

Reducing Cost of Penalties on Rubbish Collection



BUJ Technologies Enterprise Sdn. Bhd. started its operation in 1997 with the maiden name of Bengkel Usaha Jaya. After a decade, BUJ was registered with the Companies Commission (SSM) and in 2009 was awarded with the ISO 9001:2008 certifications. A year later, BUJ started to expand its operations in the northern part of Peninsular Malaysia in the state of Perlis. A significant event was the Environmental Quality (5S) and vehicle (lorry) launching ceremony which was officiated by the State Secretary of Pahang Darul Makmur. BUJ continued its march towards excellence and was awarded the certification of 5S on 26 February 2011 and began to spread its operation in Kelantan.

The main scope of work for BUJ is the management on solid waste disposal and cleanliness of the environment.

The company is committed in augmenting of domestic solid waste management and cleanliness of the environment. The mission is to have a conducive environment, good customer service, to educate society towards the importance in maintaining cleanliness and to have a well-skilled train knowledgeable workforce. The policy is to have an efficient cleaning service towards the community and environment.

Stages of collecting rubbish take a longer time

BUJ's aim is to provide a clean environment for the comfort and well-being of the society at large. BUJ also possesses a maintenance workshop and a warehouse to store truck vehicles. Amidst their regular job cleanliness, there are problems arising with work efficiency. Inefficiency of domestic wastes process collection such as trucks delay, customer complaints and penalties imposed from SWCorp (Solid Waste Corporation) are some of the problems that needed to be solved immediately. The collection process takes too long a time due to the many steps involved such as roll call, checking of vehicles and equipment, filling up diesel, rubbish collection, rubbish disposal, cleaning trucks and trucks storage.

LEAN collaboration to reduce wastages

To eradicate the problems, LEAN approach is introduced in BUJ. Previously, there were seven steps taken by the collection crew but by using Visual Stream Mapping, six necessary consecutive steps were done accordingly. They are the roll call, rubbish collection, rubbish disposal, washing trucks, filling up diesel and trucks storage. For these tasks, Kaizen initiatives are added to enhance their job efficiency. These Kaizen initiatives are as follows :

KAIZEN THEME	KAIZEN IMPROVEMENT
To shorten roll call time	Combine two steps into one step and enforce only 23 minutes of fixed time on roll call.
Collection of rubbish done much earlier	Diesel filling step of trucks is placed second last among the six steps.
To update the number of rubbish bins accordingly	Verification of additional rubbish bins (as new added income to BUJ) is done speedily to be sent to Alam Flora Sdn. Bhd. (AFSB). The fast delivery of Verification Order to AFSB will increase income to BUJ.
To reduce the waiting time of rubbish collection	Effective route smart system is developed to save operation time in collecting rubbish.
To reduce the waiting time of cleaning trucks	Occupying as much space as possible on the cleaning of trucks.
To reduce penalty costs	BUJ workers have to pay fines to their own company if they ever break any penalties imposed by the authority. This is to set a good example to other workers.

Analysis of LEAN project in BUJ

With the implementation of Kaizen, seven steps have been reduced to six processes. Lead time has improved to 480 minutes which is 12.53 percent saved on time. The processing time takes up 287 minutes and after LEAN, has gone down to 271 minutes, an improvement of 5.68 percent. Waiting time takes up 209 minutes instead of 261 minutes previously. Process Efficiency ratio has increased to 56.43 percent instead of 52.33 percent. No case is recorded for Notice To Correct (NTC) in spite of two cases which were recorded previously.

The number of customer complaints recorded is 15 cases and has improved to zero complaint after LEAN implementation. Penalty reduction has gone down from 81 penalties to 10 penalties. The total cost of 81 penalties amounting to RM13,000 is finally reduced to RM850. From the routing system on trucks movement, the amount of diesel used is 264.35 litres. A total of 45.07 litres of diesel is saved. In conclusion, through the implementation of LEAN and Kaizen, positive impacts have resulted in various areas of the company. The society will then be able to enjoy and live life more comfortably in the best possible way by having an effective clean environment system.



Matrix before and after LEAN project:

DESCRIPTION	BEFORE	AFTER
1. Number of processes	7	6
2. Lead time (minutes)	548	480
3. Waiting time (minutes)	261	209
4. Processing time (minutes)	287	271
5. Process Efficiency ratio (%)	52.33	56.43
6. Notice To Correct (NTC)	2	0
7. Number of customer complaints	15	0
8. Number of penalties issued by the authority	81	10
9. Cost saving on diesel (litre)	264.35	219.28

The process of rubbish collection ‘before’ LEAN implementation

