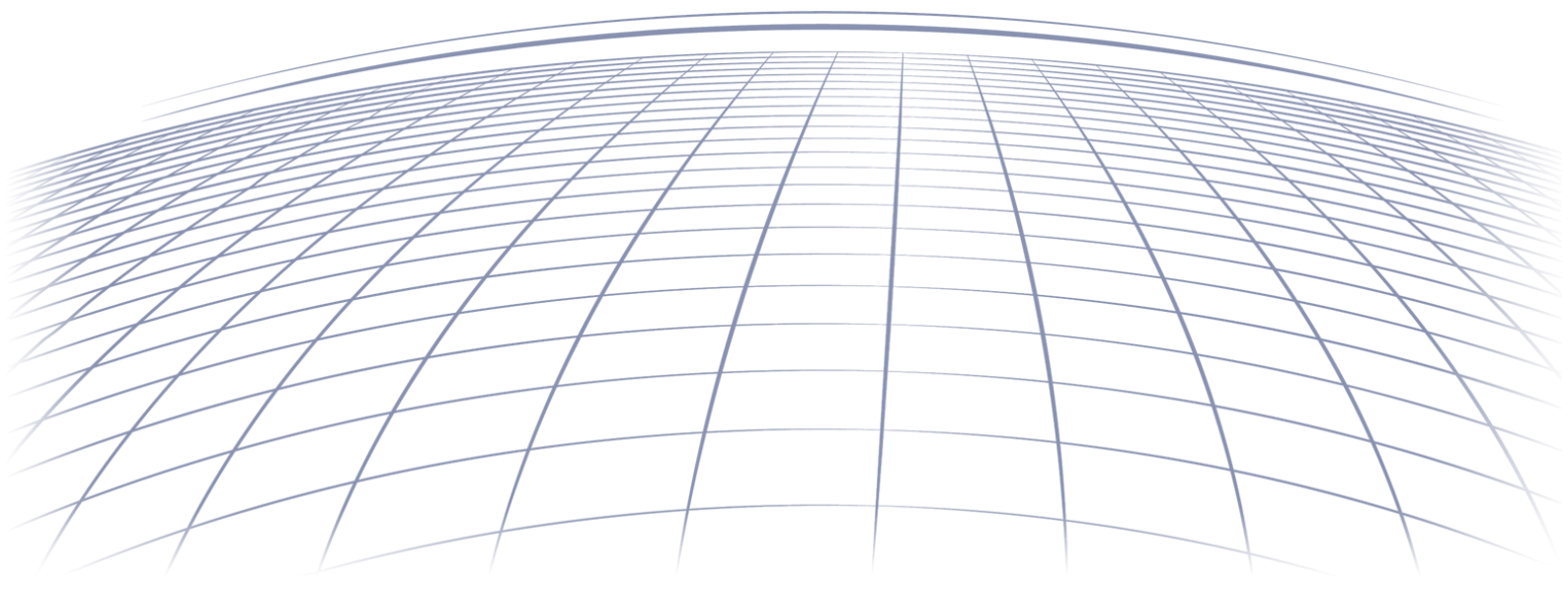


Ark Waste Strategy

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Registered and Head office: Spring Park, Westwells Road, Hawthorn, Corsham, Wiltshire, SN13 9GB

Ark Waste Strategy

1 Purpose

This strategy sets out how Ark will achieve its vision of becoming a zero waste to landfill business, putting waste prevention, reuse and recycling at the forefront of our relationship with resources we use.

The strategy provides a direction for Ark to manage its material resources more effectively by thinking of waste as a resource, with the aim of achieving increased efficiency, cost savings, lower environmental impact and positive carbon reductions.

The aim is to reduce the unnecessary use of raw materials, encourage reuse of materials and products, and reduce waste to landfill through recycling, composting or energy recovery.

To achieve zero to landfill we must understand our present process and impact, as well as our future impacts.

2 Context

Ark has a number of staff involved in the design, build and operation of datacentres, it is not a large producer of waste, but it does create waste that results in a number of waste streams. The management of waste is a responsibility within the campus operations team, the campus team is responsible for the management of all Ark waste streams by procuring, managing and monitoring contracts for general waste and recycling streams, and for high risk or hazardous streams (e.g. hazardous waste, waste electrical and electronic equipment (WEEE), etc).

3 Scope

The scope of this Strategy is based on operational control targets apply to all Ark managed waste on our campus and construction locations.

The technical operations team (including Ark, CBRE, Bidvest and suppliers acting on their behalf) manage all waste from across the campus. As the campus team manages the contracts for cleaning and landscaping, this is included in the Strategy targets for the campus.

The Ark Construction Team manage all waste created as a part of construction operations.

4 Objectives and Targets

The Ark approach to waste is an area of the business which staff, contractors and wider stakeholders are increasingly involved in, Ark can leverage their supply chains and operations.

Ark develops and promotes practical initiatives and is a zero to landfill business for all operational non-hazardous waste.

Robust, flexible and acceptable targets are required that suit Ark's changing business needs and performance.

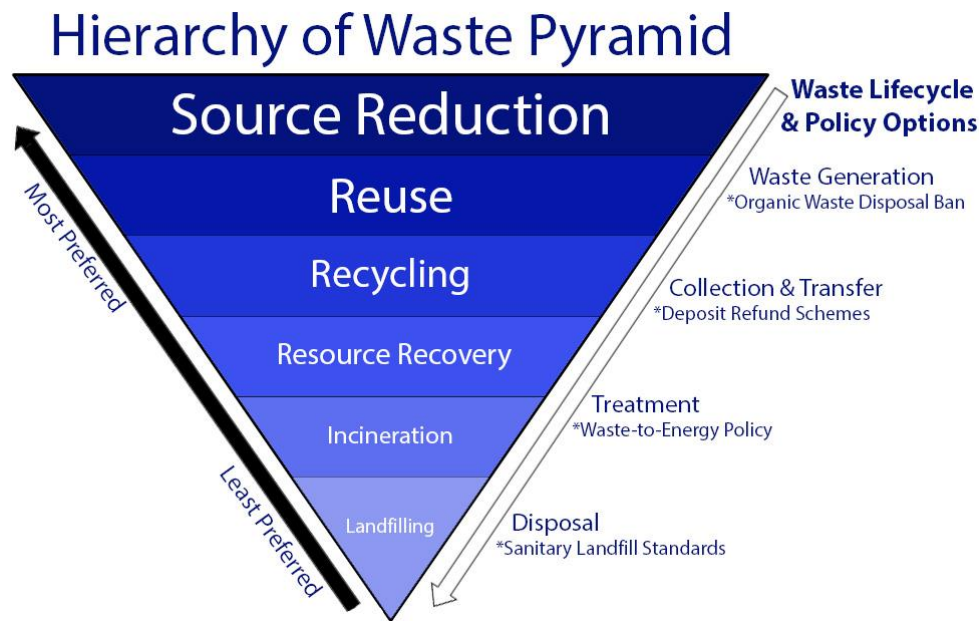
Our strategic targets are outlined below.

Waste Reduction
Actively engage with our clients and supply chain to seek ways reducing or avoiding waste in the first instance either as part of procurement or fit out.
Reuse
Reuse furniture and equipment resulting from office moves and refurbishments where ever possible.
Recycling and composting
Increase the percent of recycling from current waste to energy rates year on year whilst maintaining our zero to landfill for non hazardous waste target.
Maintain landscaping recycling/composting rate of 100%.
Improve recycling rate of wood waste onsite in the form of chippings for paths and walkways across campus.
Landfill diversion (non hazardous)
Maintain 100 percentage diverted from landfill.
Sustainable procurement
Support improvement and innovation in supply chain waste to contribute to business and UK economic ambitions.
Sustainable estate development
Promote resource efficiency via the effective management and reduction of construction waste with targets specified, monitored and reported in project and site specific management plans. This would be tracked and managed on an individual project basis.

5 Waste Hierarchy

Ark has a commitment to follow the waste hierarchy and implement initiatives that encourage waste producers to reduce the overall waste that they produce, and prevent waste production wherever possible.

The waste hierarchy ranks waste management options according to the best environmental outcome taking into consideration the lifecycle of the material i.e. the principal of treatment of waste in the following order: prevention, preparing for reuse, recycling, other recovery and disposal.



Source reduction or avoidance, is procurement of goods or services with the aim of not creating the waste at source.

Reuse, using less hazardous materials, checking, cleaning, refurbishing, repairing whole items or spare parts.

Recycling, where possible all materials are removed from site by waste management contractors that have recycling targets aligned to Ark.

Resource recovery, turning waste into a new substance or product (includes composting). Anaerobic digestion.

Incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat and power) and materials from waste.

Landfill and incineration without energy recovery.

6 Sustainable Procurement

Ark's sustainable procurement goal is to procure goods and services in ways that maximise efficiency and effectiveness while minimising social, environmental and other risks as outlined within our Procurement Policy (5029-A-Procurement Policy).

When procuring goods or Services, or using other Ark contracted suppliers, staff can be confident that environmental and social issues have been taken into account.

Consideration is given to social responsibility and sustainability and whole life costs when selecting suppliers and awarding contracts.

Ark has embedded environmental, economic and social sustainability activities as key considerations within our procurement activities.

These robust measures help Ark to meet its sustainability commitments and fulfil the sustainable procurement duty.

7 Sustainable Campus Development

An extensive programme of new buildings and campus improvements is planned for Ark over the coming years, therefore it is imperative to embed sustainability in the design process and practice.

The construction of new Ark buildings and refurbishment of our existing estate are important contributors to sustainability.

Key objectives are BREEAM Very Good as a minimum (site conditions permitting), and predictable whole life costing.

The current version states that all BREEAM waste credits must be achieved in terms of construction waste (percentage of construction site waste diverted from landfill, reduction of construction and demolition waste to landfill).

Consultation represents the most important aspect of project delivery and a project delivery collaboration, communication and consultation schedule should be implemented for every project.

The Design and Construction process aligns with the current RIBA stage structure as incorporated in the new build project delivery process map, and the campus management team is consulted at various stages from concept design through to fit out.

Sustainable development design principles are incorporated into all projects from conception through to construction and operation.

Tender documents and contracts embed these through unambiguously worded requirements and project management will ensure the designs are delivered through all stages of projects, with commissioning demonstrating compliance against performance targets.

Contractors should develop a site waste management plan on any project before construction work begins which would include the following:

- A description of each waste type expected to be produced in the course of the project;
- An estimate of the quantity of each different waste type expected to be produced;
- Identification of the waste management action proposed for each different waste type, including reusing, recycling, recovery and disposal.

8 Monitoring and Review

Ark Waste Strategy

Ark will manage the delivery of the waste strategy to ensure it remains current and relevant with the local, national and European context, to ensure compliance with legal & regulatory requirements as well as government policy & guidance.

Ark requires all staff, service providers and anyone else making use of Ark premises to comply with this strategy.

Reporting will be to the Technical Operations and Facilities Teams (via key suppliers) with input from the Ark Construction team along with key contractors.

The ISO14001 Management review consists of staff from around the business including campus operations, commercial and compliance and key contractors.

The Waste Strategy will be reviewed annually as a minimum or in the event of any significant change to ensure ongoing suitability and in line with standard document control activities.

9 Waste Production at Ark

9.1 General Waste

General waste simply refers to everything that cannot be disposed of via a separate recycle channel. It's our aim reduce the amount of waste disposed of into General Waste to as little as we can. Not only to reduce the amount, but to save costs in handling and disposal.

How is it collected?

General waste is collected from the kitchen areas and desk side bins in all buildings by the cleaning teams, it is transferred in black plastic sacks to rolling cage trollies in the building loading bays, the trollies are collected by the waste operative every day, the trollies are used to transport the waste to the skips on site, the skips are collected by a waste disposal company as required.

Where does it go?

Normally General Waste will be sent to landfill and that's really what we would like to avoid.

In our case we use a waste disposal company that sorts and recycles as much of our waste as is possible, in some cases depending on availability landfill can be avoided by sending General Waste to a Refuse Derived Fuel (RDF) facility. Here the waste is compressed and baled and then sent to a further location to be incinerated. Electricity is generated from the heat created.

How much does it cost?

General waste is the most expensive way for our business to dispose of its rubbish. Landfill Tax increases each year and rises in line with inflation as a minimum.

9.2 Cardboard

Cardboard is one of the most common forms of packaging around, it's not uncommon for us (Ark, CBRE or Clients) to produce considerable volumes of it. As cardboard is made from pulp, and pulp is made from trees, it makes sense to recycle as much as we can. Also the process of recycling cardboard compared with creating it anew is much easier and more efficient too.

How is it collected?

Depending on the volume of cardboard our business creates, cardboard is collected in different forms. Small volumes are bundled and deposited in a roll cage trollies and placed in the general waste skips, medium sized volumes might be collected into a project specific Front End Loader (FEL) larger volumes are loaded into large open skips provided.

Where does it go?

Collected and taken to a waste transfer station, baled and then transported in bulk to paper mills. The cardboard is mulched and this is then used to make new cardboard products.

How much does it cost?

Cardboard is a valuable resource, its price fluctuates throughout the year.

9.3 Food Waste

Food waste at Ark remains at a low level and is disposed of as a part of the general waste stream.

How is it collected?

Collected by the cleaning teams from the kitchen and office bins.

Where does it go?

Currently this follows the same path as general waste.

However, long term we would like food waste to be segregated and recycled using a process called anaerobic digestion; a series of processes in which microorganisms break down biodegradable material in the absence of oxygen. It is used for industrial or domestic purposes to manage waste and/or to release energy.

How much does it cost?

Food Waste is currently on the cusp of becoming commercially viable when compared to General Waste collections. That said the UK is currently considering legislation for food waste which will incentivise businesses into making a change.

9.4 Glass

There are very low levels of glass waste produced at Ark, glass recycling has been common place since the 1970's saving millions of tons of glass from being landfilled every year.

Due to it's structure, glass does not deteriorate when reprocessed meaning 100% of the waste can be reclaimed. Recycling glass not only reduces the demand on raw materials but also requires less energy than creating it anew.

How is it collected?

Glass is most commonly collected in bins as part of the daily black bag waste scheduled collection.

Where does it go?

Glass is sorted at the recycling plant into the three main colours clear, green and brown. Each is then separately cleaned and screened before being sent on to a glass factory where it is smelted and reshaped into new glass products. In the UK, we have a surplus of green bottles used for wine so these are exported to other nations for use again.

How much does it cost?

Recycling glass will not presently affect our spend on general waste due to its weight and size. It is very low volumes and is cheap to recycle in comparison to a general waste collection.

9.5 Dry Mixed Recycling

Dry recyclables is the modern description of waste that is free from contaminants such as construction, food or garden waste, leaving clean materials such as paper, cardboard, plastic bottles, drinks cans and glass bottles to be sorted and recycled. All sorted materials are sent to approved re-processors in the UK for recycling into fresh new and recycled products.

How is it collected?

Mixed recycling is common throughout the campus and collections are carried out on a daily basis, the cage trollies and skips are dedicated to the collection of dry mixed recycling waste.

Where does it go?

Once it's been collected Mixed Recycling is taken to a Materials Recovery Facility (MRF) where it is separated, either by hand or by machine. Each stream is then independently taken for recycling.

How much does it cost?

Due to the value, and weight of the contents of a Dry Mixed Recycling collection and the ever increasing Landfill Tax expected costs are 20% - 50% lower than that of a respective sized

general waste collection. When combined with a decent internal segregation system serious annual savings can be made.

9.6 Plastic

From UPVC components through to drinks containers and furniture, we will recycle our plastic waste in the most cost effective and environmentally sound way, presently due to the low levels of plastic coming from site this is via the dry mixed recycling process.

How is it collected?

Plastic can be collected in different forms. At Ark all plastic is placed in the mixed dry recycling waste stream for sorting off site.

Where does it go?

Plastics are the most complicated item to recycle due to the complex way they are made, and the variety of plastics used in the UK.

Plastic recycling plants take all forms of plastics and usually recycle them into other items. Plastics are sorted by their resin type prior to recycling and then shredded at the recycling plant.

These shredded fragments then undergo processes to eliminate impurities like paper labels. This material is melted and often extruded into the form of pellets which are then used to manufacture other products.

How much does it cost?

Some plastic recycling can make money for business, while on a smaller scale it will simply help reduce your landfill tax.

Each plastic recycling project is priced individually dependent on the business type, material and market prices.

9.7 Paper

Single paper sheets, magazines and newspapers can all be recycled. Today, 90% of paper pulp is made of wood and paper production accounts for about 35% of felled trees. It has been estimated that recycling half the world's paper would avoid the harvesting of 20 million acres of forestland. This is a big motivation to make sure we recycle this material in bigger and bigger proportions.

How is it collected?

A large percentage of paper produced at Ark is recycled through the shred it agreement.

Where does it go?

Recycled paper is taken to a paper mill, de-inked, pulped and then turned into new paper products including toilet roll, newspapers and tissues.

How much does it cost?

Paper is one of the most common industrial waste items and recycling can substantially reduce the amount of general waste disposal required by Ark. Any large scale paper recycling could actually make money, and this should be assessed on an individual basis.

9.8 Hazardous Substances

Hazardous substances can be created by the activities required to maintain and operate the data center campus, Oil from generators, batteries from UPS, Glycol from chillers and greenhouse gases from the chillers for example.

How is it collected?

Most of the hazardous substances are collect by expert contractors employed to carry out the maintenance activity, as a part of the contract they will collect and store the hazardous substance prior to correctly removing and disposing of the substance.

Where does it go?

Substances are removed from site by the contractors, the substance is taken to the approved disposal point as a part of the maintenance contract.

How much does it cost?

The substances can be very expensive to handle, store and dispose of, the costs are embedded in the service contracts.

9.9 Wood

All types of waste wood including off-cuts, defective timber, pallets, chipboard and basically all the wood is placed in the building general waste skip.

How is it collected?

Wood collections are most likely to be done as one off's in either a skip, RORO container or where available, via the waste operative under a wait and load service.

Where does it go?

Wood recycling process and usage is dependent on the original state of the wood. Solid pieces of wood or 'clean' wood is chipped and can then be manufactured into MDF or chip board. Manufactured or 'dirty' wood is not reusable in this way, however can be turned into mulch

or sawdust for animal bedding or landscaping, occasionally the opportunity exists for on site wood chipping, this is then re used on site to provide wood chip paths and recreational areas.

How much does it cost?

In the majority of cases it makes sense to segregate wood from other waste streams as it makes disposal cheaper.

Generally waste wood is categorised into two standards. "Dirty" meaning the wood will be presented with potential contamination such as nails, screws or paint and "Clean" where no such contamination should occur.

The latter is cheaper to dispose of.

9.10 Confidential Waste

The confidential paper waste created at Ark is disposed of through a third party secure waste disposal company Shred-it, the service includes:

- Secure locked bin consoles in our offices;
- Regular collections by security screened, uniformed staff;
- Shredding at the local secure facility;
- A secure chain of custody during waste recycling;
- A certificate of destruction;
- Recycling by approved partners, reducing the carbon footprint of Ark.

Modern paper shredding services provide a cheap and efficient way for Ark to destroy either large or consistent volumes of confidential paper waste. All services are documented and audited to ensure peace of mind.

How is it collected?

All confidential waste units are locked and fully secure, ensuring that, once deposited, waste documents cannot be retrieved from the system. Scheduled collections are made on a daily, weekly, fortnightly or monthly basis depending on the demand.

Where does it go?

100% of the paper collected from confidential shredding is baled and then recycled.

How much does it cost?

The confidential paper waste at Ark is collected from the Shred-it bins, this waste is removed from site by Shred-it under a monthly collections contract.

Appendix 1 Legislation

Ark has a legal obligation and a duty of care, to be able to demonstrate that it knows how its waste is being created, managed and disposed of.

Waste movements are tracked through waste transfer notes (non-hazardous waste) and consignment notes (hazardous waste) these ensure that all waste is managed responsibly from where it is produced to the authorised recovery or disposal facility.

Extensive waste management legislation exists at UK and European level. In addition, various technical documents produced by the UK Government and/or the Regulator, must to be adhered to and captured within Ark's legal register.

Relevant legal and regulatory requirements are captured within Arks Combined Legal Register (5126-R-Combined Legal Register) and monitored on an ongoing basis.

Appendix 2 Standards Expected

Ark requires all staff, contractors, Service Providers and anyone else making use of Ark premises to comply with this Strategy.

In particular, it is expected that all members of the Ark, contractors and service providers will adhere to the following standards:

Waste should be prevented or minimised wherever possible. If produced, opportunities for repair, composting and reuse should be enabled when appropriate, and only then should recycling or energy recovery be considered.

Waste must be stored, carried, processed, treated or disposed of in accordance with the principles of Duty of Care.

Waste must be securely stored in compliant and suitable containers and locations pending uplift.

In particular:

- The fabric and construction of the container must be resistant to the nature of the waste (e.g. corrosive, sharps, etc.) and suitable for the storage environment.
- The container will be securely sealed to prevent accidental spillage/leakage.
- Adequate security precautions should be taken to prevent loss, theft, vandalism, or unauthorised access.
- Segregation of waste should take place to prevent mixing of incompatible materials and to allow for recycling.

Waste collections should not prevent safe access or egress of people.

Ark Waste Strategy

Waste should not be stored in any area within the Data Centres, near to heat or ignition sources, or hinder access to equipment.

Waste removed from Ark premises must only be transported by persons or service providers who are licensed to do so and subsequently treated, processed or disposed of in suitably authorised and approved facilities.

Any discharge to sewer from Ark premises that may present a substantially greater risk than domestic sewage must have the prior agreement of the statutory responsible bodies via the Commercial & Compliance team.

Where it is shown that this strategy has not been adhered to, (potentially) resulting in Ark legally vulnerable or its reputation being adversely affected, Ark will take such steps as may be necessary to bring the situation back into compliance as soon as possible.