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## LABOUR PRODUCTIVITY CONCERN IN MULTI STOREY BUILDING CONSTRUCTION

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### ABSTRACT

The Construction Industry, which is next to agriculture, offering wide spread employment opportunities to people of all walks of life, is gaining momentum again, after the devastation of demonetisation.

The Builders, who had initially shown apprehensions about the RERA, have now understood the merit of it and wholeheartedly started complying with the same.

From the customers' point of view, the availability of long term institutional finance induces them to make a wise investment in apartments. Also, from the social point of view, the first preference of newly wedded couple is to buy an apartment of their own. This occupies a strong place in their sentiments.

Another important reason is that the migration of people from rural areas to urban areas for employment purposes necessitates larger dwelling requirements.

All the above have given a fresh impetus for large scale construction activities throughout. Construction of apartments ranging from two floors to as many as 12 floors is a common sight in the city and the outskirts of same.

**KEYWORDS:** Labour Productivity, JIT, Logistics Management, Time Cost Relationship, Weekly Site Evaluation.

## 1. INTRODUCTION

### Methodology

Visit to sites in the Chennai City. Personal observation and discussion.

Contours	Details
No. of sites visited	2
No. of floors	6 and 8
Personnel strength	150 – 200
Female workers	10% (approx.)
aMigrant workers	About 30 in both sites
Compliance with CMDA/RERA	100%
Facilities offered	Covered Car Park, 24 hours security, Camera coverage of the entire site, GYM, Children's play area etc.,

### Labour Productivity

In mathematical terms, productivity is measured by dividing output by input. This calculation cannot be simply applied on Labour. Technically it may be fine, but actually, there are a number of things that will have a direct bearing on the labour productivity. It differs from site to site, given the level of machines used, site conditions, behaviour of other employees and a host of further more.

The visit to the two sites revealed how labour productivity can be increased at the construction projects.

It is worthwhile knowing the wage structures for the construction labourers in Chennai.



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Workers	Wages (Rs)
Mason	750
Male Asst.	500
Female Asst. (Sitthhal)	300 – 400
Carpenters	750
Plumbers	600
Painter	600

### How the site conditions affect productivity?

The site conditions have a great impact on labour productivity. If the site is fully labour oriented, the productivity is low. On the other hand, if it has a mix of machines as well, then their productivity is significantly high. This can be, perhaps, due to faster execution of work by machineries.

Similarly, when the site is small and cramped, this restricts the free movement of the workers and they become easily fatigued within a few hours. For the rest of the day, their mental makeup would be to leave the site as quickly as possible.

It is to be understood that workers are prepared to even stay back willingly to finish the work, but, the poor site conditions belittle their enthusiasm. The sight of the site plays a dominant role in determining the productivity of the construction workers.

This is a common feature in small construction sites which are 100% labour oriented.

Both the sites visited have safety parameters intact. This infuses a sort of “safe working atmosphere” in the minds of workers. The chat with some of the workers at both the sites also revealed that they are ‘quite comfortable’ at the site.

They further said that they have no difficulty in extended working also, as the site is maintained like Day during Night also, at least during operating hours.

In this regard, it is worthwhile noting the following.

“The worker’s productivity is determined or disturbed by the following.

Equipment failure/Fire/Electricity/Hazardous substances/Unhealthy condition/poor design/unsafe operating practices/noise and lighting.

All the above hazards can be identified and either eliminated or mitigated. Clearly, such a risk assessment must be carried out at regular intervals, say every six months, as conditions change and new practices may be incorporated as the project develops”.

**(Source: Pages 278 – 282. Book Name: Project Management Planning and Control – Fifth Edition. Author: Eur Ing Albert Lester, copyright @ 2007, Albert Lester, Published By: Butter Worth-Heinemann, is an imprint of Elsevier. Linacre House, Jordan Hill, Oxford OX2 8 DP, UK, 30, Corporate Drive, Suite 400, Burlington, MA 01803, USA. ISBN: 978 – 0 – 7506 – 6956 – 6)**

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### Shift of Concern from Capital to Human Resources

Nowadays, Capital is not an alarming concern (unlike it was before) but the qualified and committed workers. From the traditional practice of labour oriented construction, the projects are now fast moving towards mechanisation. They aim at striking a perfect blend of men and machines for enhanced productivity.



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The Builders are quite specific that their labour strength should be full of knowledgeable, work centric, and committed people.

Both the sites have qualified Site Supervisors with construction engineering graduation (Civil Engineers).

Apart from minimal permanent staff of the Builder, the construction workers are outsourced through Labour Contract. The Contractor, who is a Civil Engineer by himself, sends only committed workers to the sites.

In both the sites, the performance of the workers was quite appreciable. No sulking in the absence of supervision. No go slow or wasting of time. But one important thing was observed. Perhaps, it can be attributable to the personal characteristic feature of the Supervisor.

At one site, the Engineer was individually praising the workers for their active involvement and timely execution of the assignment. This was very selective. The thing is, while the group consisted more than 75 workers, a few (of course) individuals of workaholic nature were only personally praised by the Engineer, to the dismay of the group.

Those individuals eyes were gleaming in pride and whereas the look of the rest was stoic. The underlying danger in this situation is that while those workers would be thrilled to show further enthusiasm in their activities, the others would develop a sort of indifference. This will certainly affect the "Overall Group Productivity".

While praising the committed workers is necessary, it should not be to the extent of antagonising others in the group. It is also equally important that a general praise of the whole group would not evoke any individual interest or boost the worker's personal involvement.

The Site Supervisor should be a person of Great Calibre in serving the praise and boosting the productivity but at the same time should not lose anything or cause enmity to others.

Here, it is quite necessary to know the following.

"Reinforce the need for co-operation by singling out examples of co-operation throughout the project. The problem is that many Project Leaders give praise to individual achievement which reinforces the importance of individual work over team work.

Alternatively, some Project Leaders give general praise to the Team. This is so vague that it appears meaningless and has little impact".

**(Source: Pages 106 – 108. Book Name: Break Through Technology Project Management – Second Edition. Authors: Bennet P. Lientz and Kathryn P. Rea, Copyright @2001, 2000 by Elsevier (USA). Butter Worth – Heinemann is an imprint of Elsevier, Elsevier Science, 200, Wheeler Road, Burlington, MA01803, ISBN: 0 – 12 – 449968 – 6)**

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### **JIT is not a Slogan but a Must at the Site**

The overall perception of JIT (Just In Time) is normally applied, as a yard stick, to materials only. On a closer observation, we can say with certainty that over and above materials, it is applicable to everything as well.

Generally, construction activities cannot be done rapidly as every activity has its own time limit to wait and move to the next stage. A simple example is concrete. After finishing the concrete activities, a minimum period of 21 days is a must to wait before proceeding further on it. All these are taken in to consideration by the project authorities while calculating the completion period of the construction.



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Certain delays would occur suddenly during the construction. Definitely, majority of these can be avoided with proper planning and co-ordination.

In one site, it was observed that the crane was made available only after three hours of the slotted time. A bunch of more than 50 workers were simply sitting idle around the pre-stressed concrete beams waiting for the cranes. The confusion was due to miscommunication at both the site personnel and also at the crane supplier's end. Major part of the blame was to be borne only by the site personnel for their miscalculation in the completion schedule of the activities.

Going by cost calculation, wages was wastefully paid for about 20 workers for no productivity. From the activities point of view, 150 labour hours were simply wasted with zero productivity.

The loss to the Builder was two pronged. One with zero productivity for 150 labour hours and the other one is wasteful payment for 20 workers (opportunity costing).

In order to complete the work, the workers were asked to do over time. The payment of overtime was a further blow to the builder, silently eroding his profit margin.

Certainly, workers cannot be blamed for this. Nor is the crane supplier. The fault totally rests only with Site Engineer, Site Supervisor and the Site In Charge. All in the group slipped in their function and co-ordination. A clear case of lack of Team Spirit.

It is worthwhile noting the following.

“People do Projects, not charts, software, machines or methodologies – and because of this fundamental truth, any of the following can transform a perfectly doable project into failure or at best a project overtime and budget.

- Having the wrong people
- Having the right people but not having them working together sufficiently, as a team.
- Having the right people but without having developed their skills adequately.

**(Source: Pages 234 – 235. Book Name: The Definitive Guide to Project Management – the fast track to getting the job done on time and on budget – second edition. Authors: Sebastin Nokes and Sean Kelley. Published by: Dorling Kindersley (India) Pvt Ltd, Licensees of Pearson Education in South Asia, HO 482, FIE, Patparganj, Delhi 110092, India. ISBN: 81 – 317 – 1457 – 8)**

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### Periodic Evaluation is a Must

One of the sites, of the two visited, was brilliantly progressing in the activities, thanks to the Project Manager. The owner of the site, a reputed builder, is known for simultaneously taking up multi projects.

While each site was allotted with an independent Site Engineer, all the sites would be monitored by the Project Manager.

The Site Engineers were entrusted with the responsibility of preparing Weekly Report and to discuss with the Project Manager.

This Weekly Report would contain the various activities taken place during the week. Problems encountered during the week, Cause and effect of the problem, Details of corrective Action taken etc.

The Project Manager would hold discussions with each site officials on the Plan Vs Actuals. Based on the detailed discussion, preventive action would be taken to avoid recurrence of such instances.



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It has to be clearly understood here that while Supervision is a daily routine on the various affairs taking place at the site, Inspection is an important thing as it decides “how and what the activities have been done”. It is a Judgement on the performance carried out.

The Project Manager would discuss with the Builder on every week, on the various sites performance and problems as well.

In fact, many major builders insist on this report from the Site Engineers Via Project Manager. Technically, this is called “Weekly Site Evaluation”.

The Builder is able to get the first hand report on the progress being made at each site. With excellent IT network, any problem can be precisely predicted and appropriate action can be taken. It is highly pertinent to take note of the following.

“Project Manager must exhibit honesty and integrity to foster an atmosphere of trust. Project Managers must understand the technical implications of a problem, since they are ultimately responsible for the decision making. They must demonstrate their versatility and toughness in order to keep subordinates dedicated to goal accomplishment”.

**(Source: Pages 142 – 144. Book Name: Project Management – A Systems Approach to Planning, Scheduling and Controlling – Tenth Edition. Author: Harold Kerzner, P.hD. Copy right @ 2009 by John Wiley & Sons, Published by: John Wiley & Sons Inc, Hoboken, New Jersey, ISBN: 978 – 0 – 470 – 27870 – 3) [ 4 ]**

### **What Determines the Success of the Project?**

Construction Projects involve Group of Men, Tonnes of Materials and Lump of Money. All are precious, no doubt. With all these, the success of the project is actually determined only by the Human Resources employed in the project.

Repetitive jobs, reworks and frequently modified activities will only burn the capital of the builder. Not only that, the materials are also drained away, wastefully. Above all else, the precious time is wasted and the labour productivity is actually zero. (to be in absolute terms, negative).

The Project Manager should be a Visionary and Trouble Shooter. He should be an expert in foreseeing the problem and take proactive action in averting any such. Once a problem creeps in, it develops into a major one very quickly, if it is not resolved then and there.

Many Site In Charges are unmindful of small problems assuming that they are too small and can be ignored.

One of the officials at a site made a private mention that the Site Engineer assumed a problem in plumbing as ‘too small’ with no significance whatever could be, and completed the work. After handing over to customers, many apartment owners started complaining about leakages in pipes and seepages in wall.

The problem became major and involved relaying of pipes all over. The Builder only had to eat away the entire expenses. The negligence on the part of a person cost the builder the earth. The builder is a person of repute in the field and hence without a word, voluntarily came forward for relaying of the pipes to customer satisfaction. In construction field, it is peculiar that the problems perceived to be major would not be actually so and whereas the ones just neglected as trivial will only become a threat. Whatever be the quality of the materials, if the application was faulty, it will only become costly, only to the builder.

The blame squarely rests with the people only who are the actual cause for such problems.

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Labourers are prepared to work for any length of time (provided they are given over time) but the result is determined by the quality of execution and timeliness of completion. It is necessary that the Site In Charge, Site Supervisor and the Site Engineer, all must work in perfect cohesion.

Unity of Command must be there. If the labourers are given many instructions by many people, the job will only ultimately become a mess.

The Site Engineer should be the deciding authority as far as the site is concerned. He must have thorough technical skills, know commercial implications and be a Leader in ensuring harmonious work atmosphere at the site.

There should be role clarity even at workers level.

He must encourage and reward the committed workers and should be bold enough in eliminating nonperforming folk.

The site should be clean and be compliant with all safety regulations. This will certainly boost the morale of the workers and result in excellent productivity.

The Site Engineer should specify project goals in unambiguous terms, encourage and reward creativity on the job, increase accountability and responsibility for project results, grant formal authority to make decisions at the task level.

In this regard, it is quite pertinent to note the following.

“The success of any project is dependent on the human resources associated with linking its components. Human resources are distinguished from other resources because of the ability to learn, adapt to new project situations and set goals”.

**(Source: Pages 188 – 190. Book Name: Step Project Management – Guide for Science, Technology and Engineering Projects. Author: Adedeji B Badiru, copyright @ 2009 by Taylor & Francis Group, LLC, Published by: CRC Press, Taylor & Francis Group, 6000, Broken Sound Parkway, NW, Suite 300, Boca Raton, FL 33487 – 2742. ISBN: 13: 978 – 1 – 4200 – 7235 – 8)**

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## 2. CONCLUSION

Whatever be the size of the project – big or small, the success of the same is determined only by the people handling the project.

Closer observation of the labourers is quite essential. Daily monitoring can be called Supervision. Apart from this, it is necessary that periodic assessment of the activities should be ensured. This is called Inspection. In big projects, weekly inspection is ensured by Project Managers and meetings are conducted with all operating staff. The deliberations are penned down and copies circulated to people concerned. Big builders are very particular on this “Weekly Site Evaluation Report”. Perhaps, this is the main reason for their being the Field Leader.

The concept of JIT is not simply confined to materials alone. It should be applicable to the whole project without missing out anything. Men, Material and Capital – all must be covered under JIT.

In large projects where hundreds of people work, delay of just half a day will become colossal in terms of loss of productivity, revenue and interest burden. Frequent occurrence of these will only lead to project delays besides impairing the reputation of the builder.



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While small builders are not even aware of, established builders are very particular in Time Cost relationship at the site.

### 3. RECOMMENDATION

The Site Engineer should be made accountable for everything taking place in the site. This is the best way to ensure discipline in the site and also for committed performance of all.

A committed Site Engineer is an expert in ensuring quality work at the site and also motivating the people. He is regarded as a Leader by the operating personnel and voluntary compliance takes place with all in the field. He is also an Asset to the Builder.

The Builder should be graceful enough in admitting marginal delays. To cover up delays, never rush through the activities - for troubles would be at store, later.

In large projects, normally the slip ups in Logistics Management only contribute to delays and losses. More attention should be bestowed on this.

Supply Chain Management will certainly curtail the spiralling costs.

For Builders, if various sites are taken up concurrently, it is absolutely necessary to earmark a Project Manager to take care of all the sites. It should be the responsibility of the Project Manager to ensure that all the sites are brought under one umbrella for the sake of Supervision, Inspection and Administration.

The Project Manager is the via media to issue the instructions of the Builder to the sites personnel and also to give the feedback of the sites to the Builder.

Pay equal attention on problems, disregarding the nature – big or small. At times, unattended and repetitive small problems will become major and costly.

Of all the resources, Human Resources is the most valuable as they are only determining the success or otherwise of the project. Always, treat them with dignity which will get back their loyalty.