

Report to: Environment Committee, 18th July 2023

Report of: Corporate Director – Operations, Homes and Communities

Subject: BEREAVEMENT SERVICES FACILITIES REVIEW

1. Recommendation

That the Committee:

- 1.1 Notes the contents of the report and, in particular, the 'CDS Feasibility Review of Cremator Replacement at Astwood Crematorium' at Appendix 1;**
- 1.2 Approves preferred Option B as set out within the report and delegates authority to the Corporate Director (Operations, Homes & Communities) in consultation with Chair and Vice Chair to procure and appoint design and development consultants to develop detailed and fully costed designs for approval;**
- 1.3 Recommends to Council a capital budget allocation of £250,000 to complete the work referred to in recommendation 1.2; and**
- 1.4 Notes that as a major capital project, further updates and requests for approvals will be presented to Policy and Resources Committee.**

2. Background

- 2.1 At its meeting of March 2023 this Committee received an [UPDATE REPORT](#) setting out the need for development of Astwood Crematorium and a summary of appraisal work that had been carried out for the Council to better understand its options for how it could continue to provide a crematorium facility into the future.
- 2.2 The current cremators at Astwood Crematorium are approaching the end of their life and require replacing and, in addition, there is a high likelihood of new statutory environmental targets being applied to existing crematoria by a set date, likely to be during 2027/28.
- 2.3 With a limited development footprint available at Astwood, due to the chapel and crematorium being immediately surrounded by consecrated ground or access roads, a risk had been highlighted that replacing the existing 3 cremators, and needing to include all the required environmental abatement would not be achievable.
- 2.4 Initial appraisal work considered establishing a new crematorium facility elsewhere and explored several potential sites near the city. Clearly a number of significant planning considerations would apply to any new site. Initial advice provided by the Council's Planning Service confirmed that any such application would need to meet a sequential series of tests to justify why a move away from a site that already benefits from planning permission for crematoria is required.

- 2.5 In addition, it was clear that the costs of acquiring a new site and attempting to secure a planning consent would represent a major challenge to delivering a new set of cremators to benefit the city of Worcester, within an acceptable timeframe and budget.
- 2.6 As a result, it was necessary to undertake further appraisal work for remaining at Astwood. At the March meeting, Committee approved an allocation of £100,000 funding to enable further technical feasibility work to be undertaken to investigate whether continued use of Astwood for cremations is feasible. The funding was drawn from the Cremator Reserve – a revenue fund established to support repair and replacement of the cremators in due course.
- 2.7 Following this meeting, further work was undertaken to investigate the feasibility of operating with two cremators at Astwood, instead of the three the Council has historically operated with. Specialist consultants CDS were appointed to undertake this work as an extension of the feasibility studies that they had undertaken.
- 2.8 Modern cremators include additional abatement technology and so a critical consideration was whether three new cremators could be accommodated within the available developable footprint without undermining customer experience (i.e. reduced chapel size) or staff welfare (reduced office or rest facilities for staff).
- 2.9 This work has clarified that there are relatively local sites operated by District Councils that are undertaking between 1900 – 2000 cremations per year on two cremators compared to the 1600 on average that Astwood undertakes via its three cremators.
- 2.10 Having interrogated staff shift patterns and resource levels and factored in the additional business that could be generated, Council officers and CDS are confident that as part of any redesign plans, the service can efficiently operate with two cremators and not three. This will apply to both electric and gas cremators.
- 2.11 Given this positive position, CDS have been able to develop three potential options (Options A – C) for redesign at Astwood, and this report brings Members up to date with this further work and seeks approval to proceed with moving to detailed design work on a preferred option.

3. The Cremation Act 1902

- 3.1 As part of the work to investigate the options available to the Council for continuing to provide a crematorium, the Council must pay attention to The Cremation Act 1902.
- 3.2 This Act sets out that *'No crematorium shall be constructed nearer to any dwelling-house than two hundred yards, except with the consent, in writing of the owner, lessee and occupier of such house, nor within fifty yards of any public highway, nor in the consecrated part of the burial ground of any burial authority'*.
- 3.3 The Council has obtained Counsel's advice on the implications of this legislation in respect of any improvements that the Council wishes to make to its operations at Astwood. The legal advice provides a clear mandate for making improvements to the existing buildings, but not constructing a wholly new facility within the site. The options for redevelopment set out below are all considered by Counsel to be compliant with the legislation.

Available Options

Option A

- 3.4 Option A was developed as a low-risk internal refurbishment option only, given initial concerns about the potential implications of The Cremation Act 1902. However, Counsel's advice has indicated that more extensive redesign and refurbishment work would be permissible.
- 3.5 Although there is no change to the existing building footprint with this option, it has included a potential 60m² first floor extension within the cremator hall to create a mezzanine floor that would accommodate a third cremator if required by the Council at some stage in the future.
- 3.6 Option A is primarily focussed on internal refurbishment that aims to improve the public facing front-of-house experience of visitors. This would include a larger and more directly accessible public reception that Council staff do not have to traverse to gain access to the cremator hall. It would also include re-orientation of the existing chapel so that it provides a nice aspect out on to the Garden of Remembrance. Although this option would include the volume of the chapel decreasing, it would still be able to hold up to 108 visitors which is the current maximum number the chapel can accommodate.
- 3.7 Externally there is intended to be no re-cladding of the existing building facades, except where existing walls are to be infilled.
- 3.8 This option aims to improve the public facing front of house experience for visitors including a larger and more directly accessible reception area which will prevent staff from having to travel through reception to access the cremator hall.
- 3.9 In addition, there are added benefits for funeral directors and staff mainly in the form of increased rest and welfare space which is very limited at present.

Option B

- 3.10 Option B offers enhanced internal refurbishment accommodated by means of a proposed extension up to 25% of the existing building footprint.
- 3.11 A 34m² single storey extension is proposed to the south façade which would allow for the inclusion of a changes places facility just ahead of the chapel lobby, and an increased storage or AV/CCTV room.
- 3.12 The staff office would also be increased over and above that of Option A and would widen the office, which due to its current width creates both storage and circulation issues. It would also be better linked to the AV/CCTV room.
- 3.13 The cremator hall and mezzanine floor layout would remain the same as Option A, as would the chapel positioning.
- 3.14 Option B does include the partial re-cladding of the existing building facades, in addition to roof reconfiguration. The intention would be to devise the roof to be two faceted volumes to add prominence to the front of house functions of the building including reception and chapel.

- 3.15 A new porte cochere canopy would be built at the front of the building to increase cover for visitors and, along with the southern façade extension, this would require some alterations to road layout. Further discussions have been had in respect of road alterations from both a design and cost point of view.
- 3.16 Finally, Option B would involve the existing chimney being moved and replaced with a reduced height stylised form, to coincide with the architectural forms of the chapel.

Option C

- 3.17 Option C offers internal refurbishment, alongside a proposed extension up to 25% of the existing building footprint as well as extensive or full external recladding of the existing building.
- 3.18 The significant addition to the proposal is a 95m² single storey extension to the north façade with outward development in line with the existing remembrance room. Improvements in respect of separation and flow can be accommodated via this option whilst preserving all existing road layouts.
- 3.19 This option would enable the chapel lobby to lead directly onto the chapel meaning that there is direct linear transfer of a casket from a hearse into the chapel and would also result in a funeral cortege accessing chapel from the rear and not perpendicular to the altar as in Options A & B. Additional space within the lobby is also created, to support the existing port cochere.
- 3.20 In this option, the family room is extended in size and can now be accessed off the porte cochere, whilst the office space has been extended considerably, allowing for storage, printing and small welfare area for tea making etc.
- 3.21 The office and reception area would be relocated to the existing ramped chapel exit route, so the office has an improved outlook towards garden of remembrance. A generous lobby with toilet block would take up the existing garden of remembrance room to provide adequate accessible provision for visitors and staff. The cremator hall would be separated from the chapel by a significant air lock unlike Options A or B.

4. Cremator Type

- 4.1 At present Astwood Crematorium is served by three second-generation gas cremators that were installed as part of a replacement project in 1998. Developments in crematoria technology have led to fourth-generation gas cremators now being in use alongside second-generation electric generators. In the next few months third-generation electric cremators will be available.
- 4.2 The current gas cremators at Astwood have not been retrofitted with Mercury Abatement and instead the Council meets its legal duties in respect of mercury emissions via an offsetting arrangement (CAMEO Scheme) with Cardiff Council. In 2027, the CAMEO Scheme will come to an end and all Crematoria (new or existing) will be required to have mercury abatement in place. Fuel source will not have any impact on mercury abatement.

- 4.3 The other pollutant of note connected with cremations is Nitrogen Oxides (NO_x). Gas cremators produce significantly more NO_x than electric cremators, given that NO_x is produced through combustion of fossil fuels. Selective catalytic reduction (DeNO_x) can be applied to both gas and electric cremators.
- 4.4 With significant developments being made in respect of electric cremators and the Council having made ambitious carbon reduction commitments within its Environmental Sustainability Strategy and Action Plan, a decision is required on the type of cremator to move forward with.
- 4.5 It should be noted that at present there is no current technology available to reduce Carbon Dioxide (CO₂) emissions from gas cremators. Operating with electric cremators through a green energy tariff would significantly (if not totally) reduce CO₂ emissions from the cremation process.
- 4.6 Gas cremators are still used by over 95% of crematoriums in the UK, primarily fuelled by natural gas. Gas cremations require a continuous supply of gas throughout a cremation, with highest consumption required at the start of each day to reach their operating temperature.
- 4.7 The first green electric cremators were installed in 2020, first at North Oxfordshire Crematorium and Memorial Park, followed by Huntingdon Crematorium. The electric cremators operate by way of a 'hot insert', meaning that it takes longer to reach operating temperature but can retain its temperature far more efficiently through sustained activity.
- 4.8 Green gas tariffs are at a very early stage of development, although some suppliers do offer such a supply provided through the generation of bio-methane (bio-gas). The price of green gas is approximately 16% higher than that of natural gas, with the Council's current energy supplier confirming the increase as 37%, which would lead to an annual increase of £70,000 in energy costs.
- 4.9 Green electricity tariffs are significantly more developed and even though they cost more than purchasing traditional 'on grid' electricity, the cost per green electric cremation would be 13.5 % cheaper than that of an 'on-grid' gas cremation.
- 4.10 The table below, sets out a comparison of operating costs between gas, on-grid electric and green electric. The operational cost of electric cremators, whether standard or using 'green' energy, are less than the operating costs of gas cremators.

However, there are higher capital costs.

Cremator Type	Cremations per day (4 in machine A & 3 in machine B)	Gas usage per cremation (kWh)	Electricity usage per cremation (inc. rest) (kWh)	CO2 per cremation (exc body and coffin) kg	Cost per cremation	Installation Costs for 2 machines inc abatement	Maintenance costs per annum	Operational costs (cost to cremate 1700)
Gas	7	524	36	105	£44	£1,075,000	£45,000	£74,800
Electric Grid supplied	7	0	15	24	£32	£1,600,000	£45,000	£54,500
Electric Green supplied	7	0	15	0	£38	£1,600,000	£45,000	£64,600

- 4.11 An electric cremator currently costs around £300,000 more than a gas cremator. In addition, converting to electric cremators at Astwood would require an upgrade to the existing incoming electrical supply to accommodate the increased load required to power the cremators. This would cost up to an additional £329,000.
- 4.12 The cost of installing electric cremators will therefore increase the capital costs of each option by around £930,000 in total. The revenue impact of this being around £70,000 per annum over 25 years.
- 4.13 This would be offset by lower running costs and in particular energy, and based on purchasing green electric, energy costs would be decreased by around £10,000 per annum. Further work is required to understand whether maintenance costs would be lower before it would be appropriate to cite numbers.
- 4.14 Environmentally, installing electric cremators will reduce NOx emissions by a third (without DeNOx abatement) and reduce CO² emissions by up to 80% if operated through a green energy tariff. This would significantly contribute to the commitments the Council has made through its Environmental Sustainability Strategy and Action Plan in respect of carbon reductions at Astwood.

5. CDS assessment and Recommendations

5.1 The following key points are made by CDS:

- All 3 options can accommodate the proposed upgraded cremator machinery, either gas or electric;
- The external appearance and internal building volumes remain largely unchanged and unimproved with Option A, despite some internal layout improvements.
- Whilst Option B improves external appearance and increases internal building volume, it does require a road alteration to facilitate an extended porte cochere and an extension to the southern façade.

- The layout and proposal within Option C optimises the public facing aspects of the building, whilst providing ample futureproofing in terms of office space and cremator hall accommodation. Furthermore, an extension to the north façade does not require alteration to road layouts.
- A high-level assessment has been provided at this stage and, should the Council wish to pursue a preferred option, layouts, building masses and volumes can be altered and combined with any preferred component of the 3 options.

Cost Comparison (Capital / Revenue)

5.2 The table below sets out both the indicative capital cost of each option based on whether the Council chooses electric or gas cremators, and in addition the annual average revenue impact (capital repayment) of each option based on a 25-year operating life of a cremator and 40-year life of build works. The costs are rounded to the nearest thousand at this stage as they are indicative and will need to be finalised once the preferred option has been agreed.

5.3 Two additional costs have been applied from the figures developed by CDS. The first is in recognition of recent experience in dealing with capital projects, and so 20% risk allowance has been applied rather than the 10% included by CDS. This is an addition of £200,000 for each option. In addition, a sum of £72,000 has been included for Option B only, acknowledging that works to shift the road layout are required. This figure has been developed by CDS utilising costs from previous such projects and has also had a risk allowance of 20% applied to it.

Redesign Option	Capital Cost (£000)	Annual Revenue Implication (cremators over 25 years) (£000)	Annual Revenue Implication (building works over 40 years) (£000)	Total Revenue Implication (£000)	Development Period (months)
A – Electric	5,128	173	161	334	7
A – Gas	4,313	106	168	274	
B – Electric	6,228	172	227	399	10
B – Gas	5,413	106	233	339	
C – Electric	7,084	173	276	449	12
C – Gas	6,270	106	283	389	

5.4 In respect of additional costs (professional fees, surveys, project management etc) of progressing this project to the next stage, assumptions have been made based on other capital projects of scale currently being undertaken by the Council.

5.5 The preferred option of this report is Option B. This Option is considered to represent best value for money for the Council, taking account of the planned improvements to the facilities but also the Council's financial position. The total additional costs for this next stage of design and pre-construction development work, are estimated to be £249,000 and can be treated as capital subject to the project progressing to build phase.

Item	Cost (£000's)
Design Team (2.8% of capital cost)*	149
Surveys (for Planning)	40
Project Management (2 days / week for 9 months)	60
Total	249

* 2.8% has been applied to refurbishment costs, not including the additional costs associated with electric cremators

5.6 Further commentary on financial implications is included at section 5.1.

5.7 The table also sets out the development period for each option with all options proposing to have been delivered within 12 months. There will also be a financial consideration linked to what level of service delivery can continue during the development period particularly if cremations and services need to be undertaken off-site for a period whilst development work takes place.

5.8 A proposal for how the Council would intend to provide its range of services during the development period will be presented to Policy & Resources Committee as part of a final report.

Market Share Analysis

5.9 As part of their recent work, CDS have updated their market share analysis of Astwood Crematorium, and this will be one of several key factors in determining which option the Council should proceed with.

5.10 Previously (utilising ONS 2018 data) it was calculated that 1,657 cremations each year should be undertaken at Astwood given both the unique catchment area it serves and based on minimum distance catchment. The unique catchment area is the population/area that is outside of the catchments of competing crematoria but within the catchment of the subject site. The minimum distance catchment is the area which based on drive times would identify the proposed site as their closest crematorium.

5.11 The updated assessment has utilised ONS 2020 data and is suggesting that 1650 cremations each year should be undertaken at Astwood. A decrease of seven per annum.

5.12 In 2022, Astwood completed 1544 cremations, demonstrating that it is completing 106 fewer cremations than it could expect to each year. CDS comment that this is likely to be linked to qualitative factors and in particular the appeal of Astwood given its increasing age.

- 5.13 CDS comment that given the distances between Astwood and other nearby crematoria, it is unlikely that Astwood would lose or gain significant market share from refurbishment works, and that it would prove difficult to quantify any potential increase to the number of cremations which is down to qualitative experience and family allegiance.
- 5.14 CDS assume, however, that the most extensive level of refurbishment (Option C) would have the highest potential returns in terms of number of cremations. As the extent of refurbishment with Option B is not as high as that of Option C, it would be expected that there would be a slight increase in the number of cremations. With Option A it is unlikely that there will be an increase in the number of cremations at Astwood given the level of refurbishment.
- 5.15 CDS conclude by saying that although in the short term a refurbishment to Astwood would lead to a reduction in cremations (if no temporary measures are in place or partnerships are developed), in the medium to long term a refurbishment is likely to capture a small number of the lost volume of cremations referred to previously.

6. Preferred Option

- 6.1 This report seeks approval for Option B to be progressed to a detailed design stage which would include full costings, and for a further report to be presented to Policy & Resources Committee for final consideration.
- 6.2 Furthermore, the report has set out that electric cremators would be preferred over gas, both from an environmental and financial point of view, in respect of operating costs.
- 6.3 Option B is considered the most cost-effective option in being able to both replace our cremators whilst modernising and improving both the look and feel of Astwood Crematorium for visitors and staff, that it is hoped will enable the service to grow its demand in the future.
- 6.4 The next step, if Committee agree to progress the preferred option, is to appoint the team of design and development professionals to take the project through to the stage where detailed designs are ready to be approved by Members and a planning application can be submitted. This process will also produce a detailed cost plan which will be reported back to Members as part of any recommendation to approve a funding solution for the construction contract and seek to procure a construction partner.

7. Alternative Options Considered

- 7.1 The option of doing nothing and running down the cremators to the end of their operational life has been discounted for two primary reasons. The first is that running down the cremators to the end of their operational life will present significant risk to the delivery of the service due to increased downtime and running costs. Linked to this would be the reputational risk of such an important facility being in decline and the potential impact this would have on bereaved families and funeral directors. There is also a risk that changes to regulations may mean that the current cremators will become non-compliant, particularly in respect of the capability to abate emissions.

- 7.2 Secondly, while the Bereavement Service forms a key function for people in Worcester it is also self-sustaining by generating income for the Council to support the maintenance of the wider service including burial sites, memorial grounds and overheads which would otherwise fall as a cost to the Council. It is important therefore that this income stream is protected as far as possible, as given the financial challenge the Council faces over the term of the medium-term financial plan, it would not be able to subsidise the service to the standard it is currently provided at.
- 7.3 Alternative design options for improving facilities at Astwood have been set out within the main body of this report and are also contained within the CDS Report at **Appendix 1**.
- 7.4 Option A has not been recommended as this project represents not only an opportunity to replace cremators and enhance the environmental and sustainability credentials of the facility, but also to modernise the look and feel of the building and improve its internal layout for customers. It seems prudent to address both challenges at this current time, given that the cremators are a 25-year investment, and the building will require works at some stage in the short or medium term given its age.
- 7.5 Option C has not been recommended as the CDS market share analysis is unable to identify a definitive additional return on investment over Option B, for an additional annual revenue pressure of around £50,000.
- 7.6 As part of future reports, a detailed appraisal of future delivery and financing options will be included.

8. Implications

8.1 Financial and Budgetary Implications

Based on the indicative costings received to date, the capital costs of preferred Option B (including a switch to electric cremators) would be £6,228,000. Capital repayments based on the current borrowing rate of 5.11% over 40 years for land and buildings and 25 years for the cremators would create a revenue pressure of approximately £400,000 per annum. This figure will vary according to the PWLB borrowing rate available at the date that the capital is required.

Total budgeted income for the Crematorium for 2023/24 is £1,360,680, of which £1,255,600 is for cremation fees. An annual capital repayment of £400,000 would reduce income to around £960, assuming no loss of income once the works are complete and other income, such as for memorials, is maintained. This position would be improved through any increase in demand following refurbishment works, and any decrease in running costs associated with electric cremators.

During the period of refurbishment, the Council would see a reduction in income while the facility was closed. It is difficult to estimate this, as options would be developed to enable services to be continued on site as far as possible or at an alternative location as necessary. Further reports will be provided to Policy & Resources Committee once the in-year impact of the closure is understood. However, the maximum risk of option B is the full loss of cremation fees for 10 months, which equates to £1.046m.

Of the £100,000 approved by this Committee from the Crematorium Reserve to further progress this work, to date £24,500 (inc VAT) has been spent, leaving £75,400 available.

To develop a proposal that is detailed in design and fully costed (RIBA Stage 3) and which can be considered by Policy & Resources Committee during Spring 2024, will cost £250,000 as set out at section 5.5. Subject to the works taking place, these costs can be capitalised and charged to the capital programme. This will create a further revenue pressure of approximately £15,000. If the works do not proceed these costs would be written off to revenue and would represent an in-year budget pressure. However, this approach would leave the reserve available to support revenue activities in relation to the project.

The report therefore seeks approval of the Committee to recommend to Council an adjustment to the Capital programme of £250,000.

8.2 Legal and Governance Implications

As noted in section 3 of the report, the proposals for redevelopment of any facilities at Astwood need to be compliant with the Cremation Act 1902. The redevelopment will enable the Council to keep pace with changing legislation relating to air quality and other environmental factors. As the project progresses, other legal considerations will need to be addressed, including through the planning application process.

As the report notes, this is a major capital project for the Council and the primary decision-making Committee will therefore be the Policy and Resources Committee. Consistent with the Council's approved approach to programme management, the project will be reported back to Committee at regular intervals so that risks, programme and costs can be transparently reviewed. Additional oversight will be provided by the Major Programmes Member Reference Group.

8.3 Risk Implications

With Bereavement Services generating a significant amount of income each year, the key corporate risk associated with this project is '*City Plan Priorities – Financial Resources*' and whether the Council has sufficient financial resources to deliver its City Plan priorities. Commentary on this risk is provided at section 5.1.

The Council also has a '*Civil Emergency*' corporate risk which focusses on how the Council would be able to respond effectively in the event of a major civil emergency. Bereavement Services can be called upon during certain periods of civil emergency to meet additional demand as seen previously with COVID-19 and seasonal flu. It will be necessary therefore to liaise with civil emergency partners around the timing of any project and in particular the downtime of cremators.

A further project specific risk is linked to how the Council will approach the provision of bereavement services and in particular chapel service and cremations whilst development works are undertaken. There are both financial and reputational risks that will require mitigation plans and which will be covered in detail as part of the final report to Policy & Resources Committee.

8.4 Corporate/Policy Implications

In the introduction to the Worcester City Plan 2022 – 2027 it states that *'our vision is to maintain Worcester's precious environment through sensitive management of local and city-wide activities and to encourage the use of sustainable energy whenever possible'*.

Within the priority theme 'A Healthy & Active City' the plan states *'we want our residents to have a good start in life, enjoying long, healthy and fulfilling lives, through to a dignified end'*. It seeks to *'ensure that health services and facilities, including pharmacies, are appropriate and accessible'*.

Within the priority theme 'Enhancing and Sustaining our Beautiful City for Future Generations', the plan seeks to *'combat the climate change by leading city-wide measures to reduce carbon emissions'* and recognises the need to *'source renewable/affordable energy'*

The Worcester City Environmental Sustainability Action Plan 2023-24 under the theme of 'Carbon Neutral City Council' commits the Council to developing costed decarbonisation plans for five of the Council's sites, including Astwood Crematorium. If the Council were minded to choose electric cremators as part of any redesign then this would go a significant way to ensuring that Astwood as a site significantly reduced its carbon footprint.

8.5 Equality Implications

At this stage there are no equality implications associated with this report and as the project (subject to approval) progresses from detailed design through to development, ensuring there is no adverse implication for any group of protected characteristics will be a key guiding principle. In addition, accessibility for all will be a key guiding principle as part of detailed design.

8.6 Human Resources Implications

There are no human resource implications associated with this report.

8.7 Health and Safety Implications

There are no health & safety implications associated with this report.

8.8 Social, Environmental and Economic Implications

As referred to within this report many families within Worcester will have a strong allegiance to Astwood Cemetery & Crematorium with loved ones having been buried or cremated there. Ensuring therefore that the city has an attractive and modern crematorium offering moving forward will maintain this allegiance with Astwood and provide a setting that many residents and families will be familiar and comfortable with at a very difficult time.

Environmental implications have been discussed within the main body of this report.

Continuing to provide an effective crematorium offer within the City will support local undertakers, stonemasons, florists etc for whom Astwood represents a large proportion of their business.

Ward(s): Rainbow Hill
Contact Officer: Lloyd Griffiths, Corporate Director – Operations, Homes & Communities, Tel: 01905 722371
E-mail: Lloyd.griffiths@worcester.gov.uk
Background Papers: Appendix 1 - CDS Feasibility Review of Cremator Replacement at Astwood Crematorium