

# QUALITY ASSURANCE & PROJECT SCHEDULING FOR RESIDENTIAL BUILDING

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**Abstract :-** This project involves two topics “Quality Assurance” and “Project Scheduling” for residential building.

**Quality Assurance:** We visited a building where the construction is going on and we observed the quality of workmanship used their and compared it with the standards of construction. We also visited a building which faces a problem on construction site.

**Project Scheduling:** Study of a construction site was also done from which we got an idea of quality assurance and project scheduling, so that problems due to/after the period of time can be avoided. Also we are going to use software “MS Project” for the project management. With the combination of two we are going to give an idea to improve management of work with best quality assurance and economically construction of residential building.

**Key Words:** Quality assurance, reduce cost, MS Excel, auto cad, MS Project.

## 1. INTRODUCTION

The quality of the building becomes an issue when many accidents occur related to the building collapse. Many criticisms have been made by public about this.

Building construction project is generally unorganized and is often based only on the expertise site engineer or contractor or builder. That is the burden on single person. According to a survey building have approximately 15% of their components displaced, and approximately 40% have control problem such as improperly tuned environment systems. Errors on construction sites occur frequently and can be costly for the owners and contactors.

The main purpose of choosing this topic for our project is to know more about the quality assurance and to promote its solution at construction site. In this century, if engineer wastes the time and limited resources without caring about the future generation and our earth, he is not eligible to called good civil engineer. So it is very necessary to manage the activities and to ensure the quality.

### Aims and objectives of the study: -

- To study the impact of implementation of quality assessment system in construction project.
- To find out the quality of building construction material.
- Maximum use of available resources and man power.
- Maximum use of time and Management of labour within available time.
- To determine the challenges in implementing quality assessment and assurance system in construction project.
- To be used as criteria to evaluate the performance of contractors based on quality of workmanship.
- To assist contractors to achieve defect free when carrying out construction work.

### Needs of quality and Assurance: -

In every stage of construction, we have to maintain level of standard so that in future maintenance cost of structure is low. 8-20% of construction cost is found to be wasted due to reconstruction of defective parts detected late during construction and 7-10% of construction cost is wasted due to re-construction of defective components detected during maintenance of work.

The nature of these errors is quite diverse. 15-20% of all site defects have their roots in errors arising during the construction phase, 50% of the construction defects can be attributed to human factors like insufficient supervision of construction work or unskilled labour. Furthermore, 10% of the construction defects are based on material and system failures.

These observations suggest that a thorough inspection of construction sites is needed and that current sites effectively. Since the main causes of construction errors, e.g. human involvement in the construction process and changing environmental condition resulting in discrepancies in material behavior are uncontrollable, it is critical to improve the inspection and assessment of the quality of construction projects.

### **Problem Specification & Solution: -**

In this semester, we are focusing on quality related problems. Which are observed during period of construction and giving the best solution of two such major problems? We referred the case study of "The Residential Building, Anand" from which we noted the reason behind its poor construction and poor maintenance. We visited the working site "Near Ambika Colony" having single towers of G+2storey.

### **Review of Residential Building**

There is some problem we analysis. Study review of building contains the detailed study of building which was damaged after 1 year of construction. This shows the poor quality of construction and workmanship used in construction.

Poor quality of concrete and steel used in construction of column, results in the large creak in column.



**Fig -1: -Honeycombing in Column**



**Fig -2: -Atmosphere Effect**



**Fig-3: - Water Effect in Inside Plaster**

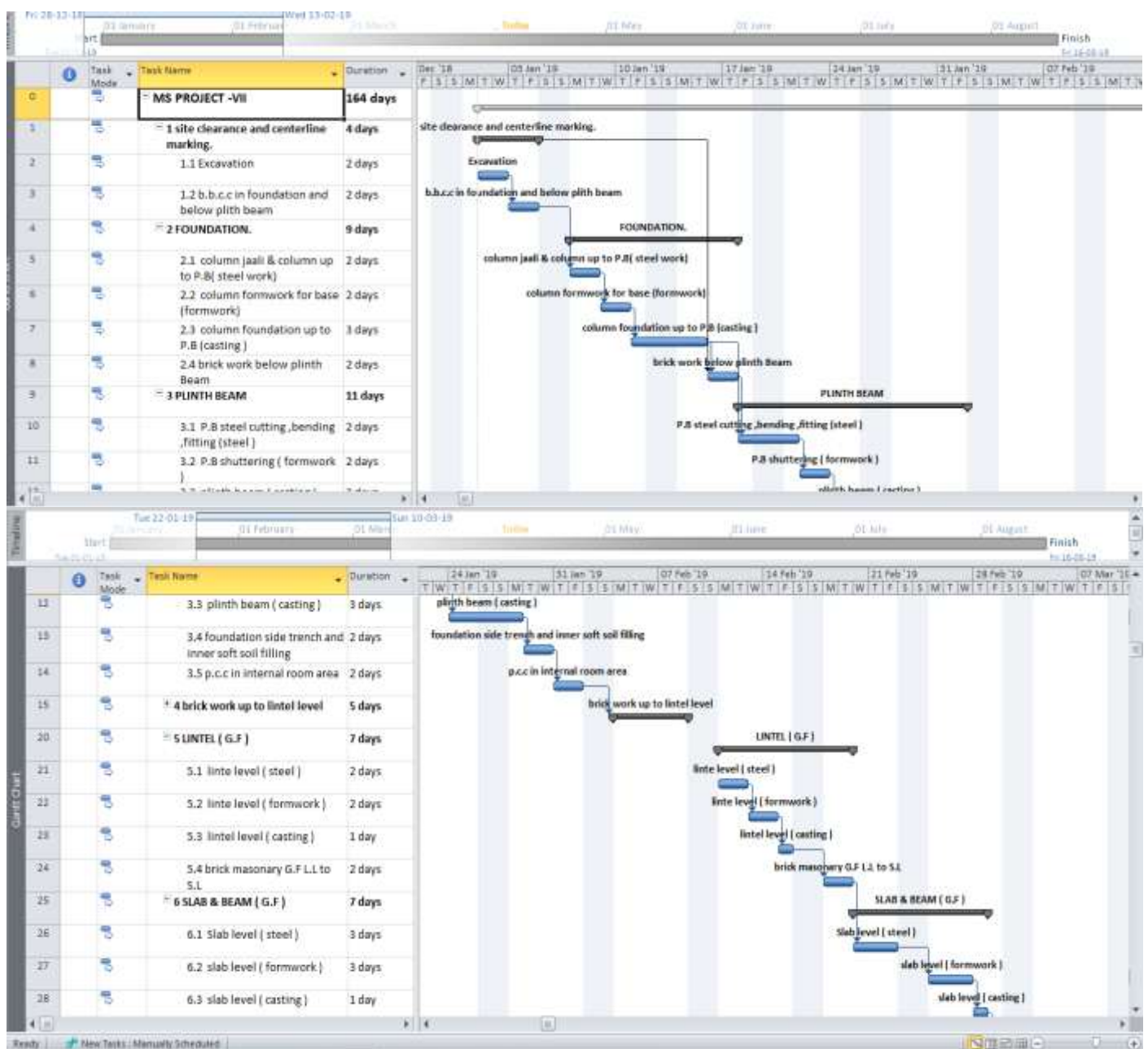


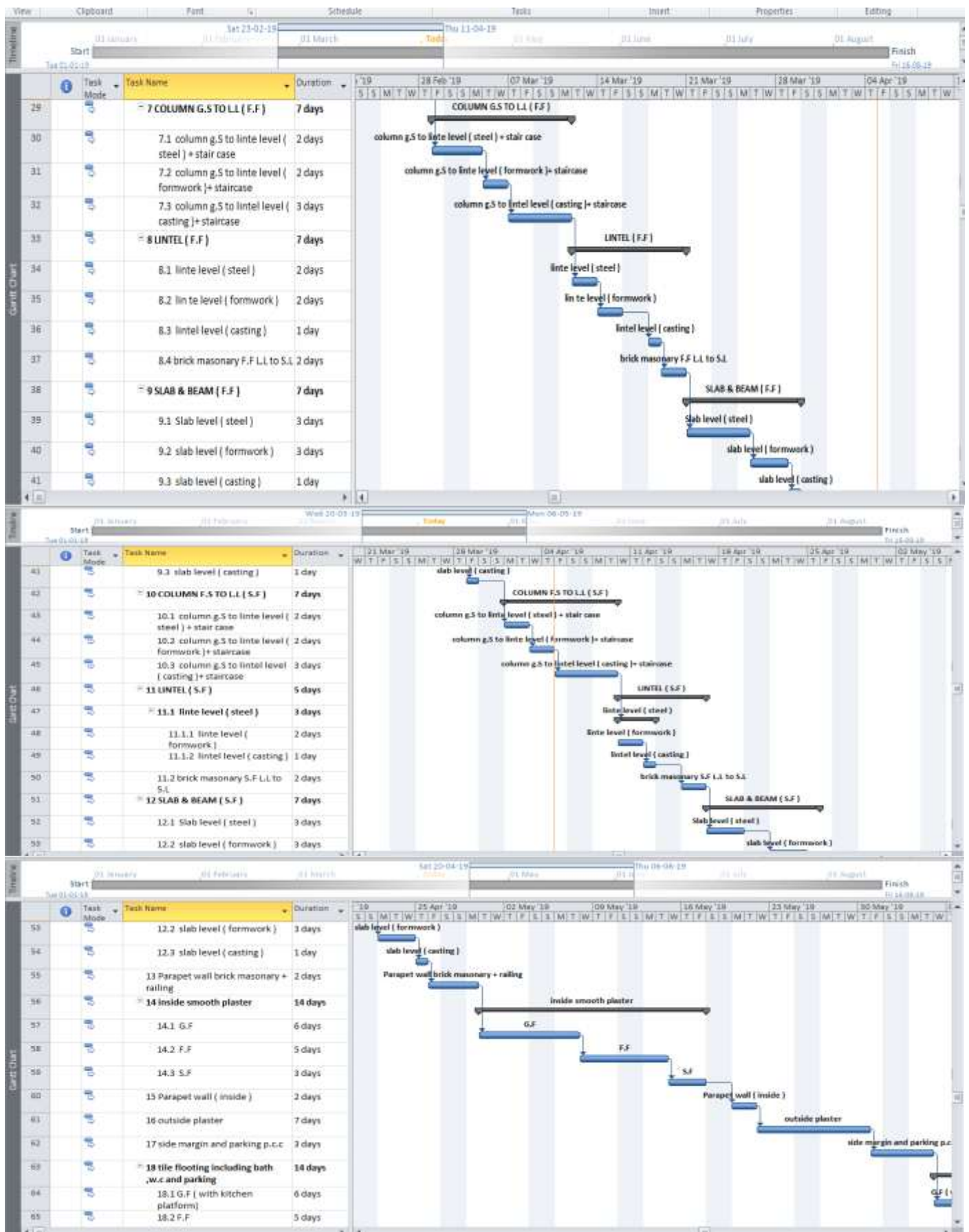
**Fig-4: - Cracking in Brick Work**

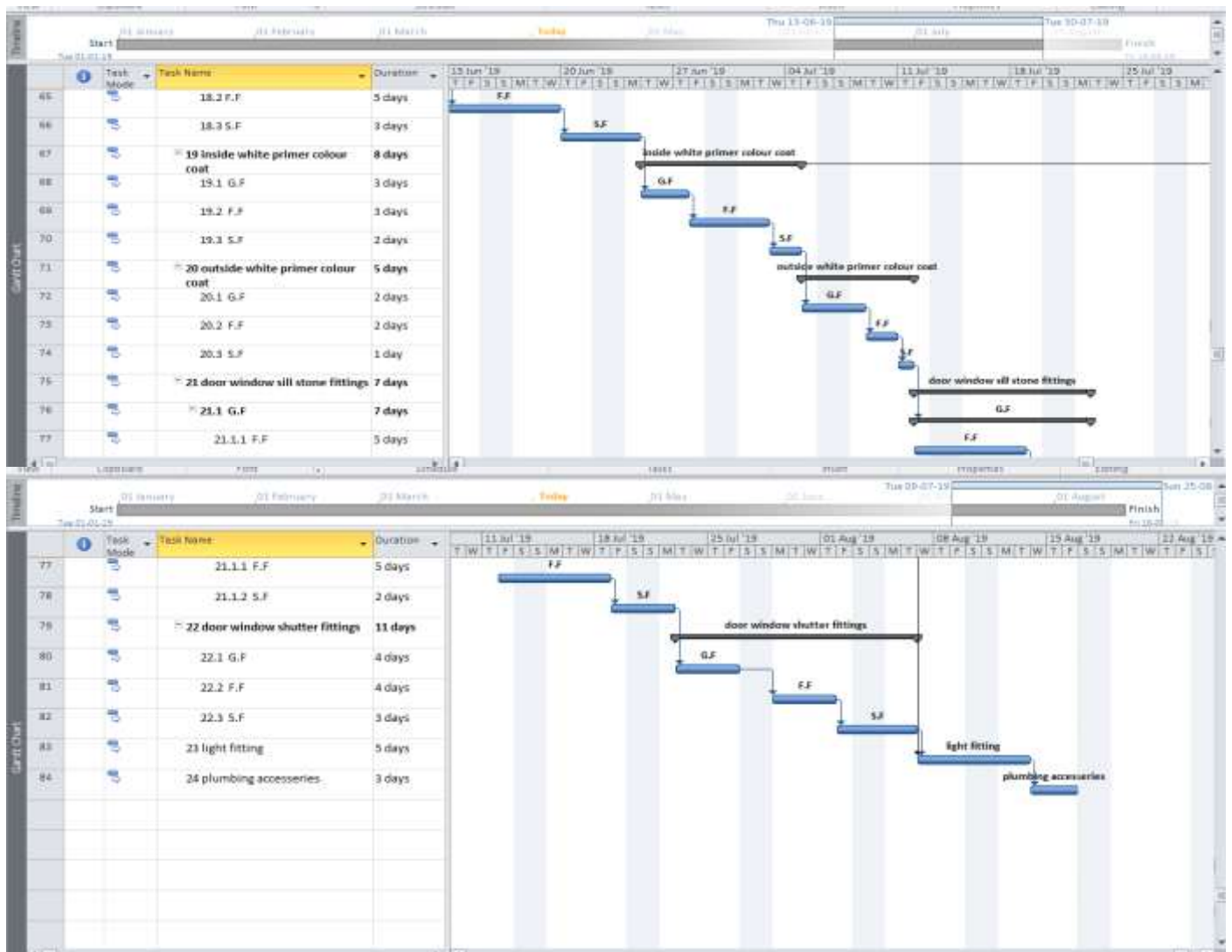


Fig-5: - Erosion Effect in R.C.C Slab

BAR CHART OF PROJECT SCHEDULING FOR RESIDENTIAL BUILDING







### 3. CONCLUSIONS

- With help of both engineering aspect and management aspect we have try to prove that both quality control and management of different activities will increase the efficiency and reduce the project cost
- Economical construction work in specific time period bar chart is very helpful
- Proper create Bar Chart so, save time, reduce cost, reduce material waste.

### REFERENCES

1. Text book on Construction Management: "Theory of construction management –Theory and Practices by K N Jha
2. Quality specification by Govt. Of India: Specification for civil work 2009
3. Hand Book On Quality Control: "Material testing book By Shiv Kumar"

### Reference Link

- [www.icac.org.hk/filemanager/en/Content\\_1031/construction\\_qctestesting.pdf](http://www.icac.org.hk/filemanager/en/Content_1031/construction_qctestesting.pdf)
- <http://civilblog.org/category/construction-materials>

- <https://theconstructor.org/practical-guide/water-quality-tests-concrete-construction/7357/>
- [mhupa.gov.in/writereaddata/Quality-Assurance-Manual.pdf](http://mhupa.gov.in/writereaddata/Quality-Assurance-Manual.pdf)  
[www.dudbc.gov.np/uploads/default/files/945fbff43121355eead2401e84446cb5.pdf](http://www.dudbc.gov.np/uploads/default/files/945fbff43121355eead2401e84446cb5.pdf)
- [https://en.wikipedia.org/wiki/Construction\\_management](https://en.wikipedia.org/wiki/Construction_management)
- [www.Youtube.com](http://www.Youtube.com)
- [www.quora.com](http://www.quora.com)

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