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# ASSIGNMENT 1 OUTLINE

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Building estimates and Tendering: 301207 Spring 2021



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## Introduction and Brief Project Scenario

As a construction cost consultant, I am primarily responsible for providing the specialist advise for the professionals which includes clients, financial institutions, insurers and

members. For this particular project, I am particularly responsible for providing early estimates for the entire project and the various factors which will have an influence on the overall cost of the project. My company has delivered around 20 projects which varies across residential areas, commercial areas and land development. All of these projects were built in the year 2016 and 2017.

The project in context is a residential project. Out of the 20 project that my company has dealt with, 11 have been residential projects. Hence, working out construction was not very difficult. The project is located at Milsons point at Sydney which is the new hub of the city. A lot of new constructions are happening around the same spot at the place. The construction is not a society but a standalone building, the number of towers in the building are around 14. The total number of apartments across the building are 200 with each floor has around 14 apartments. The apartment is divided into three wings which are A, B and C. While wing A and wing C has five flats. These are the extreme wings while the middle wing has relatively lesser flat in it. Wing B has only 4 flats in it. Hence, the distribution of the 14 flats is 5 in wing A and C while 4 flats in wing B respectively. This distribution is applicable for all the floors above the first floor. While for the first floor, there are four flats less. Wing A and wing C has one flat less on the first floor while the wing B has two floors less. Instead of the flats, in the wing A there is a clubhouse, in the wing B, there is an amphitheatre and the indoor play area for the kids and in the wing C, there is a mini mall. The facilities are common across each of the wings and there is an interconnected passage for the same.

This is a premium apartment which means it has supreme quality finishes. In terms of the car parking, there are three car parking. Each of the car parking is below each of the wings. The size and occupancy are same for each of the wings. There is an open gym on the top of the terrace along with the pool. The pool is also open.

There is an extended garden on the first floor which is connected from each of the wings. From each of the respective wings, the residents can enter the common garden. Overall, the level of the security is very high at each of the floors with CCTV cameras installed outside each of the flats. There are security guards at the main entrance of the apartments as well as outside each of the wings.

## Preliminary methods adopted in preparing the early-stage construction cost estimate

There are several methods which are available in order to prepare the estimates for the early-stage construction cost estimates. The choice of the methods depends upon the information available. For this particular project, the method adopted is the superficial floor area method.

In the superficial floor area method, it is very important to have the rough sketch for the entire construction available with you. With the help of the final designs, the floor areas of the total construction site are calculated. This is essentially the total gross area that must be constructed in total.

Once the total gross area of the building is established, then it is multiplied by the cost of construction per unit area (Chitkara, 2013). The cost of the construction is calculated taking into several factors in account. The various factors include the overall labour cost of the entire project and the cost of the different equipment which are supposed to be used for the project. While these are the variable costs which are to be used for the projects but for the calculation purposes, all the fixed costs are also taken into the consideration. The various fixed costs in relation to the project include the extra EMI paid on the loan amount etc.

Hence, the overall formula which is used to calculate the cost estimate for the entire project is as product of the variable cost per square foot of the area multiplied by total floor area of the

project plus the total fixed cost involved in the project. This formula is used to come to the final cost of the project. The total area floor which is used as a reference over here is the total constructed area of the project and not the total area of the property. In the reference to the project, since there are 14 floors, hence the total floor area of the property will be calculated accordingly. Also, if there is no construction in some of the parts due to some reason, it will not be taken in account. The extent to which the construction is done will have an impact on the cost per unit. There is a possibility that some parts of the project are heavily constructed while the other parts of the project are lightly constructed. Hence, the cost of the construction will vary accordingly. So, the cost of construction per square foot cannot be generalised at an overall level.

The cost of the construction is not dependent on the internal factors, but several external factors also play a lot of importance in determining the cost of the construction. Some of the external factors which have a role in establishing the per unit cost of the construction are region at which the property is located, the type of the building that is being constructed and region of the property (Alsever, 2019).

In order to correctly estimate the cost of the construction, it is very important to have the proper sketch in place which can be used as a base.

## Detailed analysis of the factors

The final cost of the construction was 50 percent higher than the estimated cost of the construction, there are several factors which were responsible for the same.

The factors which influenced the cost of the construction are:

1. Complexity of the design

The design has very different from the other designs. It was made on a particular theme which was very difficult to construct. The layout of each of the wing varied from the other, hence there were a difficulty to construct each of the wings differently. This was especially due to the uneven layout of the entire property. The specifications which were mentioned were very unique and different type of the materials and equipment's had to be used in order to the complete the design. Hence, due to this complex design there was a lot of difficulty in order to complete the construction. This ultimately contributed to an increase in the cost of the overall project.

## 2. Restricted site access

In spite of the multiple requests, the zone was classified was the restricted zone. This was there were several important buildings which was there in that particular zone. Adding to that, there were restrictions in the working hour which were set by the city council. Instead of 8 to 10 hours which were the usual working hours which were st by the council for non-restricted zones, in this case it was only 6 to 8 hours where a worker could work for this particular project. This factor contributed a lot in terms of the delay in the construction. The delay in the construction caused increased in the cost of the project.

## 3. Resource storage and price escalations

The project was constructed in the extra ordinary conditions. While construction of the project, there were severe shortage of the plant, labour, and materials. Due to the

entire COVID situation, the labour was not easily available. Most of the labourers were not willing to come to the plant in the fear of the corona. Also, there were several restrictions which were imposed to the COVID situation in terms of the capacity at which labourers could function. All of this severely impacted the costing of the entire project. There were several restrictions in terms of the transport of the goods from one place to the another. Hence, construction had to be kept at halt till the time the goods/ materials are not received which were necessary to resume the construction. Each of the factor contributed to the increase in the prices of the overall construction.

#### 4. Less competition

There is a construction boom across the world. Everyone across the world wants to buy the property, this is not just specific to this property or this country. But this is common across the world, this has not just resulted in the rise in the property prices across the world but also less competition. Competition is less because most of the players in the market are busy with the ongoing projects. Hence, there are very few players which are available to take the new projects. In the usual world, there is a trend which is followed in the demand and the supply. If there is more demand and there is less supply, then the market always plays in the favour of the supply side. In this case also, also the same thing happened. Due to the less competition in the market, the prices of the contractor raised significantly from the usual. It was almost 30 to 40 percent rise from the usual figures. Also, there was no option available as there are no other players in the market who could provide that service. Hence, those players had to be selected even if they were offering the increased prices. This overall

increased the overall cost of the project.

#### 5. Higher financial costs

One of the factors which increased the cost of the project was higher financial cost. This included the increased rate at which the loan for the project was taken. Overall, in the market the rates were very high. Hence, whatever rate was available in the market had to be opted for. There was no other option available for anyone in the market. Hence, this increased the cost of the project. In another words, the rate at which loan was taken in order to complete the project was higher than the normal, hence the amount of the EMIs were higher which increased the overall cost of the project.

#### 6. Design changes

In the usual scenario, a design is completed before the execution starts. Whatever iterations are required are done before the execution starts. This is done to ensure that no part of the project had to be repeated at any point. But in this scenario, the design was changed several times during the course of the project. This was not just once or twice but several times in the project. This was especially because there was lack of the alignment among different stakeholders which reflected during the construction phase. Each of these conflicts should have been resolved during the discussion phase. These design changes during the construction by the designers delayed the timelines of the overall project but also several elements had to be reconstructed. Overall, this



entire process increased the cost of the construction of the project.

#### 7. Incomplete project documents

This is one of the factors which could have been avoided completely. This is one of the biggest loopholes/gaps which should not occur in any of the projects. There were incomplete documents which were submitted for the evaluation purposes. Due to the same, several assumptions had to be made in order to evaluate the cost of the project. These incomplete projects led to the variations in the cost which resulted in the several claims which could not be justified while construction of the project. In short, there was no template or parameters which was followed for the submission. This created a lot of issues further.

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