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Anne White, our erstwhile Office Manager, has taken the long walk to freedom and a welcome rest from the onerous task of keeping everyone in SSERC organised, despite our best (worst?) efforts to do the contrary!

Anne had a two year spell as our secretary in the early 70's, spent time recovering, and returned for another valiant 22 years at the keyboard face.

Like the rest of us she experienced the doubtful delights of a vast number of

technological changes in word processing, databases and spreadsheets. From Wordwise on the BBC Micro, through "Perfect Writer" (now there's a misnomer if I've ever seen one - Ed) on the Torch and First Word Plus on the Archimedes to Microsoft Word on various generations of PC. Anne has 'been there and done that'. And the best bit is that she was always willing to adapt to the new ways of doing things with dedication and good humour, in spite of our often cack-handed methods of on-the-job training.

Anne will be greatly missed for her organisational skills and attention to detail as well as her patience and personable manner in the face of the impossible odds of keeping the "professionals" in line at SSERC!

Anne is a keen walker and may come across a wee fisherman snoozing by a loch down in the Borders. I'm sure she'd wake him up and say "We've definitely made the right move".

New legislation regarding disposal of electrical & electronic goods

Waste Electrical and Electronic Equipment Regulations (WEEE Regs) and Restriction of the Use of Certain Hazardous Substances (RoHS) (SI 2005 no 2748)

Introduction

The mountain of used computers, mobile phones, TVs, fridges and other goods containing electronic components has been growing at an alarming rate. See Appendix 1 for the different types of electrical waste. Apart from the huge bulk filling up landfill, electrical and electronic equipment (EEE) contains environmentally damaging amounts of heavy metals and polyhalogen compounds. WEEE will be classed as a special case of "Special Waste" (called "Hazardous Waste" in England and Wales) and it is illegal to place it in ordinary refuse. In order to address these problems, the EU issued two directives which were implemented into UK law in the form of the WEEE Regs and RoHS. Whereas the disposal of hazardous chemicals and substances is quite expensive for the school or business disposing of them the good news here is that in the majority of cases all or most of the cost will be borne by the manufacturer or supplier.

WEEE Regulations - the aim of these is to ensure that these waste items of electrical and electronic equipment are either disposed of safely for the environment or re-cycled. These Regulations are based on the principle of "extended producer responsibility". This is done by placing large obligations mainly on "producers" (defined as those businesses who manufacture, supply, sell Electrical and Electronic Equipment (EEE) or import it into the European Union.)

Duties placed on producers, retailers and distributors of EEE are as follows:

- (i) Ensure that products placed on the market are marked with certain info. including a crossed out wheelee bin sign indicating that it has to be collected separately. Otherwise, the product could be banned from sale.

- (ii) Take the legal responsibility for arranging and funding the collection, treatment plus recovery and environmental disposal, the re-use or re-cycling of WEEE. This they may do as individual firms or they may join a clearing house. Note that not all waste electrical equipment is subject to these Regulations; more details are given in Appendix 1.

The 13th August 2005 is an important date. If you are replacing older equipment purchased before that date with like-for-like, eg a whole set of computer stations from an ICT suite with new ones, then the producer (manufacturer, supplier or retailer) is required to take the old WEEE off your hands and dispose of them at their expense, even if you hadn't purchased the original computers from them. This seems tough on the supplier, but that is the law. It is very possible that producers' retail prices will be higher in order to cover or defray the costs of disposal. Domestic consumers will be provided with a "free take-back in-store" to enable consumers to return their WEEE when making a like-for-like purchase of new equipment."

If, in some years' time, you purchase a new set of computers to replace a set purchased after the 13th August 2005, the Regulations go a little woolly. They state that the main responsibility will again be on your supplier to finance its collection, treatment, recovery and re-cycling as before. However, they also state that you and he may negotiate alternative arrangements and that this is a commercial matter for you. Time will tell as to how this aspect develops.

For some situations it may be favourable to use commercial firms for recycling and disposal of ICT equipment rather than hand it in on a like for like basis. For

equipment that is not too old and can be recycled, one firm presently defines this as "post Pentium IV", you may be paid money for each computer. There could be a small charge for disposing of older machines, but that might be less than the hidden increase added on by producers to cover disposal costs. So the advice is to bargain. See Appendix 2 for names of some ICT equipment recycling firms.

Domestic householders can presently bring their own WEEE to many council amenity waste sites which are geared up for separate collection of WEEE. Many councils are considering enlarging these facilities so that businesses can take advantage of them in the future.

What is meant by *like-for-like*? Buying a replacement for a broken internal hard-drive with a new one is a like-for-like purchase, but replacing with a new external drive instead would not be.

These Regulations apply to the whole school and not just the science department. Indeed the Science departments will probably be only a minor contributor to the total of a school's WEEE.

Old ICT equipment may be re-used and indeed voluntary sector groups will probably continue to play a valuable role in recycling.

Data Protection Act - it should also be remembered that the school and the education authority have a responsibility to staff and anyone whose personal details are stored on the hard drive of a computer. This information must be destroyed and can be done in-house, which means you have full control over the task. Some disposal firms will give the option of providing a certificate that the data has been destroyed at a small cost. One firm waives the cost of the certificate against their receiving the computer.

RoHS - this complements the WEEE Regulations by adding further to the protection of the environment by attacking the problem at source rather than at the disposal stage. RoHS requires the amounts of hazardous materials, i.e. lead, mercury, cadmium, chromium(VI) and polybrominated biphenyl (PBB) or polybrominated biphenylether, used in the construction of electronic compo-

nents or cables to be limited to zero or to extremely low concentrations at the stage of construction. RoHS comes into force on 1st July 2006. This clearly applies to manufacturers and not to the users.

Older apparatus purchased before this date may continue to be used even if it would not be considered to be environmentally fit for sale after that date.

Furthermore you can repair such apparatus using old components and materials which would not be permitted by RoHS. It might be a good idea to hold onto your old lead tin solder for making repairs on older equipment as many of the new solders are incompatible with older materials. You are also permitted make your own non-compliant EEE in-house for your own use.

Appendix 1

WEEE is considered in 10 specific categories:

- **large household appliances** including refrigerators, freezers, stoves, microwaves;
- **small household appliances** including clocks and watches, irons, grinders;
- **IT and telecommunications equipment** including computer stations, printers, pocket and desk calculators;
- **consumer items** including radio and TV sets, hi-fi equipment, electronic keyboards;
- **lighting equipment** including sodium lamps, fluorescent (tubes and compact containing more than specified amounts of mercury), but not tungsten filament bulbs nor special fluorescent tubes used for special purposes, e.g., growth cabinets;
- **electrical & electronic tools** including drills, saws, equipment for milling, sanding, grinding, riveting, welding, soldering;
- **toys, leisure and sports equipment** e.g. electric trains, small portable body monitors used for body monitoring during exercise;
- **medical devices**; some similar ones may be used in school health studies, eg pulse and blood pressure monitors. Medical devices are exempted from the requirements of WEEE;
- **monitoring and control instruments** including smoke detectors, thermostats, "weighing appliances" as laboratory equipment;
- **automatic dispensers** e.g. biscuit and drinks machines i.e. if you haven't already taken on board Jamie Oliver's advice.

Where possible, batteries should be removed from WEEE and disposed of separately, but where they are embedded, integral and rechargeable they are treated as part of the instrument. The rules for battery disposal have been changing frequently and are likely to change again in the next two years. When the latest EU Directive is implemented in the next few years battery producers will be responsible for the uplift and recovery of the metals from at least the collection point onwards.

Appendix 2

If the task of disposal is given to a recycling firm it is the responsibility of the producer of waste (school and education authority) to ensure that the chosen firm is licensed to deal with that type of waste. It is prudent for the education authority not only to ask for a sight of the accreditation paperwork, but also to see the process happening. We know of two firms in Scotland where this has happened and of others who, although they had the paperwork, did not permit the user/producer to carry out a traceability audit. These latter firms may be satisfactory, but schools and education authorities have a responsibility to ensure that the disposal is carried out properly and legally. There have been some instances of "cowboy" firms sending the WEEE overseas to African countries or to the Far East where the dismantling and treatment has been anything but safe for both the workforce and the environment.

The four firms listed below will collect from anywhere on the mainland. Restructa, CCL(North) and MIREC also collect from the Islands. Prices given or costs asked for generally have to be negotiated and will depend on numbers, the age and quality of the machines, etc. Some firms have a charge for the uplift of £100. Usually there is no charge for the treatment and disposal of PCs and peripherals, but there is a charge for dealing with the CRTs of monitors as they are classed as Special Waste (in England now renamed *Hazardous Waste*).

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Tel 01294 311444

Fax 01294 273399

www.restructa.co.uk

(Factory)
15 -16 Arkwright Way,
North Newmoor Industrial Est.
Irvine

CCL (NORTH) Ltd
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Tel 01294 278844

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www.cellnorth.com

MHG Group Scotland,
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www.mgh-group.co.uk

MIREC Asset Management Ltd,
Irongray Industrial Park,
Lochside Industrial Estate,
Dumfries DG2 0NR

Tel 01387 723000

Fax 01387 723020

www.mirec.com

There are others based in England or Wales who will no doubt also cover Scotland. Several of these can be found from their web sites on the site for Industry Council for Electronic Equipment Recycling (ICER) – www.icer.org.uk/direct.htm

Errata in SSERC Bulletin 216 - Our apologies to *Scientific & Chemical* for a typo on page 11 of the recently published SSERC Bulletin 216 where we inadvertently headed their range of environmental meters as Scientific & (*****). Page 7, column 2 under the preparation of *Solution 2* for the *Oscillating Reaction* should read "0.4 g of manganese(II) sulphate".