APPENDIX A

For Publication

Environmental Impact Report

Meeting:	Chesterfield and District Joint Crematorium Committee
Date:	23 September 2019
Report by:	Bereavement Services Manager

1.0 Purpose of Report

1.1 To inform Members of the environmental impact of the Operation of the Crematorium and the current regard for environmental issues.

1.2 To promote and facilitate the provision of cremation services with due regard to the environmental impact.

1.3 Encourage service options that reduce the risk of harm to our environment.

2.0 Background

2.1 In June 2019, the UK became the first major economy in the world to pass laws to end its contribution to global warming by 2050. The target will bring all greenhouse gas emissions to net zero by 2050. Net zero means any emissions would be balanced by schemes to offset an equivalent amount of greenhouse gas from the atmosphere such as planting trees or using technology like carbon capture and storage.

2.2 A motion was agreed at Chesterfield Borough Council's Full Council Meeting on 17 July 2019 to declare a climate emergency in the Borough.

2.3 A Climate Motion was submitted to North East Derbyshire District Council, to be debated on 8th July 2019.

2.4 A Climate Emergency Motion was sent to Bolsover District Council to be debated on 17th July 2019.

2.0 Carbon Footprint

2.1 The Manager has registered with the Carbon Footprint Ltd (https://www.carbonfootprint.com/aboutus.html) website and has had conversations with the Managing Director and Co-Founder, Mr John Buckley, to seek assistance in calculating the Crematorium's Carbon Footprint calculated against the energy consumed over a 12 month period.

The results of the calculation were that the Crematorium's Carbon Footprint was the equivalent of ***317.17 tonnes of CO2e***.

A summary of the CO2 produced along with the energy used over 12 months at the Crematorium can be found below;

		Cost	CO2e
Electricity	115,377 kWh	£17,471.61	31.99 tonnes
Gas	1,537,036 kWh	£36,724.77	282.58 tonnes
Fuel (Grounds Maintenance Vehicles)	1000L	£784.00	2.59 tonnes
Total		£54,980.38	317.16 tonnes

To put this into some context, the Crematorium's Carbon Footprint is equivalent to the following;

Equivalent Carbon Footprint of 83 average cars per annum (source www.quora.com - 3.8 tonnes CO2e per car per annum)

18,726 Miles Flown by a Boeing 737-400 (Source www.quora.com – 17.2kg per mile)

149 average UK households per annum (source World Energy Council – average UK household 2.12 tC02)

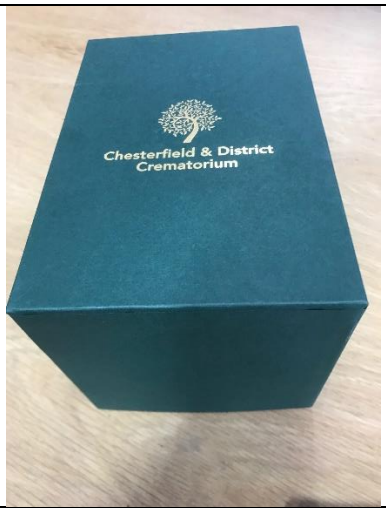
3.0 Current Regard for the Environment

Reduction of Plastic 2019 From Onwards

We are all increasingly aware of the harm to the environment from plastic because it is non-biodegradable often harming our rivers, ponds oceans and wildlife.

For decades the standard container in which cremated remains were collected from the Crematorium was a Polytainer - a plastic urn within a box. Often the Funeral Director would offer a range of urn or caskets to the bereaved at their premises after collection.

Until this year, 1500-2000 polytainers were purchased each year, manufactured in Asia and transported overseas before UK distribution by Funerial Suppliers. In December 2018, local Funeral Directors were surveyed on their preference and overwhelmingly supported a move towards a bio-degradable, UK made container. Feedback from Funeral Directors is that the bio-degradable urn is a more dignified and suitable container with a gold leaf emblem and higher quality, sturdy surround.

Pre 2019	2019 Onwards
	

Reduction of Chemical Spraying/Pesticides

In March 2013, a plan was devised to reduce the amount of chemical use by grounds maintenance operations after pledging in its Management Plan to minimise the use of herbicides and chemicals.

To put the results of this pledge into context, 2009 spraying records show 6100ml of Round Up Liquid Weed Control used. In 2018, 1635ml were used. The reduction is primarily down to the decision to stop spraying rose beds and weed by hand. The results are not only beneficial to the environment, but the condition and standard of roses has increased tremendously.

Other chemicals have either been banned or ceased to be ordered including Casaron G Weed Control, Rose Clear Insecticide, Spearhead Weed Control.

Other areas which were historically sprayed are now also maintained by hand including seat bases, tree bases and site furniture.

Although spraying continues, it is now primarily focused on the driveways, paths and building perimeters. The correct spraying nozzles are used and the weed killer is mixed carefully to manufacturers guidance, according to the Risk Assessments to prevent overuse.

Natural Energy - Solar

Members approved a recommendation in the Manager's report dated 27 27 June 2011 for the installation of photo voltaic panels on the roof of both the office and Crematory at a cost of approximately £50,000 for 60 panels (20 on the office and 40 on the crematory). At that time, the Manager's Report estimated carbon savings over the life of the panels to be around 33 tonnes.

Over 12 months in 2018/2019, the energy generated and returned to the national grid was the equivalent of 11904 kWh generating a total net income of £3,806.80.

Heat Re-use and Recycle

In 2015, heating boiler plant was replaced and a new system incorporated along with a heat exchange plate. In summary, heat generated through the cremation process heats up the plate, which in turn, heats water within the storage tank that is then circulated around the buildings. Whilst the cremators are in operation, zero gas is taken from the grid to heat buildings, rather, waste heat from the Cremators heats office, crematory, chapel, grounds and waiting building areas.

Cremation Emissions and Filtration

In 2005, DEFRA introduced a requirement for the cremation industry as a whole to remove mercury from 50% of cremations by 2012. Along with the 50% target, the principle of "burden sharing" was introduced, a process whereby Operators who could install abatement plant do so, and the cost is shared with those could not install such abatement equipment. Defra recognised this as the most equitable way of achieving the target, whilst the cost or "burden" is shared by the entire sector.

In 2012, Chesterfield and District Crematoria saw the installation of Filtration Abatement Equipment designed to reduce harmful emissions to the environment.

Each year since 2012, the Crematorium has attained a Pollution Prevention and Mercury Abatement Certificate which details the number of abated cremations and the number we are able to contribute to the burden scheme, administered by CAMEO (Crematoria Abatement of Mercury Emissions Organisation). The clean cremations are then purchased by crematoria without abatement thus sharing the financial burden of installation.

The Crematoria is regulated by the Local Authority Environmental Health Officer in accordance with the Pollution Prevention and Control Act and DEFRA Process Guidance Notes 5/2 for Crematoria.

Emissions to the environment are continuously monitored with excursions immediately investigated and addressed.

Since installation of Filtration Equipment in 2012, emissions of Hydrogen Chloride, Particulate, Carbon Monoxide and Organic Compounds have dramatically fallen. Gone are the days when visual emissions could be seen from the stack.

Each year the Crematorium is obliged under its permit to arrange annual independent stack emissions test measuring all emissions to the atmosphere. The last test in 2018 saw results well within the permitted parameters.

The Crematorium regulations restrict the use of materials harmful to the environment and for each cremation taking place, the Funeral Director will declare that the coffin and its contents meet these regulations. The Crematorium accepts eco coffins including cardboard, leaf and shroud cremations.

Recycling

The Crematorium has the following Recycling Schemes in place;

Metals; The recycling of metals from cremation, with the consent of the bereaved is undertaken as part of a scheme administered by the Institute of Cremation and Cemetery Management (ICCM). Orthopaedic implants and metals from the construction of the coffin are the majority of metals recovered. The surplus generated from this scheme is then distributed to Bereavement related charities throughout the UK.

Plastics; The Crematorium has an annual collection of plastics with Agriplass (Recycling) including a return scheme for used plastic urns (provided they have been completely emptied and suitably cleaned), plastic flower pots and plastic tubs for delivery of carbon filter additive.

Paper and Cardboard; Paper and cardboard is collected as part of a Chesterfield Borough Council.

Green Waste; No green waste leaves site. The retention of timber cuts in habitat piles is encouraged around the grounds. Timber that is chipped is used as mulch. Grass cuttings are left at strategic places around the headland of the Crematorium.

Biodiversity and Habitat

Maintenance regimes have been developed within the grounds to provide for a range of use. Differential mowing regimes have been put in place to encourage a diversity of flora and fauna with the Crematorium.

A woodland walk has been developed to provide a more natural area for the strewing of cremated remains.

The Crematoriums Wildlife Policy is attached at Appendix 1.

3.0 Future Considerations

It is recommended that the following actions are approved to continue to reduce the risk of harm to our environment over the next 12 months.

Action	Reason	Date	Officer(s)
Investigate the potential to switch to HVO Fuel as a replacement for 1000L Diesel per annum	Reduce greenhouse emissions by up to 90% against diesel. Renewable, sustainable, carbon offset. Drop in Replacement for Diesel and Gas Oil	2019	RF DC SR
Investigate the possibility of submission of Cremation Forms Electronically	Reduce journeys by Funeral Directors to deliver paperwork. Encouraged within amendments to Cremation Regulations.	2019	RF GB
Promote and encourage the reduction of plastics in floral tributes.	ICCM Policy and Good Practice. Plastic wrappers in eco system and damage to wildlife. Reduce plastic to landfill.	2020	RF DC
Increase headland and reduce mowing	Increase wildlife habitat	2020	RF RP

regime to create habitat by 200m2			
Investigate and recommend participation in Carbon offsetting schemes.	Crematorium becomes carbon neutral.	2020	RF
Investigate the need to promote and encourage car sharing for mourners.	Reduce greenhouse emmissions. Must be promoted in a dignified and sensitive manner. Increase car parking availability at the Crematorium.	2020	RF
Continue to keep updated on latest Cremation Technologies.	To recommend environmentally friendly alternatives when the replacement of cremation equipment is next undertaken.	Ongoing	RF

4.0 **Recommendations**

4.1 That the report be noted.

4.2 Approve actions suggested at 3.0 with a further report presented to the Committee in 2020 following investigations.

5.0 **Reasons for Recommendations**

5.1 That Members are aware of the Environmental Impact of the Crematorium, current awareness and good practice and ensure that the Crematorium continues to seek options that reduce the risk of harm to environment over the next 12 months.

ROSS FAWBERT
BEREAVEMENT SERVICES MANAGER

Appendix 1

Wildlife Policy

Statement of Aims

The Chesterfield and District Crematorium will seek to protect and enhancing the quality of the local environment and support the concept of a sustainable Chesterfield. The Crematorium will ensure that environmental priorities are fully integrated into all its functions and will:

(a) take all reasonable steps to prevent cruelty to wild animals;
(b) seek to conserve protected wildlife species and habitats;
(c) manage existing wildlife habitats, create new ones, and encourage others to do the same;
(d) work with nature conservation organisations to monitor and maintain records of wildlife in the Crematorium grounds;
(e) encourage public access to and enjoyment of the Crematorium grounds; and
(f) protect and enhance the open space, waters, trees and hedges under its control to meet the aims and objectives of 'A Greenprint for Chesterfield'.

Priorities for Action

Trees and Woodland

All broad-leaved trees and woodland are valuable for wildlife, but some types are particularly important. Although the Crematorium has no ancient or secondary semi-natural woodland, it does have a small area of planted wet woodland, which provides a useful habitat. This will be designated as an informal wildlife conservation area. Individual trees within the Crematorium grounds are also a valuable resource, providing some of the benefits of woodland in an urban setting. It is important that these trees are recognised for their conservation value and protected from mismanagement and loss.

The Crematorium will address the need for management of this resource, to maximise its wildlife and landscape potential, by the development of an arboricultural management programme. This will support the Wet Woodland Habitat Action Plan for Lowland Derbyshire, published in 2003. Special attention will be given to preserving dead wood, which is vital for many invertebrates, fungi, ferns and lichens.

Bats

Bats have been chosen as a Flagship Species in Chesterfield because they require specific actions over and above those for the habitats in which they are found. Their numbers have declined significantly in the UK over the last century. They require good roosting and overwintering sites such as hollow trees and old buildings, and insect-rich feeding sites such as flowery meadows, wetland and open water. Bat boxes have been installed in the Crematorium grounds in an effort to increase the number of available roosting areas and enhance the numbers of the bats in the neighbourhood. In addition, the Crematorium will minimise use of wildlife "unfriendly" herbicides and chemicals and increase the area of open water within the grounds to provide additional feeding sites.

Ivy

Ivy is a climbing, scrambling plant abundant as a groundcover shrub in the understorey of much rural woodland. It has a variety of conservation benefits and causes no direct damage to trees. Where ivy has grown high into the crown, it may affect tree stability. The natural balance of the crown, stem and roots may be adversely

affected by dense ivy growth and the tree may be liable to blow over in high winds, particularly when accompanied by rain or snow. Where such trees are near public footpaths or roads, we may remove ivy in the interests of public safety. Ivy may also be removed where it is detrimental to the visual aims of the planting.

Ivy does, however, provide a valuable habitat for insects and nesting birds and its berries provide food for birds, particularly during the winter months, when other food is scarce. It is also an important source of early and late nectar for insects.

Butterflies

Butterflies face constant threat from contemporary farming and forestry practices and from creeping urbanisation. Seven out of ten British butterfly species are in decline. The management of grassland habitats will be particularly important for the survival of the butterfly in Chesterfield. The Crematorium has relaxed its mowing regimes on amenity grassland around the grounds by leaving uncut margins around the perimeter boundary of the site. This will enable the main larval foodplants to flourish in sunny sheltered positions.

Our Bulb Remembrance Scheme will be amended to enable families to contribute to the purchase bulbs of local provenance.

Lowland Birds

Numbers of many once-common lowland birds have declined over the last 25 years to the extent that several species are protected. The song thrush, house sparrow, tree sparrow, linnet and grey partridge are all listed on the red list of birds of conservation concern in the UK. To improve the prospects for lowland birds, the Crematorium will work to maintain and enhance its stock of hedgerows, increase the density of tree cover in the Crematorium grounds, and has begun a programme of placing bird boxes in appropriate habitats.
Organisation

Our work to protect and enhance the prospects for wildlife around the Crematorium will proceed in co-operation with relevant organisations that share our aspirations. In particular, we will be working with the Royal Society for the Protection of Birds and the Derbyshire Wildlife Trust to develop a conservation management plan for the site.

In addition, we will seek to be represented on the Environmental Theme Group of CHART, the Local Strategic Partnership, which has the responsibility of taking forward the aims of Local Agenda 21 in the area.