



## Sustainable Business Awards for the South East 2003

# Case Study - George Gale & Co. Ltd

### Company Background

George Gale is a family owned, regional brewery, producing a number of traditional cask and keg ales. The Horndean site is North East of Portsmouth on the old A3 coach route from London. Established in 1847, the company is the only surviving independent brewing company in Hampshire. It has a portfolio of award winning beers distributed through its estate of over 100 pubs in Hampshire, Sussex, Berkshire and Surrey. It also supplies free trade outlets. The company is a major local employer with 90 full-time employees based at the brewery.

### Sustainability Initiatives

#### Key Achievements

- Electric consumption reduced by 14.6%.
- Gas/oil consumption reduced by 12.3%.
- Water consumption reduced by over 18%.
- Volume of waste going to landfill reduced by over 30%.
- Since the start of the Climate Change Levy over 15% has been saved against the Energy Efficient Quotient of 2% reduction by 2010 - equivalent to a saving of 115 tonnes of CO<sub>2</sub>.
- Program to recycle over 95% of biodegradable waste from brewing for use as animal feed. This amounts to 1400MT of spent grain/hops and over 1200m<sup>3</sup> of beer/yeast slurry with a chemical oxygen demand of 250MT.
- New Health and Safety and Environment Policies.
- Commitment to Investor in People, local community and charities.
- Supporting retained firemen.
- Reduction of CO<sub>2</sub> used in beer processing by over 25% - saving about 25MT pa.

#### Waste Management

George Gale is committed to managing environmental responsibilities as part of its business strategy. Waste management initiatives include:

- Brewing raw material and process waste is used as animal feed. This includes spent grain and hops. Ullage from returned casks is collected with recovered beer and yeast. This reduces landfill by over 1400MT for grain and hops, and the sewage system load by 250MT of chemical oxygen demand.
- Unusable pallets are recycled into woodchip.
- Office paper is recycled.
- Cardboard is recycled. This has reduced the volume of waste to landfill by over 30%.
- Suppliers are required to collect and reuse/recycle chemical drums.

The company is actively pursuing contacts to recycle its glass.



Gales Brewery



Hops added during wort boiling - later spent hops removed as animal feed

#### Energy Efficiency

George Gale has initiated utility-based projects to save energy and help achieve the Climate Change Levy (CCL) rebate. The CCL requires participant members to manage and control energy use, investigate ways to reduce consumption and to record and monitor progress. In return for this George Gale, as part of the brewing industry scheme, will receive a discount of 80% on its CCL payment.

The reduction in energy use has been significant but has not compromised quality. Initiatives include:

- Dew point control of compressed air drying to reduce energy consumption.
- Float valves to control water removal from air receivers to reduce air loss and electricity consumption.
- Replacement of float traps with GEM venturi orifice steam traps to reduce steam loss and energy use.
- Change to a more efficient air pump to reduce air needed and the electrical demand to compress air.
- Use of reverse osmosis plant to produce pure water for use as boiler feed greatly reducing the make up lowering heat loss and saving energy. This saving is achieved by reducing the volume of 'blow down' or concentrated water that is removed from the boiler to produce steam.
- Reduction in the size (10,000kg - 5,000kg) of the steam boiler to a smaller more efficient unit.
- Energy audits, a monitoring and control system, preventative maintenance and ultrasonic leak detection.
- Change from electric to gas heating.
- Replacement of the beer pasteuriser with sterile filtration cartridges reducing steam and water use and any cooling requirement by over 35%.
- More energy efficient refrigeration has been installed.

## Water

- All waste water from the reverse osmosis plant produced when making pure water for the boiler is recycled for use in the automatic cleaning system. This is over 2000m<sup>3</sup> pa and more than 50% of the cleaning water requirement. It is softened water, which reduces the amount of cleaning chemical used, so reducing water demand and effluent load.
- Water required to cool the boiled product is collected in an insulated tank and used in the next brew. This water forms over 80% of the total brewing water used.
- A well supplies a major percentage of the company's water. To increase the level of well water used, the water is pumped up at night and then softened and stored for the next day. This reduces the water purchased from the water company and optimises the use of storage facilities.
- A moving beam cask washer has reduced the water required for cask cleaning by recycling the final rinse water and by having improved reclaim collection on pre-rinse stages. This also reduces the cleaning chemical used by better liquid scavenge and recovery.

## Materials

A review of the company's procedures and processes has had the following benefits:

- Reduction in the volume of compressed air has doubled the life of air filtration cartridges to two years.
- Reduction in the amount of CO<sub>2</sub> required for beer production by 0.5MT per week giving a saving of 25%.
- Use of reverse osmosis to produce pure water has reduced the volume of chemicals needed for water treatment by over 80%. The use of pure water has reduced pipe work corrosion and replacement due to the reduction of the acidity of the condensed steam returned to the boiler feed tank via condensate pipe work.
- Use of softened water for cleaning has reduced the amount of caustic chemical by over 35%. This amounts to over 8m<sup>3</sup> less per year.
- The use of GEM steam traps has stopped the periodic replacement that was necessary with the previously used float traps.

## Social Responsibility

George Gale & Co. Ltd is a family owned company and a major employer in the area with a strong sense of community responsibility imbued in traditional values. These are clearly demonstrated by the following activities:

- There is a share save scheme for all employees. Employees are allocated shares after five years service and are given the opportunity to purchase further shares.
- Active support of several local charity events. Direct sponsorship of local charities includes Gales Youth Trust, Blendworth Centre, St John Ambulance and the Duke of Edinburgh Award.
- The company has started a commitment to Investor in People.
- There is medical and physiotherapy provision for all employees. Routine health checks are offered to the over 45s.
- Employees are encouraged to continue professional development with an annual training needs assessment - this is backed by a training budget.



Farmer collecting brewers grains for animal feed

- Health and Safety policy is actively pursued. Employees are represented on the safety committee and in the provision of safe working procedures.
- Act as an industrial mentor to local colleges and schools. Assistance is given with A levels, IT, MBA and business projects.
- Brewery Tours and Open Days are held.
- Promote the county membership of the East Hampshire Forum, the East Hampshire Tourism & Marketing Partnership, and Hampshire Ambassadors. The company is a key sponsor of the Milestones Living Museum.

## Supply Chain Management

George Gale & Co. Ltd selects suppliers on the basis that packaging can be returned for reuse.

The company sources locally where possible.

## Transport

The company is in the process of producing a transport policy. It already has:

- A route planning policy to optimise payload distribution.
- Monitoring efficiency ratios such as cost/tonne delivered, miles/drop and vehicle utilisation.
- Low sulphur diesel lorries.
- Back load delivery returns empties by single trip for reuse.
- Bunded top feed fuel and oil storage tanks to prevent contamination.

## Awards

- Energy Efficiency Winner, runner up in the Medium Sized Private Business Category - Hants & Isle of Wight Business Environment Awards.



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