



AE Arma-Elektropanç

Productivity Improvement through Rapid Intervention

One of the strongest and leading companies in the Turkish engineering and contracting sector, Arma Engineering was founded in 1986 with Elektropanç Electrical Industry being founded in 1991. They joined forces and resources in October 2001 to establish AE Arma-Elektropanç. The company is now a major international construction player, having projects in the residential, commercial, services and industrial segments.

"It was a really good learning experience with the Renoir team as they expended a lot of effort in implementing the shop floor control and pass card systems, resulting in increasing the productivity on site."

Rupesh Dhadve
(Project Manager)

Key Results

60% increase in workforce productivity

Significant reduction of unnecessary movement around site and of start-up and shutdown times

Improved foreman management of their teams throughout the day

Improvement of planning and more control of the weekly plan

Better management of the distribution and repair of power tools

PROJECT GENESIS & APPROACH

Renoir was engaged by AE Arma-Elektropanç to drive an urgently needed productivity improvement for the construction site at the Hyatt Place Hotel project in Dubai, United Arab Emirates.

The ensuing rapid intervention project was undertaken by a combined team of the company's personnel and Renoir consultants with the main objective of improving direct labour productivity. The project team developed and implemented solutions focused on weekly and daily planning, control of activities and improvement of active supervision on-site. Improving site governance was included as an additional objective.

The rapid intervention commenced with the first week of ratio delays – an observational measurement technique to quickly assess productivity – as well as identifying the main issues on site. Once the productivity baseline of 40.7% was set, the combined team set about to improve from the baseline.

IMPLEMENTATION

An action plan was jointly developed and agreed by the company and Renoir. Central to the plan was regular measurements to gauge the progress in achieving the objectives; over a period of 12 weeks, the project team conducted 229 ratio delay studies with 77,863 individual observations representing 6,590 man-hours observed.

Some of the key tasks undertaken were:

- Improved project planning from the pre-existing time bound tasks to daily quantity and man hour targets.
- Improved task scoping to ensure that no job commenced without adequate preparation.
- Extensive on the job coaching and continuous shop floor productivity challenges with all front line supervision.
- Coaching of middle management in more effective root cause analysis and communication.
- Continuous observation based productivity measurements using ratio delays.
- Power tool maintenance repair and issuance improvements.

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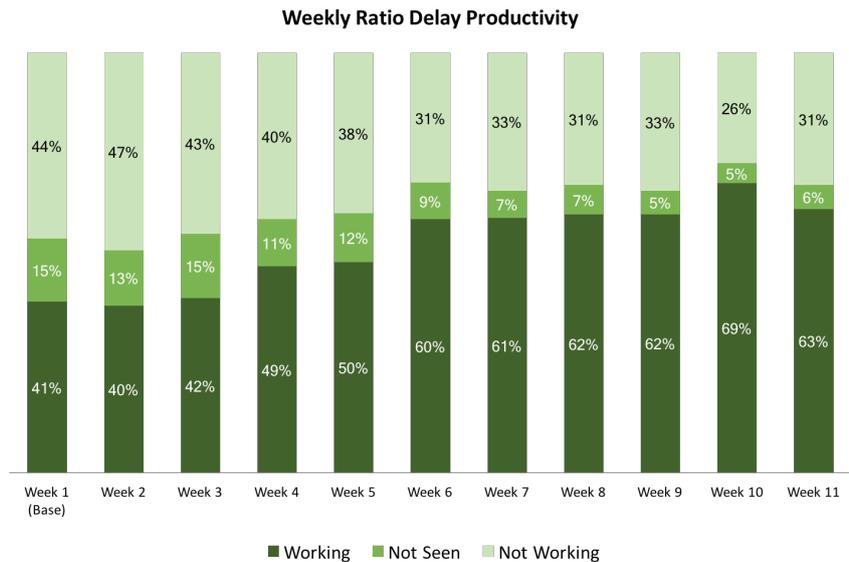
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In order to achieve the project's objectives, a set of management control system elements was also installed. These included:

- The front line foreman SMS (Shift Monitoring Sheet) to ensure that there is an adequate amount of work planned for the day.
- Significant improvements to worker movement control, site access restrictions and pass cards.
- Set up of key commodity production measurements through the SMS system.
- Daily supervisory performance reviews and weekly site wide reviews.

RESULTS

During the rapid intervention, the measured productivity improved by more than 60%:



Additionally, there was a significant improvement in the control of non-productive movement throughout the site. Since the installation of the pass card system, the number of inactive workers on-site has decreased substantially.



Prior to installation of the pass card system



Post installation of the pass card system

Planning improved with the implementation of the SMS system and the client was beginning to understand their quantities, as well as plan better for the week ahead.

The power tool audit system proved to be effective, as it was discovered that foremen were inactive due to lack of power tools as no record was kept regarding them. Since it was implemented, a large amount of power tools were repaired and distributed correctly to the foremen teams.

In summary, the project was a success and an overall productivity percentage of 60% was achieved from the initial 35% target.

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