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## Delay Analysis of Redevelopment Construction - A Case Study.

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### ABSTRACT

Construction delays are considered as time lag in completion of activities from its specified time as per contract or can be defined as late completion or late start of activities to the baseline schedule, directly affecting specified cost. As a result, there will be extensions of time required which will further result in fine, increased cost due to inflation, termination of contract, court cases etc. or combinations of above stated factors, resulting in delay damages. Construction delays can be minimized only when their causes are identified. The objective of this study was to identify the major causes of construction delays. Mumbai, a city with high resale value of properties. Redevelopment projects today contribute 2-3 percent of the total supply in the city which is expected to rise over a period of time to 10-15 percent. Shree Swami Samarth Krupa project in Kurla by Shoreline Builders, Mumbai, require a lot of planning in terms of land acquisition, finance management. Time required for completion of a redevelopment project is high due to delays in receipt of permissions from society residents, building approvals, environmental clearances, etc. It takes about two years for negotiation with the society's existing residents and is the major roadblock in a redevelopment project. The study revealed most likely delays occurred are due to Demonetization, COVID-19, and various approvals from different authorities and boundary disputes with other buildings. The objective of this study was to focus on analysing the causes of delays in construction project. This study was carried out based on literature review and a questionnaire survey.

**Keywords:** Maha RERA, MHADA, Delays, Contract, Demonetization, Covid-19, Mumbai, Shoreline Builders.

### 1. INTRODUCTION

In the study of Assafand Al-Hejji (2006) [1], delay could be defined as the time over run either beyond completion date specified in a contract or beyond the date that the parties agree upon for delivery of a project. It is a project slipping over its planned schedule and is considered as a common problem in construction projects. Bassioni and El-Razek (2008) [2] identified that delay in construction project is considered one of the most common problems causing a multitude a negative effect on the project and its participating parties. Therefore, identify the actual causes of delay in order to minimize and avoid the delays and their corresponding expenses. Arditi Pattanakitchamrron (2006) [3] stated that delays in construction can cause a number of changes in a project such as late completion, lost productivity, acceleration, increased costs, and contract termination.

The main concern of the problems that exist in this work is associated with the identification of the reasons why the delay in the construction process is easier. It has been found that there are certain types of delay problems that are associated with a project. It is important for the employee to indicate the reasons for the delay and to determine the effect of the delay in the Indian construction industry. In addition, it is not possible to find out what kind of problems with project managers while construction is underway as some of the issues arise in an unexpected way. The work story is associated with the gathering of evidence and features through intensive work and data collection from a few case studies.

Delay will be those abating down from claiming worth of effort without ceasing development actually Furthermore that might prompt run through overwhelm Possibly past the agreement date or past the date that the gatherings bring concurred to the conveyance of the project. Delays classified into non-excusable delays, excusable non compensable delays, excusable compensable delays and concurrent delays. Non-excusable delays are delays, which those foreman whichever reasons alternately accepts the hazard for. Sensible non-compensable delays might delays initiated Eventually Tom's perusing components that need aid not foreseeable, previous those contractor's sensible control likewise not attributable of the contractor's lack alternately heedlessness. Compensable reasonable delays these are compensable delays are reasonable delays, suspensions, or interruptions should every last bit or and only the worth of effort brought on Eventually Tom's perusing a demonstration or disappointment to enactment by the manager coming about because of owner's break for an obligation, stated alternately implied, in the contract. Concurrent delays occur when both owner and the contractor are responsible for the delay.

Delays in construction work are bad because it is not easy to compile reasons for delays in a major construction project in India. However, the nature of the work delay is different for different projects. In some cases, it is associated with undue delays that completely emphasize contractor negligence and poor site management or equipment violations. In addition, some delays are associated with simultaneous delays associated with multiple types of reductions. Therefore, the task may be challenging in data collection by providing equally per study. There are three basic ways to categorize type of delays:

Critical and noncritical

Excusable and Non-excusable

Compensable and non-compensable

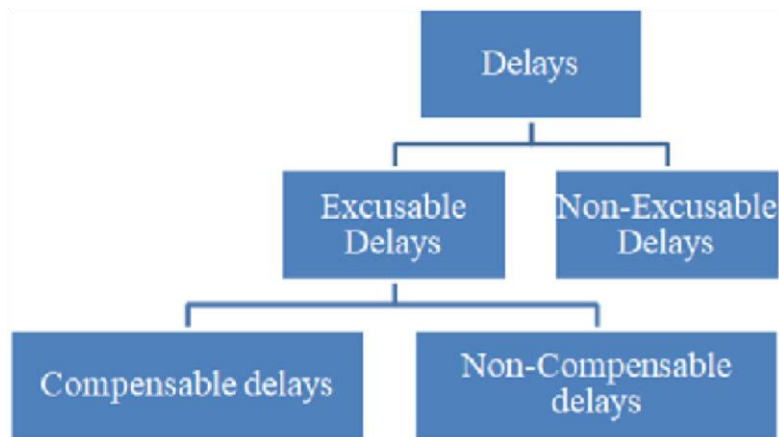


Fig. 1. Delay classification

## 2. Literature Review

Construction industry is large, volatile and required tremendous capital outlays. Delays are one of the major risk factors in project. Bramble and Callahan (1987) have defined that “a delay is the time during which some part of the construction project has been extended or not performed due to an unanticipated circumstance”[4].

Likewise a critical contribution, this investigation. Hails crazy with experimental relationship the middle of makes Also impacts of postponements likewise the third destination as. Talked about in the dialog over. Trust that this study might a chance to be an assistance of the professionals (clients, Consultants What's more contractors) and also academicians will An finer see all the over the project. Oversaw economy Furthermore aggravate deliberations to decrease the development postponements. Says, Syahira Nabilla Ahmad Hisham (2015), [5].

Delays in construction projects are a widely researched area for which more researches are constantly being carried out. Due to the wide coverage of construction projects in terms of size, type, geography and so on, there is still the need to investigate the causes and assess the effect of delays on various construction projects at various levels. This may eventually lead to the much needed development in the industry. For this reason, this researcher sought to analyze the construction of government road projects in Kurdistan Region to address the inefficiencies in the system and prescribe some solutions to mitigate them. Studied by Twana Ahmed Muhammed, 2015, [6].

As per Divya.R, S.Ramya, The objective of this study is to identify the major causes of construction delays, its effects and minimizing delays in construction projects, 2015, [7].

## 3. Project Description

Mumbai is a megacity of India and has grown enormously since the 1950's and gives great case study of urbanisation. Apart from this, the current study is undertaken on Construction of High rise residential building project in Kurla, Mumbai. The project is reconstruction of G+17 floor High rise Residential Building with area of 1403sq m with cost of 600 million and is scheduled to complete in 72 Months including all sanctioning and redevelopment processes. The project was planned and to be operational in 2018 but it got delayed due to various reasons and got completed on 18 December, 2022.

## 4. Project Timeline

- Society Public Notice issued on 24th August 2013.
- Shoreline interest letter given to the society on 27th August 2013.
- Society approval for Redevelopment of the building to Shoreline on 20th April 2014.
- Development Agreement with the Society on 11th April 2014.
- Received MHADA NOC for Redevelopment of Building No. 35 on 30th May 2014.
- Rectification Deed for change of CTS number on 7th January 2015.

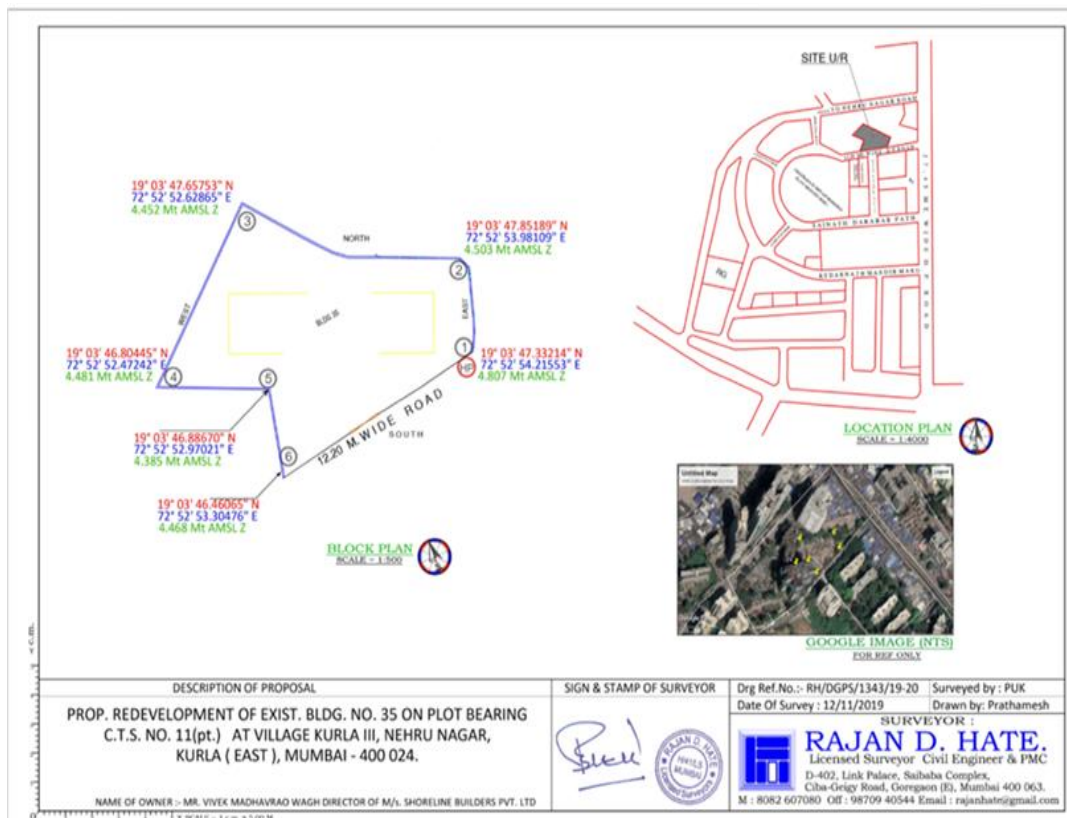
- Received Vacant possession of the building on 19th January 2015.
- Demolition of Building No. 35 done on 28th May 2015.
- IOD received from MCGM on 9th December 2015.
- Received Offer Letter from MHADA on 29th December 2015.
- Common Boundary dispute with other building on 07th September 2016.
- Delayed due to Government Policies Regarding Pro-rata FSI on 01 October 2016.
- Addendum to Development Agreement done on 17th October 2017.
- Bhumi-pujan ceremony done on 7th February 2018.
- The lockdown declared by the government since March 2020 due to pandemic Covid-19.
- Letter from Society to MHADA for stay on going work for additional built up area on 21st April 2021.
- Full Occupation Certificate received on 19th December 2022.

## 5. Aim and Methodology

*Aim:* - To find out causes of delays in residential redevelopment construction of cited project in Mumbai.

*Methodology:* - Literature Review and Questionnaires Survey. Data is collected from the cited residential construction project with the help of questionnaires or by taking personal interviews. Questions are directly asked to professionals such as project managers, engineer, contractor or consultant working on construction site and have experience in construction projects. Then analysis is done of the collected data from the live project.

## 6. [A] Project Location Plan



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**LOCATION PLAN**

6. [B] Project Plan





## 7. Objective of the Study

This study is aimed at identifying the major causes of delay, effect of delay and methods of minimizing delays in large residential construction projects. Many factors influencing delay are found out and are quantified here with statistical or analytical methods. The current objective of proposed project work is: To identify various causes of delay and to study the effect of delays for construction projects.

## 8. Causes of Delay

- **COVID-19 Pandemic:** The COVID-19 crisis involves interruption to supply chains, labor supplies and emerging financial impacts. Researchers at tech firm nPlan found that the median delay for projects completed before the pandemic was approximately 100 days, while pandemic-era projects have a median delay of more than 200 days. Analysis of pre- and mid-pandemic projects in the nPlan schedule dataset suggests that nearly nine in ten large-scale construction projects (85.5%) are delivered late – nearly two-thirds of them (59.4%) by at least two months. Nearly one in four projects (22.7%) are delivered more than 250 days late, while more than one in ten (13.4%) are delayed by at least a year.
- **Boundary Disputes:** As long as the owner whom activates a legal process can demonstrate that they have attempted to avoid the matter and costs associated with it, they are likely to be given the benefit of cost recovery through the legal means.
- **Financial Issue:** The financial-related problems that cause delays in construction project are mainly for four main reasons. They are late payment, poor cash flow management, insufficient financial resources and financial market instability as Market was down due to pandemic and got to pay rent for 40 members.
- **Project Approval and Litigation :** There was a delay in project approvals from various authorities i.e. Maharashtra Housing and Area Development Authority (MHADA), Government Policies regarding Pro-rata FSI and also Feasibility studies that are [Preliminary](#) investigations undertaken in the very early stage of a [project](#) to assess whether the [project](#) is viable. They tend to be carried out when a [project](#) is relatively large or [complex](#), or where there is some doubt or controversy regarding the proposed [development](#) got delayed.

## 9. Conclusion

There were various initiatives taken to execute the project as the city of Mumbai, financial capital of India, is recognized in the World as commercial and industrial hub. The city also enjoys a numero uno status as far as India and State's economy is concerned. However, the lack of world class infrastructure facilities, growing population is hampering city's progress and affecting local life.

Maharashtra state government gave a push to plans for the redevelopment of the Residential High rise Building in Kurla. This report is for the delay analysis of the cited project, there were various different factors due to which the project got delayed, and some are listed above. The major causes of delay which is found repeating in the project are due to Covid-19 Pandemic, financial difficulties.

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