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To Study Effective Implementation of ERP System and Its Applicability to Multi-storeyed Residential Building

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Abstract— *Speaking of global trade, India has finally found a step forward. Therefore, large and medium-sized domestic businesses adopt standards and processes that meet international norms. Given the needs of the Indian market, it has become a major reason why IT solutions vendors are happy. Statistically, IT spending for Indian companies has increased dramatically in recent years. ERP was one of the first IT ideas to enter the Indian market, but it had mixed results. ERP is a company-run software management system that integrates all aspects of an organization, including planning, production, marketing, and marketing. The business environment has grown increasingly difficult, and the market has shifted from domestic to global. Managers are constantly under pressure to improve competition by reducing operational costs and improving resources. Organizations should therefore be more accountable to customers and competitors. And ERP, as a business solution, seeks to assist managers in establishing better business processes and providing them with the information they need to make timely decisions*

Keyword: ERP System , *management Software , Rework , PO , Material Quantity*

1. INTRODUCTION

ERP is a computer-based program that seeks to integrate all departmental programs into a single integrated software system that uses a single website, allowing different departments to easily share information and communicate. ERP software is a business solution that provides powerful analytics based on data from a variety of building processes, including accounting / financial management, contract management, machinery / innovation management, human finance management, project management, vendor management, bid management, Customer Relationship Management (CRM) , planning, shipping, asset management, and more. ERP programs can help a construction company in a variety of ways. Because ERP systems effectively connect all aspects of the business, more accurate control is possible. ERP systems can eliminate data sales, control data generated by multiple departments, and reduce data registration errors. ERP systems are software compilation of integrated application modules with integrated structures used by businesses to integrate data and process real-time information throughout their supply chain. The benefits of installing an ERP system have made it an integral part of today's organization. The construction business has problems that are different from those faced by the industry and the utility industry. This requires efficient resource allocation, project planning, staff tracking, and, most importantly, information exchange. Organizations in developing countries are often reluctant to use ERP systems because of their specific needs and limited availability of software for the construction industry.

1.1. What Is ERP?

ERP is a computer-based program that seeks to integrate all departmental programs into a single integrated software system that uses a single website, allowing different departments to easily share information and communicate. ERP software is a business solution that provides powerful analytics based on data from a variety of building processes, including accounting / financial management, contract management, machinery / innovation management, human finance management, project management, vendor management, bid management, Customer Relationship Management (CRM) , planning, shipping, asset management, and more. ERP programs can help a construction company in a variety of ways. Because ERP systems effectively connect all aspects of the business, more accurate control is possible. ERP systems can eliminate data sales, control data generated by multiple departments, and reduce data registration errors. ERP systems are software compilation of integrated application modules with integrated structures used by businesses to integrate data and process real-time information throughout their supply chain. The benefits of installing an ERP system have made it an integral part of today's organization. The construction business has

problems that are different from those faced by the industry and the utility industry. This requires efficient resource allocation, project planning, staff tracking, and, most importantly, information exchange. Organizations in developing countries are often reluctant to use ERP systems because of their specific needs and limited availability of software for the construction industry.

1.2 Benefits of ERP

Following are some of the benefits they achieved by implementing the ERP packages:

- Gives Accounts Payable workers more control over invoicing and payment processing, increasing productivity and reducing reliance on computer personnel for these processe
- Reduce the need of paper documents by offering online forms for easily inputting and retrieving data.
- Improves information timeliness by allowing publication daily rather than monthly.
- Greater accuracy of information with extensive content, better presentation, and auditor satisfaction
- Better cost control.
- Improved customer response and follow-up.
- More efficient cash collection, for example, a significant reduction in client payment delays.

2. PROBLEM STATEMENT

Majestique Towers is a residential development by Majestique Landmarks in Kharadi, Pune. The project provides Apartments with a great blend of modern architecture and amenities to give a comfortable living environment. The Apartment is available in the following configurations: 2 and 3 bedroom apartments. This is an RERA-approved project. The project takes up a total of 13.1 acres of land. Majestique Towers consists of 19 towers in total. The building has 16 storeys. There are 984 units of lodging available. The project takes up a total of 13.1 acres of land. Majestique Towers consists of 19 towers in total.

Fig 1 3D view of Majestique Towers.

3. DATA COLLECTION

3.1 Items List

This is a list of building materials. Many types of building materials are used in the construction industry to build buildings and structures. These categories of materials and products are used by architects and construction project managers to determine the materials and methods used for construction projects. Other building materials such as cold rolled steel frame are considered modern construction methods, in addition to less expensive methods such as blocks and planks. Many building materials have a variety of uses; therefore it is always a good idea to contact the manufacturer to check that the product is best suited to your needs.

ID	Item Class Name	Item Description
552	BRICK MASONARY	Burnt bricks, red bricks, siporex bricks, fly ash bricks.
740	floor cleaning work	-
744	RCC Chamber	-
616	"BBM"&"Concrete work"	-
829	) flush tank slim (dual flush) l420w380h110	-
799	1.5 2 CORE	CABLE
801	10 SQ.MM	COPPER LUGS
787	100 mm	PVC bend
790	100 mm pvc bend	-
793	100 watt led	full set
827	2) 32/8screw	SCREW
797	200	AMP BUS BAR

3.2 Material List

ID	Material Class Name
665	Expantion Sheet
583	10 hp pump with 100rft pipe
592	100 amp bus bar
591	100 Amp main switch
659	100 mm pvc bend
656	100 mm pvc elbow
657	100 mm pvc elbow.
661	100 mm pvc socket
654	100 mm pvc tee
663	100 mm shoe bend
652	100 pvc pipe
640	100mm clips for flexible pipe

3.3 Supplier list

ID	Supplier Name	Contact No
71	A B SALES	9326870818
191	Aakash Bricks	8796959595
257	ACC Limited	9763398253
68	Accurate Powertech India Pvt Ltd	9822602449
80	ADARSH STEELS	9890811888
201	Aditya Transport	9689601113
170	Agarwal Agencies	7066028108
189	Agrawal Traders	9922588622
151	AHLADA ENGINEERS PVT. LTD	9177327799
197	Ajinkyatara Enterprises	9881860640
91	ALOK DISTRIBUTORS	9028177554
206	AlokInframatePvt.LTd.	9850982020
162	AMAFHH TRADERS	9422033320
177	Amar Enterprises	9028535311

4. ANALYSIS IN ERP

Create Project with name of MAJESTIQUE TOWERS in ERP.

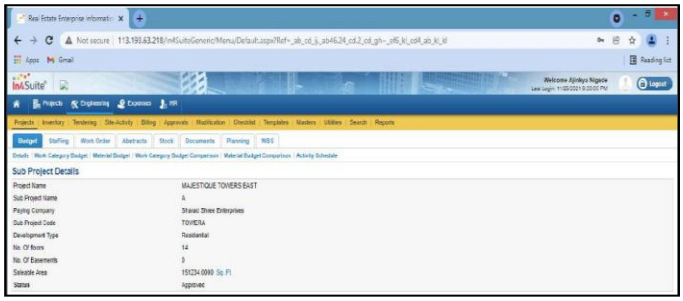

Fig 2 Create project in ERP

4.1 BOQ

BoQ means a bill of quantity is a document prepared by a cost estimator to calculate the exact costing of project work by multiplying item work by their rate.

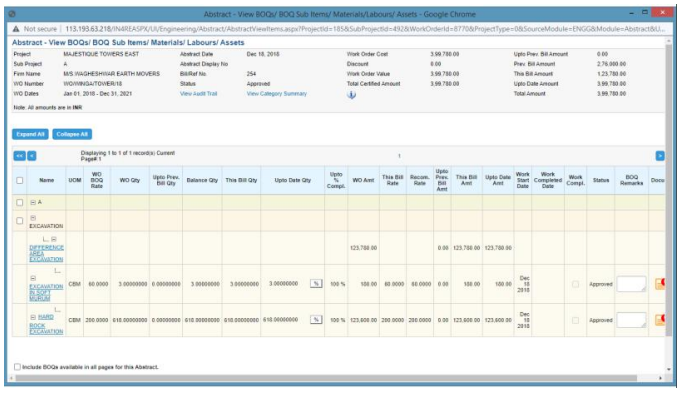

Fig 3 BoQ in ERP

4.2 Sub Project Work Category Budget

A job without a budget is like a car without fuel. Funding is essential to start the project and stop all resources.

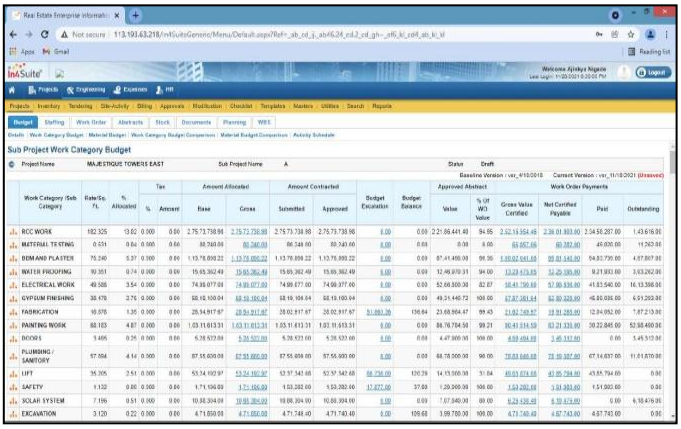

Fig 4 Sub Project Work Category Budge

4.3 Work Orders

Work order authorizes product development — providing a production team with a way to create a product to meet specific needs. Properly covered, it will withstand a great deal of adverse conditions and run times (BOM).

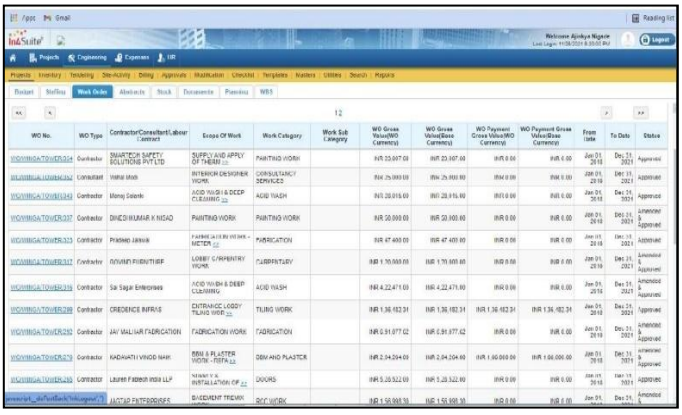

Fig 5 Work Orders

4.4 Material In Stock

Companies in the materials industry are involved in the discovery, production, and processing of raw materials, which are utilised in a variety of sectors and industries.

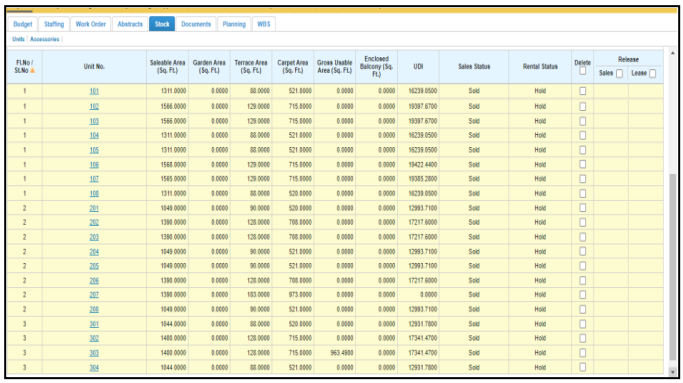

Fig 6 Material In Stock

4.5 Purchase Order And Its Status

A purchase order (PO) is a business document and the buyer's first official offer to the seller that specifies the types, quantities, and agreed-upon pricing for items or services. It is used to manage the purchase of goods and services from third-party vendors.

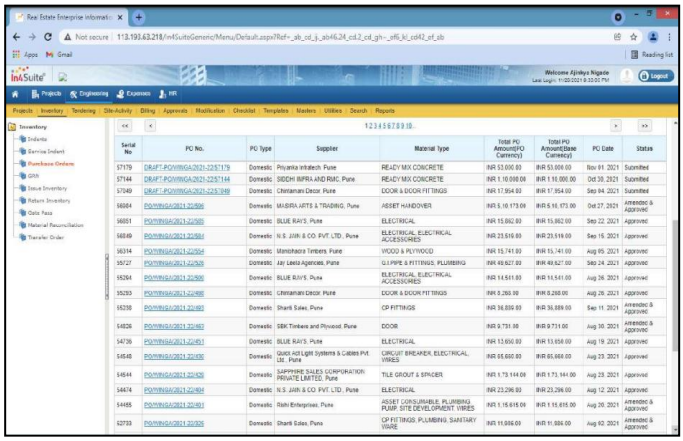

Fig 7 Purchase Order And Its Status

5. REWORK ON PROJECT

The potential of rework in most every building project has an impact on the demand and schedule of project operations. Based on the fact that rework has a similar impact on costs and timeline.

Fig 8 Problem- Plinth Beam passing through Septic Tank

5.1 Rework cost calculation

Throughout the course of this study, Calculate the amount of rework and its cost; provide an example to show how to calculate the amount of rework and its cost. Activities A, B, C, D, E, and F are depicted in this example, along with their duration and usual cost. A project charter outlining all of these actions is also given.

Table 1 Normal Activity cost calculation

Activity	**Activity**	**Duration** (days)	**Normal** cost (Rs)
A	Excavation and filing for Septic tank plinth beam	12	12,000/-
B	Septic tank concreting	2	1,800/-
C	Septic tank brickwork	3	1,400/-
D	Septic tank Plaster	4	3,600/-
E	Septic tank pounding	6	13,500/-
Total		27	32300

Table 2 Rework cost calculation

Activity	Activity	Duration (days)	Normal cost (Rs)
A	Excavation and filing for Septic tank plinth beam	12	12,000/-
B	Septic tank concreting	2	1,800/-
C	Plinth Beam casting	4	14500/-
G	Plinth Beam Demolition	3	5000
D	Septic tank brickwork	3	1,400/-
E	Septic tank Plaster	4	3,600/-
F	Septic tank pounding	6	13,500/-
Total		34	51800

4. CONCLUSION

- Manufacturers may use a recognised ERP system to accurately plan production, increase capacity utilisation, decrease inventory, and meet guaranteed delivery dates.
- The advantages of implementing an ERP system have made them an essential component of today's companies.
- Extra appropriate administration is feasible since ERP systems successfully link all parts of an organisation.
- ERP systems were designed to automate back-office functions that had no direct influence on customers or the wider public.
- Developers are now working hard to integrate mobile phones with both ERP applications.
- The difficulties might be due to the system, business approach, infrastructure, training, or a lack of ambition. Despite the fact that older ERP systems were designed for huge corporations, smaller firms are increasingly utilising ERP systems.
- The ERP framework integrates diverse structural systems and allows for incorrect transaction and production, boosting an organization's performance. Prior to installing an ERP software package, businesses must conduct a detailed examination of their business operations.
- It also allows for a comparison of existing procedures to those provided by ERP software.

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