May 2001

"Profit from the Environment

Presentation by Dr.W.Roger Wilson, Groundwork Birmingham.

Roger introduced his subject by explaining that the title came from the concept that savings could be made through improved resource management. The financial benefits came mainly from avoidance of legal conflicts: fines, court costs, clean-up costs. There were also benefits to be obtained nationally by minimisation of taxation through landfill, fuel tax, primary aggregates and the climate change levy. He added that managers should not run their businesses without one eye on the environment – it was good business management and there was a tangible "bottom line pay-off".

Roger then went on to explain the background to **Groundwork Birmingham** which was founded in 1981 in the wake of the Liverpool riots that gave rise to the birth of the Environment Business Services. Groundwork Birmingham is one of 44 environmental trusts across the UK and is a charity, not working for profit. It is involved with Regeneration through community and business improvement

Roger quoted a long list of 'Partners', or 'Clients' form across a wide spectrum of Government and industry, starting with the DETR, Birmingham Centre for Manufacturing, the Environment Agency, Business Link, Birmingham City Council, to Birmingham Chamber of Commerce, Rover Group, Hays Group, Pilkington Automotive, the Automotive Sector and Building Services.

Roger posed the question "Just How much is Waste costing"? It is estimated that UK businesses produce about 75 million tonnes each year. The cost is equivalent to 4.5% of the total turnover of UK businesses – in other words, a massive £45,000 for every £1,000,000 of turnover! Another side-effect of waste production is that air pollution is estimated to kill around 24,000 people each year.

Control of waste is effected via a mixture of legislation, Resource usage and Waste minimisation. Waste minimisation can be defined as the **"Systematic reduction of waste at source".** It can be achieved by examining the use of: -

- Raw Materials
- Energy
- Emissions to Air, Land and Water

The Waste Management hierarchy is, in descending order of priority: -

- Prevention
- Minimisation
- Re-use
- Recycle

- Treat
- Dispose

Roger went on to describe some demonstration projects across the UK, including one local project at Microcomponents in Curzon Street, Digbeth. It wasn't 'rocket science' – just looking at what people actually did! They found that **one machine** was used to cut **all** raw material to size and this meant that only one very wide gauge material could be used, so that there was a significant off-cut for the smaller components. By simply buying a second machine to specifically handle smaller gauge raw material, there was a significantly smaller amount of off-cuts and, hence, wastage.

On the subject of Resource Management, Roger said, the following elements are significant: -

- Systematic reduction of waste
- Managing raw materials/utilities/resource consumption.

The benefits are, obviously, Cost Savings, Compliance and Marketing opportunities in ISO 14001 statements. These all add up to a ***Competitive advantage for your Company*** which keeps you one step ahead of your rivals!

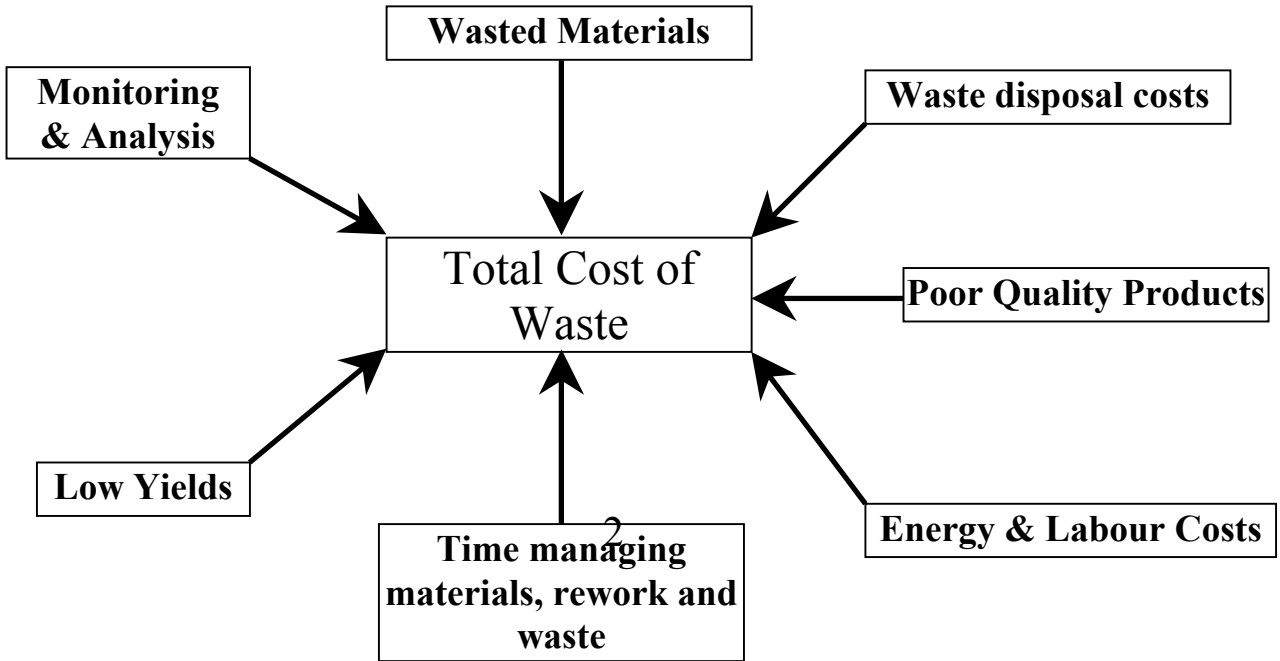
Roger went on to say that a proper appreciation of the true cost of waste would spur managers on to try harder to minimise losses. There is a common myth, he went on, that

'Waste Costs = Disposal Costs'

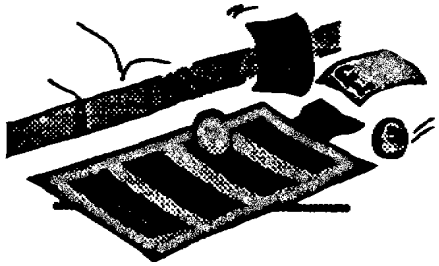
The truth was, he added, that

'Waste Costs = Up to 20 x Disposal Costs'

The reason for this excessive cost was the hidden side effects of waste in manufacturing.



The way to achieve better results is to: -



- Adopt a systematic methodology
- Draw up Process Maps or inventory tables for each process
- Track materials and wastes through the site

Once you have carried out the basics, you then need to Monitor and Target your process by: -

- Measuring what you've done
- Comparing this with what, ideally, you could have done
- Targeting for improved performance

The Groundwork Trusts have a series of initiatives to help businesses improve the Environmental Management, comprising: -

- A practical Environmental Management course
- Birmingham City Council's Eco-ordinatED initiative
- The Waste Minimisation Club for local networking
- Climate Change Levy Seminar

Other support activities are: -

- A legal update service
- Packaging Regulations compliance
- Seminars
- Auditing

Groundwork also carries out Training, both in-house and external courses. The external Practical Environmental Management Training course takes place over 6 evening sessions, is CIWEM Accredited, with EARA Accredited Environmental experts and key speakers from the Environment Agency, Birmingham City Council Pollution Unit and the Utilities.

The law on environmental issues has changed greatly over the last few years and the most recent additions cover: -

- Ozone Depleting Substances
- Emissions Trading Scheme
- End-of-Life Vehicles
- Waste Electrical and Electronic Equipment

- Pollution Prevention and Control
- The ***Climate Change Levy***

This latter legislation has profound implications for many sections of UK society and it is worth spending some time to explore its various facets. It has been stimulated by several global environmental issues such as : -

- Global Climate Change
- Deforestation
- Acid Rain
- Resource Depletion
- Ozone Layer Depletion (increased risk of Skin Cancer)
- Bio-diversity loss
- Chemical Pollution – Air, Water, Land

The likely impact on Global Climate Patterns is: -

- World wide temperatures predicted to increase by about 1.5°C to 6°C
- Sea level to rise by about 20 – 100 cms in 100years
- Increased desertification, floods, storms, snow falls, forest fires
- Increasing occurrence of disease
- Greater scarcity of potable water

The possible impact on UK has probably been noticed already (although scientific opinion is still divided) with: -

- Storms, even tornadoes
- Floods (marked effect on harvests)
- Increased frequency of so-called 'rare events'
- Air Pollution with increase in asthma sufferers.

The prime suspect in this is the burning of fossil fuels in many forms, for many reasons: -

- Oil, Gas, Coal
- To generate energy as heat, electricity or motive power
- Releases oxides of Carbon, Nitrogen and Sulphur
- Build up of Carbon Dioxide in the upper atmosphere leads to global warming.
- Sulphur Dioxide, and Trioxide leads to formation of acid rain which produces deforestation and loss of water bodies

As if this were not enough, Roger added, we are continuously deleting our resources with our hunger for energy and other natural materials. This has seen a shift in interest from **Non Renewable Resources: -**

- Coal
- Natural Gas
- Oil (Petrol, Plastics)
- Minerals

to **Renewable Resources: -**

- Hydro/wind/wavepower
- Bio fuels
- Replacement materials (timber)

Faced with the scale and severity of this problem, what are world Governments doing about it? There has been no shortage of hot air on the subject (not a good omen!) with representatives from around the world at these conferences: -

- 1972 – Stochholm Conference
- 1982 – Rio (Earth Summit) Conference
  - Climate Change
  - Agenda 21
  - Desertification
  - Convention on Biological Diversity
- 1997 – The Earth Summit + 5. New York
- 1997 – Kyoto Climate Change Convention
- 2000 – Hague Climate Change Talks (November)

This series of talks seemed to be overshadowed by the refusal of the USA (arguably the largest user of energy in the World) to adopt the resolutions in the interest of "protecting American Workers.

In addition to the necessary discussions and conferences there has been the following positive legal measures: -

- **EU Directives and Regulations**
  - Packaging Waste
  - Bathing Water Quality
  - Waste Disposal
  - Emas
  - IPPC
- **UK Legislation**
  - 1990, Environmental Protection Act
  - 1991, Water Industry/Resources Acts
  - 1995, Environment Act
  - 1997, Producer Obligations (Packaging Waste) Regulations
  - 1999, Pollution Prevention Control Act

The Climate change Programme comprises the following measures: -

- Climate Change Levy to encourage business to use energy efficiently
- Targets to double energy generation through CHP
- Increased money available for energy efficiency programmes
- Integrated transport policy
- Changes in transport taxation
- Agreements at EU level with car makers to improve fuel efficiency by 25% by 2008

The UK Reduction Targets are: -

- **CO_2** **20%** relative to 1990 by 2010
- **SO_2** **83%** "
- **NO** **56%** "
- **VOCs** **53%** "
- **NH_3** **11%** "
- **Landfill** **12%** relative to 1998 by 2005
- **Packaging** **52%** recovery by 2001

The types of environmental taxation are Landfill Tax, Fuel Duty, Aggregates Tax and **Climate Change Levy,** which is intended to be Neutral for industry as a whole but **for most manufacturing industry – *adds cost* when it comes into full force in April 2001.**

There is some assistance to alleviate the costs from the Energy Best Practice Programme and The Energy efficiency fund (Carbon Trust). There is also a 100% first year capital allowance (set against Corporation Tax) for approved energy saving investments: -

- Motors
- CHP
- Boilers
- Lighting systems
- Variable speed drives
- Refrigeration
- Pipework insulation
- Thermal Screens

Exemptions from the levy apply to

- Electricity generated from renewable resources (solar, wind, wave)
- Fuel used by good quality CHPs
- VAT registered businesses using 'domestic' amount of energy
- Domestic
- Transport
- Oils

There will be discounts for ***energy intensive*** - with 80% if agreement is reached on challenging targets for improving energy efficiency or reducing carbon emissions. Negotiations are also on-going with different trade associations.

Members' Questions

Mike Wilkinson of Marsh UK asked if there was a scale of grant available to companies according to size. **Roger** said that they were available to SMEs, which effectively meant firms of less than 250 employees and if less than 25% was owned by a larger group. Money could be obtained from the European Social fund (ESF) or the Regional Development fund (RDF) but larger firms usually obtained assistance directly from government.

Peter Hepplethwaite of Sandwell Healthcare NHS Trust asked about the availability of Matched Funds. Roger answered that under the RDF it had to be 50% but, from the ESF, the conditions were more flexible.

Dalvinder Masaun of Sandwell Healthcare NHS Trust asked where the funding was available. Roger replied that it was in deprived areas only, where there is a community regeneration scheme, matching government funding and inputs from other agencies in the form of material aid and advice and education. He added that it was a very broad definition!
Ann foster of EMAS enquired how the achievement of targets was measured. Roger explained that National Performance Measures (NPMs) were used and the units were Number of trees planted; Number of persons trained; Number of volunteer weeks input per year.

Mark Hoare of Birmingham University commented that recycled paper costs fluctuated and it was difficult to know if it was an energy efficient purchase. He went on to ask if there was any research into energy input figures for products. Roger said it was difficult to make comparisons and discussed the factor affecting waste-to-Heat plants, Life-cycle analysis for cars and the operations of Washing Machines which were notoriously energy hungry and greedy users of precious water resources!

Peter Greenwood of Timet UK commented on the Sandwell Council Website and its "Waste Matching Scheme" encouraging waste exchange on the basis that **"One man's waste is another man's raw material"** He added that low value materials were not usually transported far.

As there were no more questions the chairman thanked Roger for his thought provoking presentation and asked the members to show their appreciation.