

Appendices

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NORTHAMPTON
BOROUGH COUNCIL

CABINET REPORT

Report Title	Guildhall Boilers and Building Management System Renewal
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AGENDA STATUS: PUBLIC

Cabinet Meeting Date:	22/07/20
Key Decision:	YES
Within Policy:	NO
Policy Document:	NO
Service Area:	Economy & Assets
Accountable Cabinet Member:	Cllr Tim Hadland, Member for Regeneration and Enterprise
Ward(s)	Castle

1. Purpose

- 1.1 To update Cabinet on the condition of the plant and equipment within the Guildhall, specifically the Boilers and Building Management System and to seek approval to appoint a contractor to replace the boilers and undertake any necessary ancillary works to the pipe systems as required to facilitate the replacement of the boilers.

2. Recommendations

It is recommended that:

- 2.1 Cabinet delegates authority to the delegates authority to the Economic Growth and Regeneration Manager, in consultation with the Borough Secretary, Chief Finance Officer and Cabinet Member for Regeneration and Enterprise to appoint the contractor for the Guildhall boiler and associated works following the completion of the tender process; and
- 2.2 Cabinet approves the appointment of a legal advisor if specialist construction law advice is required

3. Issues and Choices

3.1 Report Background

- 3.1.1 The Guildhall boilers, building management system and pumps have exceeded their normal working life. The basement boiler room dates from 1992 and involved the re-connection of the existing Guildhall building heating system onto the main heating system installation for the Guildhall extension. The normal life expectancy of boilers of this type is 25 years as per the CIBSE guide M. An independent Mechanical and Electrical Condition report has identified operational and performance issues that need to be addressed as soon as practical.
- 3.1.2 Over the last 24 months a total of £66,000 has been spent on emergency call outs and maintenance to keep the boilers running and the building heated.
- 3.1.3 The level of expenditure is expected to increase as the boilers are obsolete and components/repairs need to be machine made, which is a slow and costly process.
- 3.1.4 Several radiators in the Old Town Hall are not working properly (notably in the Mayors Quarters). Thermal images imply there is a restriction in the flow pipework at the take off point feeding up to the convectors.
- 3.1.5 There are multiple and significant water leaks in the basement from the pipework serving the heating system. The leaks require daily checks and are becoming more difficult to manage as the condition of the pipes continues to deteriorate.
- 3.1.6 The pipes and surrounding walls have asbestos on them which will need to be removed professionally before any repairs can be undertaken.
- 3.1.7 A report was submitted by Blueprint Building Services Solutions in April 2019 that identified several areas in the Old Guildhall where radiators were not working correctly and are suspected of being air locked or blocked.
- 3.1.8 The report identified that the main secondary pump sets in the boiler room are ageing and motors have been replaced over time. Maintenance records indicate that over a 2-year period 14 separate reactive call outs and cost have been incurred due to problems with various pumps on the heating system.
- 3.1.9 The report identified that access and egress around the boilers, access to the pumps and general health and safety considerations for ongoing maintenance is a concern and that larger components may require on-site construction if larger units cannot be transported to the lower basement level.
- 3.1.10 According to the report, the boilers would have been circa 80% efficient at the time of installation in 1992 and would now be considerably less due their age and current condition.

3.1.11 Options for different fuel types for the boilers were considered prior to specifying a gas fired boiler. The options considered were as follows:

- A biomass system – This option was discounted as there is not suitable space for the storage and delivery of the fuel/pellets, issues with availability of the fuel which could cause issue if using as the sole source of fuel and the high cost implications for installation. The installation of a Biomass system would be between 5 and 10 times greater, depending on the specification of the boiler, than gas powered boilers. There would be a reduction in omissions as a result of using biomass but the costs far outweighed the benefits in this instance.
- Air Heat Source Heat Pump system – This type of system would require substantial works to the ducting throughout the building and given the listed nature of the Guildhall this option was discounted as there would need to be a major capital investment on the old and new Guildhall building to facilitate this.
- Electric fired boiler – While electric emitters are 100% efficient in transferring energy to heat, compared with circa 90% efficiency with gas boilers, the cost of electricity is four times more expensive than gas and as such the ongoing costs would be substantially more with this option.
- Gas fired boilers provide the most economical solution while also offering the ability to fit into the existing mechanical infrastructure within the building. This option was one of the only two that could be delivered within the budget and provides substantial savings in running costs over the alternative. New gas fired boilers will also offer the greatest potential to be adapted to burn blended gas/hydrogen fuel should this become available and would be cheaper to adapt than any of the above alternatives.
- Based on the above therefore, it is considered that gas fired boilers offer the best combination of fuel efficiency, capital investment, adaptability and the least impact on the fabric of the listed building.

3.2 Issues

3.2.1 Replacing the boilers to their original location would incur further costs as the asbestos in the boiler room would have to be completely stripped out (£30-£40K on asbestos removal)

3.2.2 The current boiler room layout and space for maintenance is not fit for purpose. The sump pump is inaccessible as it is sited behind the boilers, high temperature items of boiler plant are accessible, and evidence suggests damage to plant occurs due to space constraints and access to pump sets.

3.2.3 Only 2 out of the 3 existing boilers are operational and there would be significant cost to get the third one working again. The heating system operation is significantly impaired and, should another boiler issue occur on one of the operating units, then the available capacity would be reduced by 50%.

3.3 Choices (Options)

3.3.1 Option 1 – Do nothing

This option is not recommended because the water leaks will become more significant which could result in the Guildhall basement flooding. The impact would be severe due to the volume of paperwork that is archived in that area

Also, the boilers will continue to fail, and the cost of constant call outs and repairs will be substantial. Eventually the failure of the boilers will be permanent and there will be no facility to heat the Guildhall.

3.3.2 Option 2 – Repair the pipework and replace the boilers in their current Location

This option is not recommended because work to replace the boilers would have to be undertaken during the summer months whilst the heating is off, which will not be possible until 2021 as the repairs to the pipes must be undertaken this year. The cost of emergency repairs and maintenance will continue to rise and there will be further cost due to the requirement to strip the asbestos from the boiler room to enable the redundant equipment to be removed and replaced. It has also been identified that there is not adequate space in the room to safely service and maintain the boilers.

3.3.3 Option 3 – Repair the pipework and relocate replacement boilers

This option is recommended because there will be no requirement to strip out the asbestos around the redundant boilers and the new boilers could be installed during the winter months whilst those already in place are still being used to heat the building. The new boiler room layout would be carefully planned to ensure that H&S is paramount, that high temperature items are inaccessible and that there is space to access all parts that may need to be serviced, including the sump pump.

4. Implications (including financial implications)

4.1 Policy

This report does not set policies nor have implications on existing policies.

4.2 Resources and Risk

4.2.1 The costs for the works are estimated as follows:

- Asbestos survey and asbestos removal - £110,000
- Repairs to the pipework - £28,500.
- Boiler replacement, pumps, flue, control panel, water conditioning and vent - £216,000
- Rectify and upgrade the pipework - £89,500
- Relocation of gas supply - £7,500
- Project Management - £30,000
- Contingency - £18,000.

4.2.7 Based on the assumption that the existing boiler plant would be replaced with a new 90% efficient plant, it is calculated that a saving of £2,880.55 per annum would be achieved on energy consumption from the revenue budget.

4.2.8 Electrical power consumption associated with the boiler plant, pump sets and controls are not available for review.

- 4.2.9 A new service and maintenance contract would be sourced to further reduce costs from the revenue budget.
- 4.2.10 Funding of £500,000 has been earmarked from the Capital Project General Fund.
- 4.2.11 The key financial risk of the proposal is that other areas of pipework might degrade and start leaking later which will necessitate further repairs and outlay.

4.3 Legal

- 4.3.1 The tender process and appointment of a contractor will be undertaken in accordance with the Council's Contract Procedure Rules.
- 4.3.2 The project may require the appointment of a law firm to provide specialist construction legal advice.
- 4.3.3 Listed building Consent would be required if the decision is taken to move the boilers to an alternate location within the building.
- 4.3.4 A Building Control Application will be required if the decision is made to move the boilers to an alternate location
- 4.3.5 Removal of asbestos insulation to pipework will be Notifiable works which must be carried out by a licenced contractor

4.4 Equality and Health

- 4.4.1 Under the Health & Safety at Work Act 1974, temperatures in the indoor workplace are covered by the Workplace (Health, Safety and Welfare) Regulations 1992, which place a legal obligation on employers to provide a reasonable temperature. The Approved Code of Practice suggests the minimum temperature in a workplace should be at least 16 degrees Celsius unless the work involves rigorous physical effort. This project will ensure the Council can comply with the Code.

4.5 Consultees (Internal and External)

- 4.5.1 The following have been consulted:
- Building Control Manager
 - Senior Planning Services Officer
 - Senior Conservation Officer
 - Blueprint Building Services Solutions
 - Property Services Manager
 - Senior Environmental Health Officer

4.6 How the Proposals deliver Priority Outcomes

4.6.1 Exceptional services:

- Make the best use of our Assets
The Guildhall is part of the commercial offering and being able to rent out rooms generates income. Being able to adequately heat the building during colder months is key to this.
- Provide value for money
The new heating system will be much cheaper to run, and the initial outlay will result in savings in the future.

4.6.2 A stronger Economy

- Protect, enhance and promote our heritage
The Guildhall is a 2* Listed Building and one of the best examples of Gothic architecture in the country. Repairing the heating system so the building remains warm and dry will help with preserving it for future generations

4.7 Environmental Implications (including climate change issues)

- 4.7.1 The new boilers will significantly reduce the CO2 emissions and improve comfort levels for the workforce over the winter months. The estimation is that 14.25 tonnes of CO2 could be saved.

4.8 Other Implications

- 4.8.1 There are no implications other than those covered in this report.

5. Background Papers

- 5.1.1 Building Services Condition Report – Northampton Guildhall Plantroom – prepared for Northampton Borough Council by Blueprint Building Services Solutions.

6. Next Steps

- 6.1.1 Appoint a Project Management team using the Scape Framework for a mini tendering competition with a view to the work starting in August 2020

Kevin Langley
Economic Growth and Regeneration Manager