project completion date. Delays can be arrangements of small and big delays that developed during the whole construction project. More consideration on critical delays is taken rather to non critical delays [3].

## **2.2 Excusable Delays**

Excusable delays arise due to condition which is outside the power of the contractor like heavy raining, fire, storms, strikes, changes by the client, differing site conditions, change of government law and regulations, intervention by the stakeholder and etc. When there are excusable delays arise, a time extension is entitled to contractor in case date of completion is extended. Such delays can also non critical activities which must consider with more detailed analysis or adjustment of float time [4]. Excusable delays can be further classified in compensable and non compensable delays. Types of excusable delay such as the following:

- Unusually weather
- Changes and extra work
- Differing site condition
- Delays from unforeseeable causes beyond control of the contractor
- Labor disputes
- Utilities and etc

## **2.3 Excusable Compensable Delays**

Excusable compensable delays are those in which contractor is entitled for more payment (reimbursement) i.e. financial compensation and extension of time as well but decision that the delays is compensable or non compensable is taken as per contract involving the client and the contractor. Natural disasters other reasons which are out of the power are not considered. Example of such delay could be that the client doesn't allow access to site after notice to proceed is given to contractor, in other side such delays which is due to client compensable [4]. The following clauses are placed in contract to prevent a breach by the owner:

1. Changes and extra work clause
  - The changes and extra work may be compensable. The extension time may be given to the contractor if the project is proven to affect the critical path
2. Differing site condition clause
  - The differing site condition clause has two types of cost, that is direct costs and indirect cost (OH and profit). For indirect cost the amount to be paid can be limited to contract wording. This clause are not generally referred to as delay or suspension of work
3. Suspension of work clause
  - Delay by the Owner for an unreasonable time fall under this type of clause and are most likely compensable. It is very risky for liability on the owner

- The suspension of work clause should include contractual help for equitable modification to the Contractor for time and money not including the profit.
- Ground rules for delay generally come from contract law. The owner is liable for their actions/inactions that result in unreasonably delaying or disrupting the contractor's performance of their contract.

#### 4. Utility work clause

### **2.4 Excusable Non Compensable Delays**

These types of delay are when both the contractor and the client are not responsible for the project delay. Under such circumstances only time extension are granted and no monetary compensation is provided [4].

### **2.5 Non-Excusable Delays**

In this category, the delay is due to the failure of the contractor in carrying out the construction work based on the work schedule that has been submitted in the early stages and approved by the Superintending Officer. This delay a violation because the contractor is responsible for implementing the project construction running smoothly Contractor is also responsible to take all appropriate measures so that progress will not be delayed.

Among the steps that should be taken by the contractor is to ensure the projects running smoothly including to the work plan and carry out work with the utmost care and in accordance with the\_ duration of the construction that been specified in the contract [5]. The work planning is very important so that the work can be carried out quickly without defacing the quality.

The work plan should not only involve large-scale work, but a small scale work should also be planned carefully, because it is also one of the important components that complete the whole project. The adequacy of the labor is one of the measures that also need to be emphasized. Every work can be said to require a human nature to do this. Although the work uses machinery, it also requires labor as the operator to controls the work carried out by the machine [6].

If the delay that happen is arising from the contractor itself, then there is no extension of time will be given to the contractor but instead the contractor have to pay compensation to the client (Clause 40). For more severe conditions, if the delay extends for some period of time, for some reason it is entitle the client to terminate the services of the contractor (Clause 51). Types of non-excusable delays as the following:

- Under estimate of production rates
- Inadequate scheduling or management
- Construction mistakes

- Equipment problems
- termination of contract or liquidated damages and etc

## **2.6 Concurrent Delays**

This type of delay is the most difficult categorization of delay as it consists of two or more delays despite of their type which arise at the same time or overlapping among some of the duration [7]. It is important to find out what type has cause the delay in construction project. Therefore different factors like time of delay happening, duration of delay, float ownership, impact of them, etc will have to be measured cautiously.

Concurrent delays which contain two or more excusable delays result in time extension. When compensable and non excusable delays are concurrent a time extension can be given or delay can be distributed between client and contractor [8].

## **3. Conclusion**

This paper summarizes 6 types of project delay that took place around the world such as critical and non critical delays, excusable delays, excusable compensable delays, excusable non compensable delays, non-excusable delays and concurrent delays. The type of delay could also have an impact on non-critical activities which need a more detailed analysis to determine whether additional time extension can be given, or if the reduction of the time float can be justified. When project delays are unexpected, they are uncontrollable and have rather a negative impact on project activities and results. An unexpected delay extends the overall duration of project activities and entails an increase in project costs. It generates time-associated cost effects that increase resource consumption and require more time for reaching project success. Project delay involves manifold multifaceted issues all of which are perpetually of decisive magnitude to the parties to the construction contract. These issues concern right to recuperate costs of the project delay or the need to extend the project with the substantial right to recovery costs for adjustments to the contract schedules.

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