



# Remanufacture & Reuse: Office Equipment



## About the Centre for Remanufacturing & Reuse

The Centre for Remanufacturing and Reuse (CRR) is funded by the Defra BREW programme and managed by Oakdene Hollins Ltd, a sustainable innovation and resource management consultancy working for both public and private sector organisations. Over the last ten years, Oakdene Hollins has carried out extensive research into remanufacturing activities in the UK.

The current CRR work programme was established to provide an in-depth examination of remanufacturing and reuse options and how they can contribute to an economy of sustainable production and consumption in the UK.

The first year of the Centre's work for BREW (2006/07) comprised a pilot programme that collected evidence as a basis for further intervention in Year 2. Over 16 product groups were examined in order to determine their remanufacturing potential and produce intervention strategies. This was backed by an industrial Stakeholder Event to test the findings and Year 2 priorities, as well as other fundamental work conducted on terminology, reuse, and decision support and policy action. The second year's work addresses the actions identified in Year 1, working with groups of remanufacturers to tackle key barriers to progress, sometimes in conjunction with other BREW delivery bodies.

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The Centre has a website dedicated to the dissemination of information on remanufacturing activity in the UK. Here, interested parties can find resources for purchasers and (re)manufacturers, read case studies, engage in the debate, join the mailing list or view the news feeds and more.

Please visit: [www.remanufacturing.org.uk](http://www.remanufacturing.org.uk)

## Additional information

Produced by the Centre for Remanufacturing and Reuse

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# Introduction

Buying remanufactured and reused products is an easy way to reduce your businesses impact on the environment. Remanufactured products typically deliver significant savings, both for the environment and for your business, compared to an equivalent product made from recycled materials, and certainly versus a new product. All this is achieved without any compromise on product quality as remanufactured products are sold with a warranty to match that of a new product.

Reused products, typically those that have been repaired, rebuilt or refurbished, also offer the opportunity to utilise products that retain their embodied material and labour value. Again, this can give significant cost savings to the purchaser of these goods and divert quality goods from landfill.

We have found that many businesses, driven by a growing requirement to operate in a sustainable and responsible manner, want to purchase remanufactured and reused products. This brochure aims to assist those looking to purchase goods from the office equipment sector by providing specifications for specific product categories and details of companies offering remanufactured or reused products and services. A directory of CRR members offering these services is also included.

## What is remanufacturing?

Remanufacturing is an industrial practice which is commonly defined as:

***"A series of manufacturing steps acting on an end-of-life part or product in order to return it to like-new or better performance, with warranty to match."***

Typically remanufacturing is applied to products that possess significant embedded material, energy and labour resources which can be recovered through suitable remediation techniques. From the perspective of the purchaser or user, the product behaves like new and is backed up by an appropriate warranty from the seller or remanufacturer.

Often remanufacturers take the opportunity to upgrade the products from old to current performance standards of energy efficiency or productivity. This is one way that remanufactured products can be differentiated from simple repair items and other end-of-life treatments.

Of all the current reuse option processes, remanufacturing alone requires the total dismantling of the product and the restoration and replacement of its major components. It concentrates on activities higher in the value chain than reuse or recycling, considering cost-effective expenditure of materials, energy and time.

The benefits of remanufacturing products include materials and energy savings, which translate into cost savings, and skilled job creation. Up to 90% savings of the original energy input can be achieved depending on the product and it is estimated that in the UK approximately 270,000 tonnes of raw materials and 800,000 tonnes of CO<sub>2</sub> were saved in 2006 by the whole UK remanufacturing sector.

Combined with the skilled jobs created, remanufacturing is therefore an activity that can have all-round sustainability benefits, as well as offering earnings potential to Original Equipment Manufacturers who adopt it alongside new product manufacture. In return purchasers of

remanufactured goods can expect to pay less than for new – typically 50-70% - without compromising quality or their environmental commitments.

## Purchasing Specifications

Part of our work at the Centre for Remanufacturing and Reuse has focused on producing a range of purchasing specifications to make high quality remanufactured products easier to identify and verify. We hope this will make the environmentally conscientious purchaser's job easier.

We are working hard to encourage the adoption of these specifications by purchasers. In the private sector we are working with Action Sustainability<sup>1</sup>, while in the public sector we are working with the Market Transformation Programme<sup>2</sup>, Regional Development Agencies and Local County Councils.

In the following sections you will find specifications for:

- Office furniture
- Workstations and servers
- Photocopiers
- Laser and inkjet printers
- Toner and printer cartridges
- LCD monitors



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<sup>1</sup> <http://www.actionsustainability.com/>

<sup>2</sup> <http://www.mtprog.com/>

## Office Furniture

### Key Environmental Impacts

- Raw material extraction
- Energy and water use in production and transportation
- Use of hazardous substances
- End of life disposal

Remanufacture, refurbishment and straight resale are all valid forms of reuse for office furniture. The durable nature of some office furniture products mean that in many cases no repair work is required to bring the item to as-new (or nearly new) condition.

Modular designs allow for future upgrades or re-purposing for use in different areas. Suppliers must be able to provide spare components for the expected life of the furniture and should operate a take-back scheme. Classic designs should be selected to avoid early obsolescence due to changes in fashion.

Indicator	Benefits
<b>Cost effectiveness</b>	<ul style="list-style-type: none"> <li>• Used or remanufactured office furniture usually costs between 30%-50% of new price.<sup>3</sup></li> </ul>
<b>Market availability</b>	<ul style="list-style-type: none"> <li>• Used furniture is readily available, either through furniture reuse networks or suppliers of bulk office furniture, who usually also supply new items.</li> </ul>
<b>Competitive market</b>	<ul style="list-style-type: none"> <li>• The furniture industry is highly competitive, with cheaper imports putting pressure on European manufacturers.</li> <li>• The remanufacturing industry is operating at a very low level, whereas reuse of high quality office furniture is popular.</li> </ul>
<b>Resource savings</b>	<ul style="list-style-type: none"> <li>• A reduction in the production of steel and aluminium offers significant CO2 savings.<sup>4</sup></li> <li>• Removing wood and natural fibre waste from going to landfill, prevents methane production.</li> </ul>
<b>Potential for increased procurement to affect the market</b>	<ul style="list-style-type: none"> <li>• As well as specifying remanufactured furniture, the environmental impact can be further reduced by opting for furniture that is well suited to reuse or re-configuration as simple reuse is the least energy intensive method of entering products into a second usage phase.</li> </ul>

<sup>3</sup> Oakdene Hollins Ltd

<sup>4</sup> Besch. K, 2004

## Workstations / Servers

### Key Environmental Impacts

- Production and transportation energy, use of hazardous substances
- In-use phase
- Disposal, particularly the impact of plastics, hazardous flame retardants and lead-based solder

Remanufactured PCs should be provided with a 12 month, or greater, guarantee and assurance that out-of-warranty support will be comparable to that for a new computer.

Suppliers should be able to demonstrate that any new components fitted to remanufactured equipment are RoHS (Restriction of use of Hazardous Substances) compliant if the original unit was put on the market after 1st July 2006.

Suppliers should operate a take-back scheme that will recover end-of-life equipment for proper dismantling and recycling, or for export to secondary markets. Suppliers should be able to prove that they adhere to a thorough process of data removal on all forms of storage media: the Data Protection Act requires that "due care" is taken in "electronic record disposal".

Indicator	Benefits
<b>Cost effectiveness</b>	<ul style="list-style-type: none"> <li>• Remanufactured computers represent a substantial saving over new equipment; as much as 95% for older models and in the region of 20% for newer equipment.<sup>5</sup></li> <li>• Many IT purchases are over-specified for the task they are required to do, and thus choosing older equipment does not mean sacrificing productivity.</li> </ul>
<b>Market availability</b>	<ul style="list-style-type: none"> <li>• Even the most recent equipment may be purchased as remanufactured stock due to either office liquidation or service returns.</li> </ul>
<b>Competitive market</b>	<ul style="list-style-type: none"> <li>• Suppliers of remanufactured computers compete with new and second-user refurbished equipment.</li> </ul>
<b>Resource savings</b>	<ul style="list-style-type: none"> <li>• The remanufacture of electronic equipment generally consumes far less material and energy than production of new.</li> <li>• Remanufacture will usually occur within the UK and so the transport energy associated with the product is reduced as it has not been shipped from the Far East (where the vast majority of production occurs).</li> <li>• Ensuring a take-back scheme is in operation guarantees correct disposal when the product finally reaches the end of its life.</li> </ul>
<b>Potential for increased procurement to affect the market</b>	<ul style="list-style-type: none"> <li>• If step changes are made in computing power or efficiency an evaluation should be made of whether it is still wise to use remanufactured equipment in the short term - until remanufacture of the new technology has developed.</li> </ul>

<sup>5</sup> Data taken from a range of suppliers

## Photocopiers

### Key Environmental Impacts

- Production and transportation energy, use of hazardous substances
- In-use phase
- Disposal, particularly the impact of plastics, hazardous flame retardants and lead-based solder

Remanufactured copiers should be provided with at least a 12 month guarantee and assurance that out-of-warranty support will be comparable to that of a new copier and that consumables will be available for at least five years.

Suppliers should be able to demonstrate that any new components fitted to remanufactured equipment are RoHS compliant if the original unit was put on the market after 1st July 2006. Suppliers should operate a take-back scheme that will recover unwanted end-of-life equipment either for proper dismantling and recycling, or for export to secondary markets.

Indicator	Benefits
<b>Cost effectiveness</b>	<ul style="list-style-type: none"> <li>• Whether buying or leasing, remanufactured copiers represent a substantial saving</li> <li>• The largest benefits are seen when purchasing more expensive, high specification models.</li> </ul>
<b>Market availability</b>	<ul style="list-style-type: none"> <li>• Typically, the larger copiers are most popular for remanufacture, although smaller models are also available.</li> <li>• Many models are available direct from the manufacturer if taken with a lease contract. Third party suppliers can usually supply older models if required.</li> </ul>
<b>Competitive market</b>	<ul style="list-style-type: none"> <li>• Due to the popularity of leasing rather than buying photocopiers, remanufacture is well established.</li> <li>• Most large original equipment manufacturers (OEMs) and many third parties offer remanufactured copiers. This ensures competition in the sector.</li> </ul>
<b>Resource savings</b>	<ul style="list-style-type: none"> <li>• The remanufacture of electronic equipment generally consumes far less material and energy than production of new.</li> <li>• Remanufacture will usually occur within the UK and so the transport energy associated with the product is reduced as it has not been shipped from the Far East (where the vast majority of production occurs).</li> <li>• Using a responsible remanufacturing agent with a take-back scheme also ensures that when the product finally reaches the end of its life, it will be disposed of correctly.</li> </ul>
<b>Potential for increased procurement to affect the market</b>	<ul style="list-style-type: none"> <li>• Remanufacture is used by many OEMs, but their main drive is still to sell new units.</li> <li>• Increased procurement could serve to shift this balance so that, like in other markets, remanufacture could become a comparable priority to selling new.</li> </ul>

## Laser or Inkjet Printers

### Key Environmental Impacts

- Production and transportation energy, use of hazardous substances
- In-use phase
- Disposal, particularly the impact of plastics, hazardous flame retardants and lead-based solder

Remanufactured printers should be provided with at least a 12 month warranty and assurance that out-of-warranty support will be comparable to that of a new printer. Consumables for the model of printer should be available for at least five years.

Suppliers should be able to demonstrate that any new components fitted to remanufactured equipment are RoHS compliant if the original unit was put on the market after 1st July 2006. Suppliers should also operate a take-back scheme that will recover unwanted end-of-life equipment either for proper dismantling and recycling, or for export to secondary markets (working equipment only) if the equipment has no market value in the UK.

Preference should be given to suppliers who offer to evaluate the needs of the entire reprographics system and recommend the most cost and energy efficient solution. This may often be the use of an MFD (multi function device) rather than a separate printer and copier etc.

Indicator	Benefits
<b>Cost effectiveness</b>	<ul style="list-style-type: none"> <li>• Savings of 25% or more are usual when purchasing a remanufactured printer.</li> <li>• If looking to lease, lower monthly payments can be negotiated for remanufactured units.</li> </ul>
<b>Market availability</b>	<ul style="list-style-type: none"> <li>• The practice of remanufacturing printers is popular with many large original equipment manufacturers (OEMs) as well as a large number of third parties.</li> <li>• Most popular models of both types are available to purchase or to lease.</li> </ul>
<b>Competitive market</b>	<ul style="list-style-type: none"> <li>• Suppliers of remanufactured printers compete with new and second-user refurbished equipment.</li> </ul>
<b>Resource savings</b>	<ul style="list-style-type: none"> <li>• The remanufacture of electronic equipment generally consumes far less material and energy than production of new.</li> <li>• Remanufacture will usually occur within the UK and so the transport energy associated with the product is reduced as it has not been shipped from the Far East (where the vast majority of production occurs).</li> <li>• Using a responsible remanufacturing agent with a take-back scheme also ensures that when the product finally reaches the end of its life, it will be disposed of correctly.</li> </ul>
<b>Potential for increased procurement to affect the market</b>	<ul style="list-style-type: none"> <li>• A move to use remanufactured rather than new equipment would significantly boost the demand for remanufacture.</li> </ul>



## Printer Toner / Ink Cartridges

### Key Environmental Impacts

- Energy and resource usage during production
- In-use phase
- End of life disposal

As there are no universally adopted standards the degree of quality may be judged by the manufacturers' warranty. Such a warranty should cover the cartridge against fault or loss of quality to the same degree as an original equipment manufacturer (OEM) cartridge. Some remanufacturers offer free emergency call out for printers using their cartridges.

For high quality EXTERNAL documents an OEM cartridge should be used, whereas internal documents should be printed using remanufactured cartridges.<sup>6</sup> Any supplier should offer a free take-back scheme for used cartridges and ensure that all returns are either remanufactured or recycled responsibly.

Indicator	Benefits
<b>Cost effectiveness</b>	<ul style="list-style-type: none"> <li>• Remanufactured cartridges are priced extremely competitively, in general at around 50-75% of new OEM cost. Wandsworth Borough Council estimated that they could save £40,000 a year by switching to remanufactured toner cartridges for internal printing.<sup>7</sup></li> </ul>
<b>Market availability</b>	<ul style="list-style-type: none"> <li>• There are well established routes to market and supplies of core in this rapidly growing market, and extra capacity is emerging as remanufactured cartridges gain popularity.</li> </ul>
<b>Competitive market</b>	<ul style="list-style-type: none"> <li>• The popularity of remanufactured toner and inkjet cartridges has meant that a thriving market of third party and OEM operations has emerged.</li> </ul>
<b>Resource savings</b>	<ul style="list-style-type: none"> <li>• The embodied energy of the cartridge husk is preserved rather than being lost to recycling or landfill.</li> <li>• The only available LCA (life cycle analysis) is inconclusive, but it does indicate that there are possible energy benefits from cartridge remanufacture. It also highlights the importance of the usage phase, where pages wasted due to poor quality cartridges can significantly affect the environmental impact of printing.<sup>8</sup></li> </ul>
<b>Potential for increased procurement to affect the market</b>	<ul style="list-style-type: none"> <li>• By showing confidence in remanufactured cartridges, public procurement could dispel corporate customers' fears regarding printer reliability and print quality.</li> </ul>

<sup>6</sup> Study carried out by Bureau Veritas (2004): most remanufactured cartridges were as good, if not better, than the OEM equivalent though a few showed a very slight deviation from the expected characteristics.

<sup>7</sup> London ReMaDe, Dec 2006

<sup>8</sup> First Environment, funded by Hewlett-Packard, 2004

## LCD Monitors

### Key Environmental Impacts

- Production and transportation energy, use of hazardous substances
- In-use phase
- Disposal, particularly the impact of plastics, hazardous flame retardants and lead-based solder

Remanufactured LCD monitors should be provided with a 12 month guarantee and assurance that out of warranty support will be comparable to that of a new monitor. Suppliers should be able to demonstrate that any new components fitted to remanufactured equipment are RoHS compliant if the original unit was put on the market after 1st July 2006.

Suppliers should operate a take-back scheme that will recover unwanted end-of-life equipment either for proper dismantling and recycling, or for export to secondary markets (working equipment only) if the equipment has no market value in the UK.

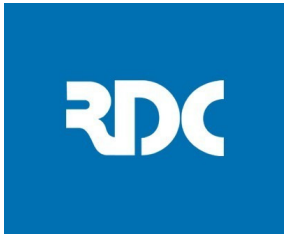
Indicator	Benefits
<b>Cost effectiveness</b>	<ul style="list-style-type: none"> <li>• Remanufactured monitors can represent a substantial saving over new. The actual saving will depend on the supplier and the model, but in general larger, more expensive monitors will give more substantial savings over new.</li> </ul>
<b>Market availability</b>	<ul style="list-style-type: none"> <li>• There are firms who specialise in supplying remanufactured office electronics such as LCD monitors in bulk and to order. They are able to tailor packages to individual specifications and provide excellent backup.</li> </ul>
<b>Competitive market</b>	<ul style="list-style-type: none"> <li>• The falling price of new LCD screens has meant that remanufacturers have found it hard to compete at the cheaper end of the market. However there are a number of third parties who will remanufacture monitors, sometimes acting as a service agent for an OEM.</li> </ul>
<b>Resource savings</b>	<ul style="list-style-type: none"> <li>• The remanufacture of electronic equipment generally consumes far less material than production of new.</li> <li>• LCD monitors in particular contain indium, a rare earth metal that is highly energy intensive to produce.</li> <li>• Typically, only a handful of components will require replacing. Monitors with more serious faults will be used as a source of spare parts.<sup>9</sup></li> <li>• Remanufacture will usually occur within the UK so the transport energy associated with the product is reduced. Using a responsible remanufacturing agent with a take-back scheme also ensures that when the product finally reaches the end of its life, it will be disposed of correctly.</li> </ul>
<b>Potential for increased procurement to affect the market</b>	<ul style="list-style-type: none"> <li>• Increased demand for such units would increase the turnover and profit of the remanufacturing industry.</li> <li>• The extra profitability will enable more advanced remediation and recycling technologies to be developed, thus more discarded units will be reused, or those that cannot will be recycled in a more efficient manner.</li> </ul>

<sup>9</sup> Oakdene Hollins, 2006

## Company Profiles

This section contains profiles of companies offering remanufactured and reused products, and supplementary services, in the office equipment sector all of which are members of the **Centre for Remanufacturing and Reuse**.

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RDC are Europe's leading computer reuse and recycling specialists operating in the UK, Germany and France with a process capability of over 100,000 items a month. Selling to more than 6,000 trade customers in over 40 countries, RDC manage zero landfill of IT waste with a mass balance of material recovered and partner global computer business companies including IBM, BT and Microsoft.

RDC's flexible and innovative IT asset management services model involves:

- recovering used IT equipment from customer premises
- refurbishing equipment in defined processes
- remarketing used IT equipment to generate revenue
- redeploying equipment to former users to save money over buying new
- relational database purpose designed item level traceability
- reclamation of parts and components
- recycling of unsafe or obsolete equipment by licensed specialists
- charitable donations and staff sales management
- waste management licensed sites and WEEE AATF permit
- RDC were awarded the Queens Award for Enterprise for Innovation in 2002.

RDC's processes assure quality to ISO 9001, environmental management to ISO 14001 and safety to OHSAS 18001. RDC are independently certified by the accredited British Standards Institution. RDC has upgraded security at our Witham headquarters site, screens staff and is currently approved by HM Government Security Services to handle computers bearing data classified up to secret.

The company began in 1991 with three people auctioning used computers. This developed until by the mid-1990s RDC had an innovative asset management service that addressed customer risks such as:

- environmental damage from poor disposal of computers containing hazardous materials.
- release of confidential data
- electrical equipment safety.

RDC is owned by Computacenter, the UK's largest independent supplier of desktop computers to business, who acquired the company in July 1999. RDC operate as an autonomous, wholly owned subsidiary and provide IT asset management services to Computacenter customers and rivals as well.

## UK Cartridge Remanufacturers Association

The aim of the UK Cartridge Manufacturers Association (UKCRA) is to provide printer users with high quality products, through its members, that are cost-effective, environmentally friendly, re-useable alternatives to original branded printer cartridges.

UKCRA is the only cartridge remanufacturing association in the UK that actively supports its members in their efforts to offer the highest standards of professional ethics in the industry and to offer printer users a high quality alternative printer cartridge to the imported original.



The key objectives of the organisation are:

- to set and administer quality assurance standards and to continue to search for the means to improve cartridge remanufacturing and customer service practices
- to increase market awareness and promote the use of remanufactured products
- to provide a forum for exchange of technical and market information between members
- to institute and support positive legislative and other measures in the interest of cartridge users
- Members conform to the environmental recycling code, all relevant local waste disposal regulations, labelling and packaging standards and have a bona fide warranty system in place

**Look out for the UKCRA Quality Mark on remanufactured cartridges.**



Afic is one of the largest independent re-manufacturers of office products in Europe, and has three decades of experience in all areas connected with the print industry. Their remanufactured cartridges, branded The Image Masters®, are guaranteed to provide a level of print quality that is identical to that provided by their OEM equivalent.

When remanufacturing their cartridges only the plastic base unit of a once-used cartridge is used, all other components are replaced new. The result is a product that is of a much reduced cost, with all new critical parts, the diversion of approximately 1.5 kgs of plastic from landfill.

The company uniquely holds five Quality and Environmental awards; ISO9001, ISO9002, ISO14001, Nordic Swan and German Blue Angel. Afic is the only re-manufacturer chosen by ESPO (Eastern Shires Purchasing Organisation) and has recently been included in the new Public Sector Sustainable Products Catalogue.



## Kleen Strike (UK) Ltd

Kleen Strike (UK) Ltd has been offering a remanufacturing service since 1983. They first started with typewriter and printer ribbon cassettes and, as technology advanced and quality components became available, expanded this to include toner and inkjet cartridges in their portfolio of remanufactured products.

Looking back over the years, Laura Heywood Director of Kleen Strike remembers "the early years in printing technology when there were no laser printers and just a handful of inkjet printers that used only solid ink technology." She goes on to add "We were an environmental company 25 years ago when it was not in fashion to be one. There was no advantage for companies to be 'green.' There were no environmental standards or accreditations. When we tried to encourage the

environmental advantages of our service, companies were more interested in just cost savings. We're happy that each has taken on equal importance now."

Kleen Strike is ISO 9001 accredited, were awarded Remanufacturer of the Year by The Recycler and hold the Code of Conduct certificate endorsed by the European Toner and Inkjet Remanufacturers Association (ETIRA). As such, there are few companies as highly qualified and that have been so actively involved in reducing the carbon footprint of customers – by up to 40% - just by offering their own brand printer cartridges as well as up to 65% savings in price over the original.

A high standard of product has always been important at Kleen Strike. "Honesty, fair prices and advice always make a good impression" states Alistair Barker, Director and General Manager. "The first thing your customer sees or speaks to is you - and first impressions last - which is why we attend trade shows for the latest product and industry information, visit suppliers, attend technology seminars as well as environmental and industry workshops in order to give our customers the best advice."

## LASERCARE ANGLIA

Lasercare Anglia supply both original and remanufactured inkjet and laser toner cartridges for every application. In addition to this they offer additional services to their customers including cleaning, servicing and repair of laser printers, copiers and fax machines. A written guarantee is supplied with remanufactured products to reassure customers that they are as good as branded originals.

Principle customers include schools, institutions, small and large businesses and to ensure goods arrive in the same condition that they leave the premises, Lasercare deliver 95% of orders themselves and only use a carrier when necessary. Arrangements are also in place with customers to collect empty cartridges when replacements are delivered. Not only are the cartridges reused, they also reuse the packaging.

Lasercare not only market their business on price against branded originals, but also on the environmental benefits of using their remanufactured cartridges.



*think smart...recycle & save*

Founded in Scotland in 2000, Edinburgh-based Smart Cartridge is the UK's second largest retail cartridge refilling franchise, with a national network of 60 retail outlets encompassing the UK, Ireland, Spain, Portugal and the Dominican Republic.

The Smart Cartridge concept is simple and is best summed up in their company slogan: Save Money; Save the Planet. Instead of throwing away used cartridges, they are refilled in-store and reused by customers, saving home and business users up to 60% of the price of a buying a brand new cartridge. This also reduces the number of cartridges sent to landfill sites each year. Inks and components specific to the cartridge are used and all of the remanufactured cartridges come with a 100% money-back guarantee.

At present there are many challenges facing the industry: the proliferation of new printers by the OEM, use of technology to control functionality (chipped cartridges) and intellectual property law suits to name but a few. Smart Cartridge is utilising its knowledge and experience to help face these challenges and ensure the continuation of a quality choice for consumers on the high street. Their mission is to continue to grow in the UK and overseas markets, thus continuing to increase awareness of the alternative to using new cartridges every time and help end users to manage their printer cartridge waste more responsibly.

Smart Cartridge also sells remanufactured printers offering cost savings of up to 50% compared to purchasing new printers. These come with a full 12 month warranty and passes through strict quality control tests before resale.



The FRN is the national networking body for around 400 charitable organisations involved in the collection, refurbishment and re-use of domestic and commercial items. This includes household items (furniture, domestic appliances, TVs etc) and

commercial items such as IT equipment and office furniture.

The FRN has a social enterprise arm, FRN Enterprises, which undertakes national contracts for WEEE. Co-ordinating a network of Designated Collection Facilities (DCFs) and Approved Authorised Treatment Facilities (AATFs) the FRN are able to provide evidence notes for Producer Compliance Schemes. The FRN also works with retailers and manufacturers of furniture to remove and re-use furniture and electrical appliances that are no longer required.



Replacing toner cartridges can be expensive, and damaging to the environment. Braintree based Green Cartridges Limited is successfully changing all that, helping businesses to save money, and the planet.

Green Cartridges remanufactures your own laser toner cartridges. The company will collect the cartridges, test them, replace any necessary components and refill them with the correct toner formulation needed for each printer – with the quality matching that of the original. They then return the same cartridges to the original user.

The firm was only set up three years ago, but is already setting new national

standards. Co-owner Abbe Coulton comments, "We're using a method of remanufacturing cartridges, which has been developed and proven in America. We can ensure all cartridges are remanufactured to the same high quality, with each one tested before being sent back to individual clients. What's even better is that the process does not invalidate printer warranties."

Green Cartridges is a customer driven organisation with an emphasis on service. It is through listening to our customers that Green Office Print Solutions has evolved.

Green Office Print Solutions is a bespoke all-in-one office print service which includes supply of printers, consumables, service and maintenance in one simple monthly payment.

The benefits include:

- managed reduced costs
- less printer downtime
- simplified stock control
- hassle free



Re-Work Community Interest Company sells quality refurbished and recycled office furniture, which is particularly attractive to small organisations or businesses that find themselves on a budget but still want to buy furniture to last. Re-Work formed in September 2007 this year, and is based in Leeds, West Yorkshire.

Working in partnership with Green-Works, who provide the furniture ready to sell, the business has been built up from a small base with a view to receiving collections from large businesses across Yorkshire in 2 to 3 years time.

Re-Work has a specific social ethic, based around diverting office furniture away from landfill and creating working opportunities for people who may have been overlooked in the workplace due to age or educational standards. A Social Enterprise, its focus is not on making shareholders rich, it is ensuring that the money that is made creates more employment opportunities and builds the business into a leader in the recycled office furniture world.



## **Sudden Impact**

At Sudden Impact, the main focus of the business is the repair, refurbishment, re-sale and servicing of office printing equipment.

Its engineers have a combined printer repair experience of over 50 years and the company prides itself on being Hewlett Packard Laserjet repair specialists. It also offers a comprehensive Fuser and Maintenance Kit refurbishment, supply and exchange service for a wide variety of printers.

A dedicated printer repair specialist since 1994, Sudden Impact has since built up a skills base that is second to none. This enables it to cover almost all makes of printer including Hewlett Packard, Epson, Canon, Brother, Lexmark, Kyocera and many more. Rather than operate through expensive annual maintenance contracts it offers a service that allows you to pay for your repairs as and when you need to. In addition, its printer repair charges are "no fix, no fee" so there is no risk to the customer.

Sudden Impact also offers a service exchange programme which means that you can have a replacement printer, fuser or maintenance kit by 9am the next working day to minimise disruption and downtime.

Following the introduction of the WEEE directive, where producers, importers and manufacturers are obliged to offer a "take-back" scheme for Waste Electrical and Electronic Equipment, Sudden Impact registered as a Waste Carrier with the Environment Agency. This allows it to take its customers' broken or unwanted equipment for re-use or recycling, free of charge.

Fundamentally, Sudden Impact aims to make use of a printer for as long as possible. It offers printers either as an outright sale, or as short or long term rental. Even when a printer has been out on rental, on return it receives a full refurbishment in the workshop (replacement of any worn parts and rollers, strip down and thorough clean, replacement of external covers if necessary). It can then be put back in stock to be sold as a refurbished printer, at a small percentage of the new purchase price.





Spruce Carpets is Scotland's first carpet recycling organisation. Set up in February 2005, Spruce is a social enterprise based in the greater Glasgow area, accepting and uplifting carpets in good condition from domestic sources. In 2006 Spruce diversified into carpet tiles, allowing it to provide a product and fitting service to commercial customers.

Both products are processed at the Govan warehouse, where they are sorted, cleaned, trimmed and repackaged ready for resale. The flooring is sold from the Govan shop as well as through five retail partners. By redeeming the otherwise waste item back to a viable product, the environmental effects are twofold. Waste is being diverted from landfill (important, as estimates are that carpet takes up to 40 years to degrade fully) and resources are conserved from the manufacture of a new product. As a community business, however, Spruce is also dedicated to promoting social benefits.

Spruce's aims are:

- to preserve and conserve the natural environment by diverting resources to landfill.
- to create meaningful volunteer opportunities and training placements, for people excluded from society or the job market, in warehousing, customer service and carpet fitting
- to assist homeless people resettle into accommodation and sustain their tenancies.

Over the last three years, Spruce has grown and become a leading expert in carpet reuse and recycling, inspiring and advising other projects to be set up as well as contributing to the growing social economy. Spruce employs 11 local people, engages with over 60 volunteers and 15 trainees a year and diverts over 70 tonnes of waste per annum from landfill.

Spruce is now being lead by Izzie Johnston who continues to see the interest in environmentally sound products and socially responsible business grow. "Not only is this encouraging but really supports and defines the future of Spruce as a social enterprise. The opportunities we have provided local people through training or resettling is investing in a deprived community on a long term basis, having a long term effect. People are making positive life choices which in turn creates a more sustainable future for Govan and Glasgow."

## Directory

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### Re-work Office Furniture

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