



Galantai Plastics Group, Injection Moulders and Product Designers provide custom moulding services for a large range of industries in New Zealand. Galantai specialises in moulding engineering plastics for electronic housings and offers a proprietary range of medical devices. Galantai have now completed two environmental best practice projects.

A. Factory and Warehousing Natural Lighting Alternative

Our Objective: Reduce energy costs, improve working environment through lighting quality

Cost:

Costs for implementation were minimal as they would have been borne anyway, in fact the non painting of the skylights probably reduced overall costs.

The table shows the increase in energy consumption that used to occur when the lights were turned on to light the factory during daylight hours prior to the installation of the new sky lights

Date	Time	kW
Fri 24 Dec 2004	05:30	700.00
Fri 24 Dec 2004	06:00	640.00
Fri 24 Dec 2004	06:30	970.00
Fri 24 Dec 2004	07:00	440.00
Fri 24 Dec 2004	07:30	3810.00
Fri 24 Dec 2004	08:00	8120.00
Fri 24 Dec 2004	08:30	11110.00
Fri 24 Dec 2004	09:00	13690.00
Fri 24 Dec 2004	09:30	11600.00
Fri 24 Dec 2004	10:00	10400.00

Project Description:

In December 2004 Galantai Plastics as part of its maintenance program replaced the sky lights in the warehouse and factory. The previous skylights had been painted over, creating a dark work environment that required continuous lighting. The new skylights not only save electricity but create a better work environment with the natural light source.

Project Team:

Warren Clisby - Factory Manager
Pradeep Lalwani - Factory Manager
Paul McKinnion - Maintenance Manager
Tony White - Mould Technician
Rod Galantai - Director

How we implemented the project:

The main problem was preventing that the old system was not replicated i.e. the skylights were painted before so they will be repainted now, there was also a concern that the factory would become hot if the skylights were not painted

The approach we took was to wait and see what would happen if the skylights were left unpainted and re access the project at various stages. Allow remedial action to be taken

Challenges:

There was a problem with the heat in the factory, we looked at applying a film to reduce the UV but were advised that the skylight would become milky over time reducing the effect of the heating.

Results:

- Reduced electricity consumption
- The quality of the natural light in the factory had a very positive effect on the working environment as evidenced by the staff's comments

B. Cooling Tower Efficiencies

Our Objective:

1. Reduce: Variation in cooling tower temperatures over year to +/- 3 degrees
2. Collect rain water for tanks off roof
3. Have properly designed sump to allow for environmental disposal of waste water into environment
4. Reduce Electricity consumption by having closed loop. ie temperature monitoring allows for motors to be regulated

Cost:

Savings were made with:

1. Less variation in cooling leading to:
 - a. Standard cycle times for manufacturer resulting in better machine utilization
 - b. reducing Capital expenditure
 - c. reduced Energy consumption over time
 - d. Less variation on moulding operation reducing rejects therefore waste and energy costs through less rework
2. Water Savings \$600 pa
3. Better quality water reducing tool maintenance costs \$2000-3000 pa

Project Description:

Problem was with water temperature and quality in terms of Ph and dissolved solids in the system introducing variability into the manufacturing process and causing wear to the tooling. Our approach to the problem was to try and understand how we could achieve our goals.

The biggest challenge was to try and quantify the best way to reduce the variation in water temperature over the year. We could not quantify this so we developed a staged approach to the temperature problem installing and monitoring against the set temperature parameters and then either investing more in the project or continuation of the monitoring over time based on the results

Results:

Basically we have agreed on a program to implement to address the problems and collected the costs associated with the project.

Key Challenge: Monitoring over time

The Solution: Invest in appropriate loggers and procedures to monitor system

The Future: Ongoing monitoring and assessment of energy and water consumption.

Next Challenge: Minimising solid waste. To initiate this project Galantai have already undertaken a waste audit and can now start to formulate and implement a waste minimisation plan.

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Links:

www.gplastics.co.nz



Best Practice Hints:

- Talk to people who have done this before and draw on their experience
- Stop and look at the opportunities that the change presents:
- Identify positive and negatives
- Develop a plan that allows a structured approach to assessing the actual results
- Address the issues that actually arise