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AN ANALYSIS OF SAFETY MANAGEMENT FOR HIGHRISE BUILDING

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Abstract:

India is mainly agricultural based country but now a day construction industry stands next to agriculture. Construction job is very risky jobs as compared to other in safety point of view. The disturbing thing in construction work is mainly number of fatalities occurring. This is mainly due to lack of knowledge. Construction safety has long been a big concern. Construction is regarded as unsafe in terms of safety and health, especially in developing countries such as India. So Proper Safety Management System must be applied on every construction site. Safety management for high-rise buildings is paramount to ensure the well-being of occupants and protect against potential hazards. Firstly, comprehensive risk assessments must be conducted to identify potential safety threats, including fire, structural integrity, and evacuation procedures. Regular inspections and maintenance of fire suppression systems, such as sprinklers and fire alarms, are essential to ensure they are functioning correctly. Additionally, emergency response plans should be developed and practiced regularly to ensure all occupants know how to react in case of an emergency. Adequate signage, clear evacuation routes, and designated assembly points are critical components of these plans. Training programs for building staff and occupants on safety procedures and protocols should be implemented to enhance preparedness and response effectiveness. Continuous monitoring of building systems and regular drills can help mitigate risks and ensure a safe environment for all inhabitants. Collaboration with local emergency services and adherence to building codes and regulations further contribute to effective safety management in high-rise buildings. Safety management for high-rise buildings is a critical aspect of urban infrastructure management.

Keywords: Construction industry, Safety, Safety management, Safety Measures.

Introduction:

Safety in the construction industry is a fundamental concern that encompasses a wide array of practices aimed at protecting the well-being of workers, bystanders, and the environment. From rigorous risk assessments to regulatory compliance and comprehensive safety training, every aspect of construction work is scrutinized to minimize potential hazards. Measures such as fall protection systems, equipment safety protocols, and site management procedures are rigorously enforced to mitigate risks and prevent accidents. Additionally, emergency preparedness plans and health promotion initiatives contribute to fostering a culture of safety on construction sites. By prioritizing safety at all levels of operation and embracing continuous improvement, the construction industry can strive towards achieving safer work environments and reducing the incidence of accidents and injuries.

- Safety in the construction industry is of paramount importance for several reasons:
- Protection of Human Lives.
- Reduction of Injuries and Illnesses.
- Legal Compliance.
- Enhancement of Productivity
- Risk Mitigation
- Improved Reputation and Client Satisfaction
- Cost Savings

Objective:

- To study the concept of safety management in construction of high-rise buildings.
- To study various hazards, accidents and its preventive measures.
- To study the safety measures used on construction site for Highrise Building.
- Analysis the safety management system used on construction sites.

Need of study:

Safety management is essential to prevent accidents and injuries, ensuring the well-being of employees and the public. It minimizes risks, reduces financial losses from incidents, and ensures compliance with legal and regulatory standards.

Literature Review:

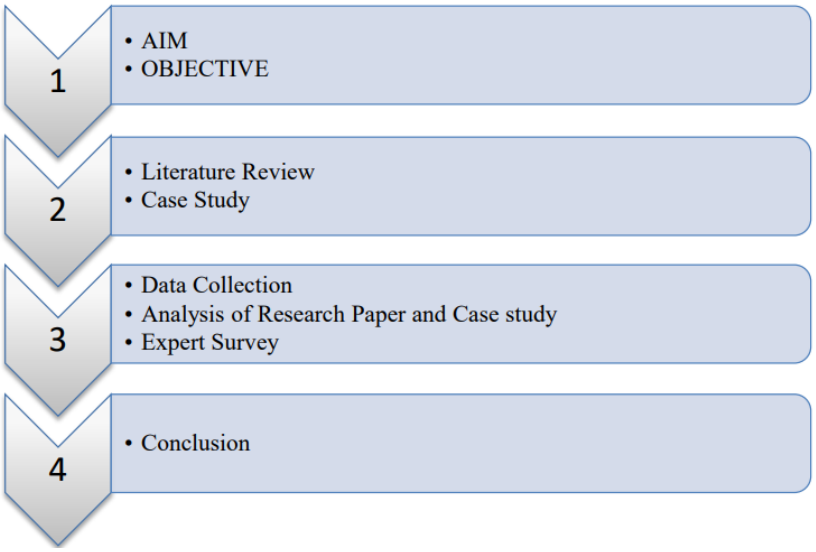
Research Paper: 1 Safety Management in Construction Industry Sayyad Farhat Asadali1, Prof.D.B.Desai

In this paper, identify cause of accidents, assessed, and satisfactorily rectified. Also, several construction safety techniques were used for the safety of major construction organizations across India involved in construction industry. Research has shown that false practices by workers and inadequate supervision are the basic causes of an accident. Also, failures of management towards safety practices (safety training, safety education, awareness program, etc.) are other consequences of accidents. Also, it determines the importance of integrating and improving safety management standards within construction project management in India.The authors would like to conclude that the single most important determinant of the success of an organization in implementing CSM is its ability to translate, integrate, and ultimately institutionalize CSM behaviors into everyday practice on the job.

Research Paper: 2 Study of safety management on high rise buildings through workers behaviors Author Name: Mr.Atul B. Mane

The paper gives brief introduction of Investigation in safety measures of high-rise building is a vast topic having a huge research going on several aspects of this topic. It also states that it is an intense need to learn and understand the view of various authors from various parts to give own contribution on this topic. It concludes that Safety measures at construction sites of high-rise building helps to prevent unforeseen accidents. Accidents at construction sites may lead to loss of life and involve huge cost. Safety and precautions should therefore be an integral part of the operations of each construction site. This will enhance the success of the program as well as ensure project activities are completed as scheduled without delay.

Methodology:



Data Analysis Process:

For the Data Analysis process Case of safety management is done to identify and analyzed the Safety measures used on site and it's important for the safety of construction industry.

Types of construction accidents:

Crane or Hoist Accidents

Slips and falls.

Being struck by falling objects.

Getting caught in or between objects.

Fires and explosions.

Gas leaks.

Forklift Accidents.

Electrocutions.

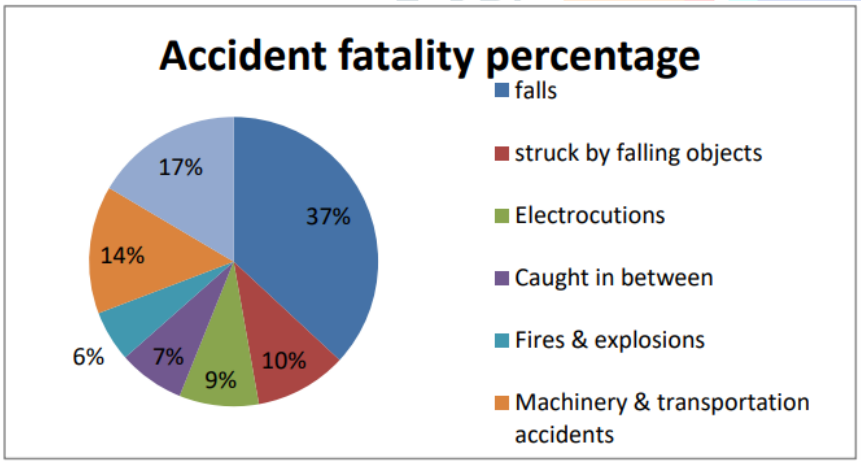
Chemical spills.

Trench Collapses.

Defective Tools and machinery.

Defective safety equipment.

Machinery accidents.



Live case study-1 – Tej Elevia baner, Pune.

Project name -

Tej Elevia Baner, Pune.

Total Floor

Proposed Commercial & residential Building.Ground+podium+27 Floor

Site Status:

Marketing office is done.

12th floor work is in process.

Location:

Road, Foundree Preschool Rd, nr. Shroff House, Baner, Pune, Maharashtra 411045

Live case study-2 – Vision vanessa ravet**,** Pune.

Project name - vision vanessa Ravet

Total Floor -Ground floor+podium +22 floors

Site Status:

Marketing office is done**.**

16th floor work is in process.

Location:

Tulip Street, Pradhikaran, Sector 32 A, Ravet, Pimpri-Chinchwad, Maharashtra.

Case Study Conclusion –

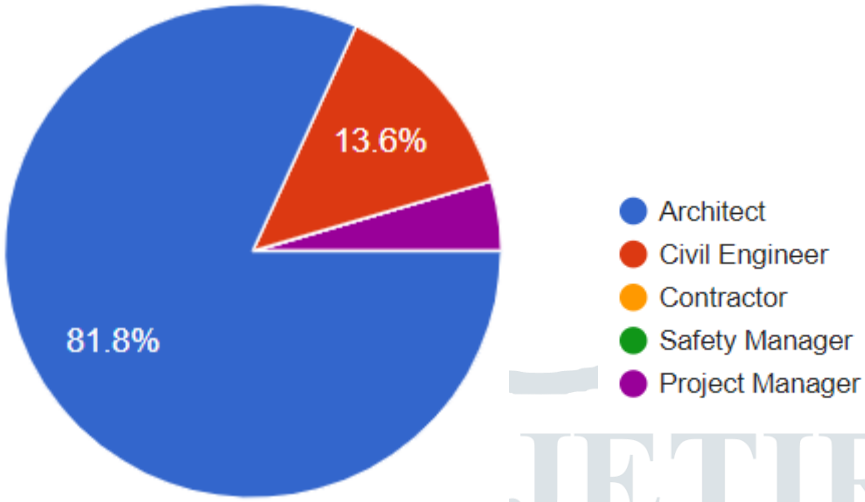
As both the case study are for highrise building having project management company are appointed for the both case study so the Safety measures are identify and analysed as shown in the given table:

No.	Safety Measures use on site	Case Study-1 TEJ ELEVIA BANER, PUNE	Case Study- 2 VISION VANESSA RAVET
1.	Safety Tree and Safety Signages	✓ Safety Tree is used.	✓ Safety Tree used.
2.	Daily Tool box and Checklist	✓	✓
3.	Horizontal and Vertical Net for fall Protection	✓	✓
4.	Duct Protection	✓	✓
5.	Slab Edge Protection	✓	✓
6.	Staircase Hand Railing Protection	✓	✓
7.	Lift Shaft Protection	✓	✓
8.	Basement Lift shaft Protection And Floor Cutouts Protection.	✓	Not applicable site but they used for other sites.
9.	Working Slab Lifeline Protection.	✓	Not seen on site. But used while Slab casting
10.	Daily Housekeeping and Fogging at Labor Camp.	✓	✓
11.	Cut out closing and railing for staircase are provided.	✓	✓
12.	Tower Crane Third party Inspection.	✓	✓
13.	Electrical Panel Board Pin top Protection.	✓	✓
14.	Safety statistics	✓	-
15.	HSE(Health safety Enviroment) training conducted during the year	✓	✓
16.	Action Proposed by the site to achieve the target of "no fatality" / severity rate	✓	-

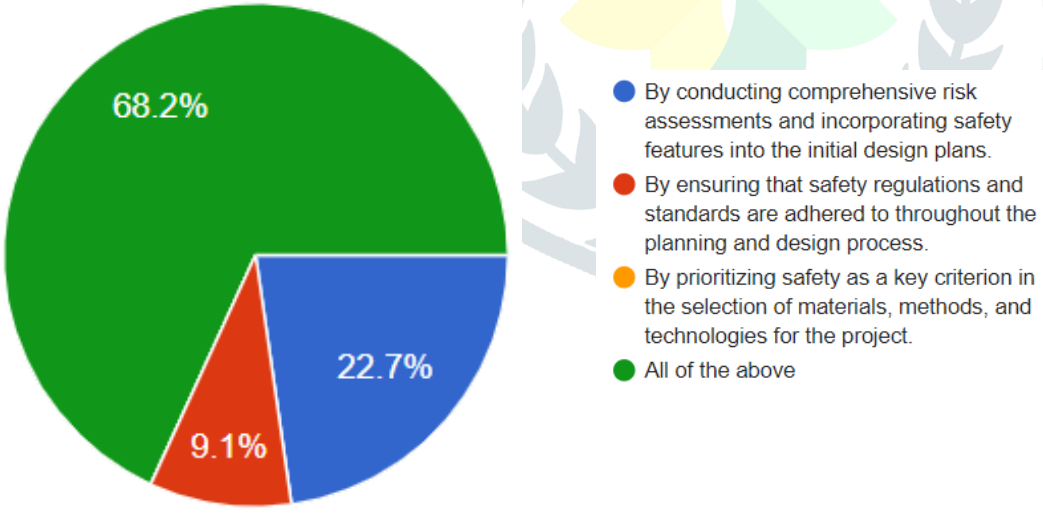
Case Study Analysis.

Questionnaire survey for safety management on site:

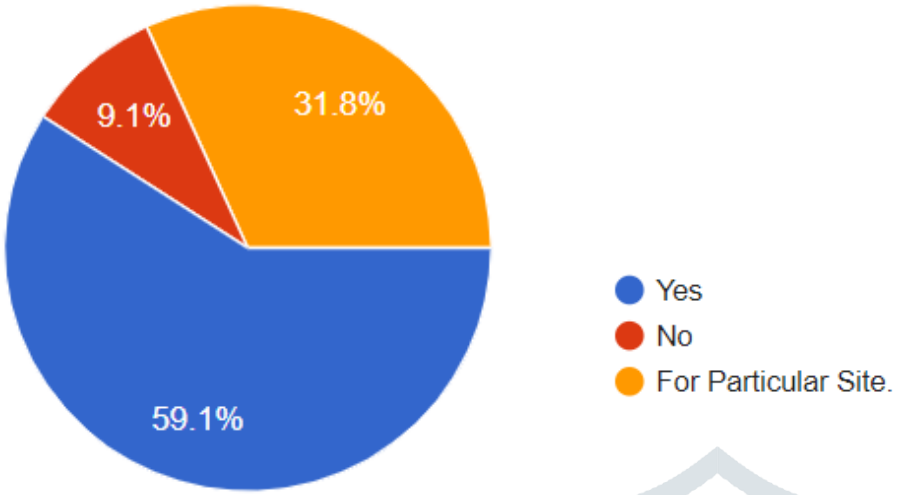
1. **What is your role in Construction Industry?**



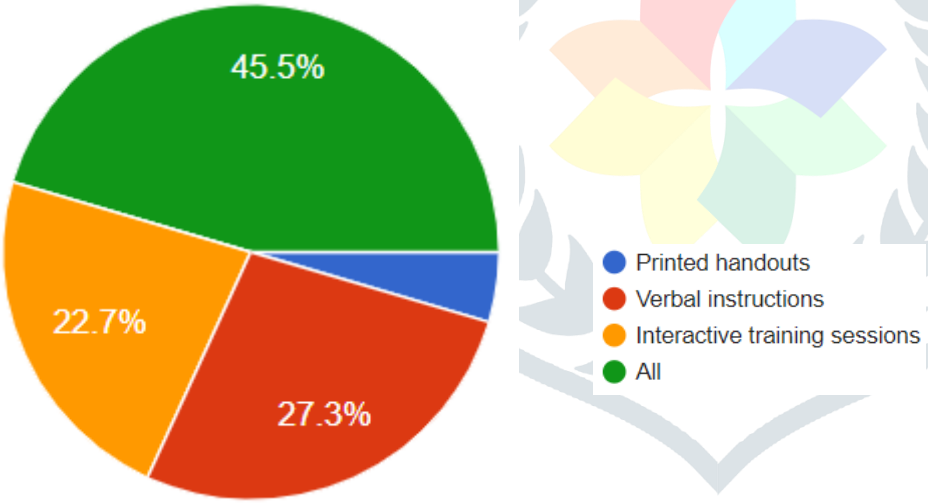
2. **How do you prioritize safety during the planning and design phases of construction projects?**



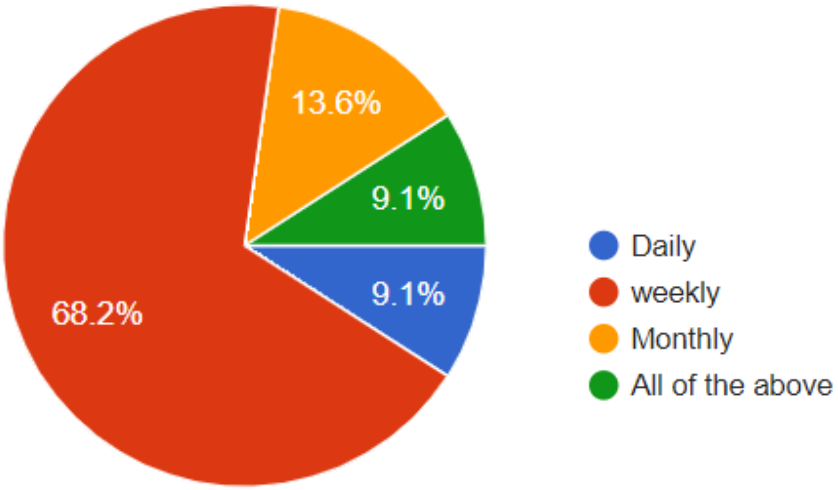
3. **All safety regulation and Standard followed on site?**



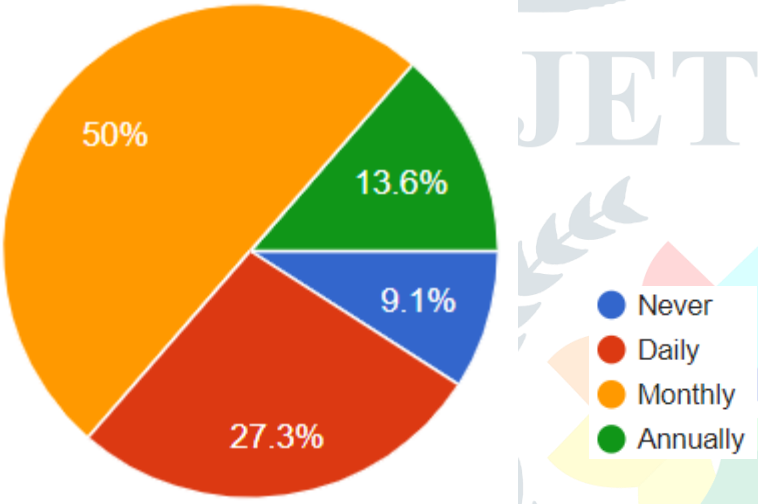
4. **What is the primary method used to communicate safety information to construction workers?**



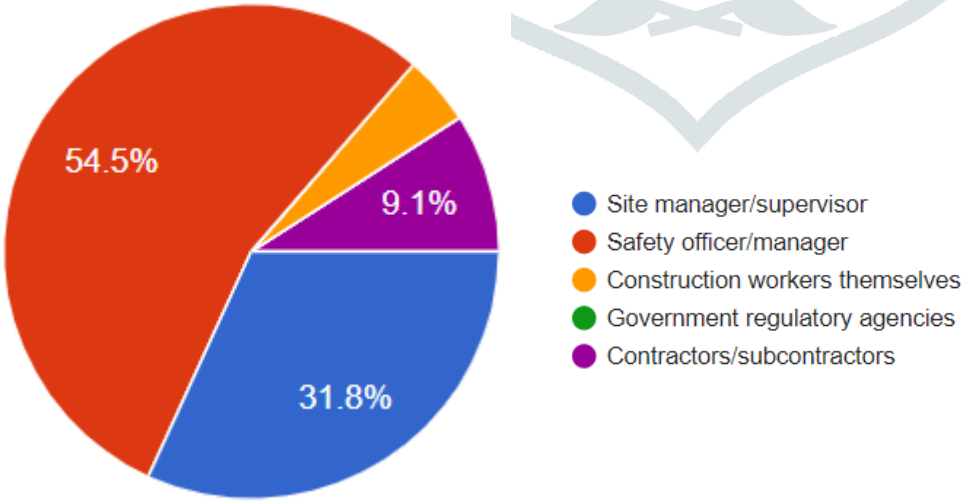
5. **How often safety training programs conducted?**



6. **How frequently are safety inspections conducted in your high-rise building?**



7. **Who is primarily responsible for enforcing safety regulations on the construction site?**



8. Your Opinion on Current safety Practices in construction Industry?

- Safety practices in the construction industry are improving but can still be enhanced with better training, stricter enforcement, and advanced technology.
- Must be made mandatory
- Monthly safety programs should be conducted for the workers
- Need to be strictly followed and inspected. More safety regulations for the workers as well as visitors should follow. A lot of families suffer losses due to deaths or causalities due to site mishaps.
- Needs to be more strictly applicable
- Should be more precise on Daily working
- Overall, current safety practices in the construction industry have significantly improved over the years, with better regulations, training, and technology. However, there's always room for further enhancement to ensure the well-being of workers and prevent accidents.
- Safety should be inherited to working culture. At the same time there should be balance for making safety regulations. Many times, safety regulations are imposed in a way that the workers try neglect it for achievement of work target.

Conclusion:

- The importance of a safety management system in high-rise buildings cannot be overstated. These towering structures pose unique challenges due to their height, complex infrastructure, and dense occupancy. A robust safety management system serves as the cornerstone for safeguarding the lives and well-being of occupants and protecting valuable assets.
- Safety measures on construction sites are indispensable for safeguarding the health and well-being of laborers, who face a multitude of risks in their day-to-day work. These measures serve as a lifeline, offering protection against potential hazards such as falls, electrocution, and heavy equipment accidents. When workers feel valued and protected, morale improves, leading to increased productivity and job satisfaction. Additionally, adherence to safety regulations not only protects individual workers but also shields construction companies from legal liabilities and financial losses associated with workplace accidents.
- Safety measures on construction sites are not just about compliance; they are a testament to the commitment of employers to prioritize the health, safety, and dignity of their labor force, ensuring that every worker returns home safely at the end of the day.
- The analysis of safety measures employed in high-rise buildings underscores the paramount importance of a comprehensive and integrated approach to mitigating risks and ensuring the well-being of occupants.
- A Prioritizing safety fosters a positive reputation for the building, attracting tenants, investors, and customers who value security and reliability. In essence, a safety management system is indispensable

for ensuring the resilience, compliance, and reputation of high-rise buildings while prioritizing the safety and security of all who inhabit or interact with them.

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