Report for: ACTION

Contains Confidential or Exempt Information	*NO - Part I*
Title	**Town Hall Building Management System Upgrade Business Case**
Responsible Officer(s)	David Scott, Head of Governance, Partnerships, Performance and Policy
Contact officer, job title and phone number	Michael Potter, Energy Reduction Manager, 01628 682949
Member reporting	Cllr Coppinger, Lead Member for Sustainability
For Consideration By	Sustainability Panel
Date to be Considered	25th January 2016
Implementation Date if Not Called In	Immediately
Affected Wards	None

REPORT SUMMARY

1. This report provides an overview and business case for the upgrade of the Town Hall building management system (BMS).
2. This paper recommends that an upgrade of the Town Hall building management system is implemented.
3. The recommendation is being made because it is important that the Council improves its control of energy usage in the Town Hall. This will help to deliver further energy savings.

If recommendations are adopted, how will residents benefit?	
Benefits to residents and reasons why they will benefit	Dates by which residents can expect to notice a difference
1. By improving the building management controls the Council will be able to provide more efficient and value for money services.	March 2017

1. DETAILS OF RECOMMENDATION

RECOMMENDATION: that the upgrade of the Town Hall building management system (BMS) be approved and be funded from the Energy Initiatives capital budget.

2. REASON FOR RECOMMENDATION(S) AND OPTIONS CONSIDERED

2.1 The business case highlights the need to replace and upgrade the existing Town Hall building management system (BMS). The BMS currently controls the boiler, hot water cylinder and chiller systems and due to its age it can no longer be maintained or accessed by relevant staff. This lack of control means that energy is not being properly controlled in the Town Hall.

Option	Comments
The Council does not upgrade the Town Hall building management system. **This is not recommended**	Failing to upgrade the building management system at the Town Hall would mean that the proper controls are not in place to manage energy effectively.
The Council upgrades the Town Hall building management system. **This is the recommended option**	The Council would be able to effectively control energy in the Town Hall by maximising the control algorithms of the main energy using plant.

3. KEY IMPLICATIONS

Defined Outcomes	Unmet	Met	Exceeded	Significantly Exceeded	Date they should be delivered by
Overall percentage reduction of gas and electricity compared to 2013/14 baseline.	>11%	11%-11.5%	11.6%-12	>12%	31st March 2017

4. FINANCIAL DETAILS

Financial impact on the budget

	2015/16	2016/17	2017/18
	Capital £'000	Capital £'000	Capital £'000
	£0	£30	£0

4.1 This project to be funded from the existing Energy Efficiency Initiatives capital budget.

4.2 It is expected that a revenue saving in the region of £2.5k per annum could be achieved by carrying out the upgrade. Electrical savings may be made by expanding the system controls to cover the air conditioning systems.

5. LEGAL IMPLICATIONS

5.1 The upgraded control system will accord with the Workplace (Health, Safety and Welfare) Regulations 1992, which lay down particular requirements for most aspects of the working environment. Regulation 7 deals specifically with the temperature in indoor workplaces and states that:

'During working hours, the temperature in all workplaces inside buildings shall be reasonable.'

5.2 A contract will be tendered and awarded in accordance with the Council's contract rules.

6. VALUE FOR MONEY

6.1 Work to reduce the Council's energy usage will provide residents with value for money by reducing ongoing revenue expenditure. By upgrading the Town Hall building control system the Council will be able to better control the Town Hall's energy consumption.

7. SUSTAINABILITY IMPACT APPRAISAL

7.1 This project relates to improving the control of energy in buildings which will help to improve the sustainability of the Council by reducing energy usage and by improving operational processes. The upgrades will help to improve business continuity through better fault reporting.

8. RISK MANAGEMENT

Risks	Uncontrolled Risk	Controls	Controlled Risk
Targets for overall energy reduction are not met.	High	By installing appropriate building energy controls the Council will be able to limit waste and inefficiencies.	Low
Increasing energy costs for the council puts additional pressures on budgets.	High	By improving the building energy control system the Council can better control energy costs as well as officer costs dealing with temperature/ control issues.	Low
Heating and cooling plant faults are not highlighted as they occur	High	An up to date building management system will ensure that faults are highlighted to the relevant staff as soon as they occur.	Low
Extensions to the building management system are not possible	Medium	A new building management system will allow extensions to the system which will ensure better control of the building and therefore its energy consumption	Low

9. LINKS TO STRATEGIC OBJECTIVES

9.1 The building management system upgrade meets the following strategic priorities of the Council:

Residents First
- Improve the Environment, Economy and Transport

Value for Money
- Improve the use of technology
- Invest in the future

Delivering Together
- Deliver Effective Services

Equipping Ourselves for the Future
- Equipping Our Workforce
- Developing Our systems and Structures

10. EQUALITIES, HUMAN RIGHTS AND COMMUNITY COHESION

10.1 Staff should have comfortable office working temperatures in order to carry out their work as set out in the Workplace (Health, Safety and Welfare) Regulations 1992, which states that a minimum working temperature of 16 degrees must be achieved.

11. STAFFING/WORKFORCE AND ACCOMMODATION IMPLICATIONS

11.1 The proposed Town Hall controls upgrade should help to provide improved working conditions and will enable adjustments to building controls remotely.

12. PROPERTY AND ASSETS

12.1 This project contains content relating to the improvement of the Town Hall's building controls.

13. ANY OTHER IMPLICATIONS

13.1 None

14. CONSULTATION

14.1 None

15. TIMETABLE FOR IMPLEMENTATION

15.1 The current proposed timetable for implementation is as follows:

Date	Details
1st February 2016	Tender document preparation commences
31st May 2016	Tender documents issued

Date	Details
30th June 2016	Tender documents returned
31st July 2016	Contractor agreed & contract commences
30th September 2016	Works complete

The timetable is subject to change following further internal consultation.

16. APPENDICES

16.1 None

17. BACKGROUND INFORMATION

Current Town Hall control system

17.1 Currently the Town Hall has three building control system (BMS) control panels. The main control panel controls the main boiler system across most of the Town Hall and a hot water cylinder which provides hot water to the toilets. A second control panel controls the chiller system and various pumps which heat and cools ground floor areas such as the customer contact centre. A third panel controls a hot water cylinder and boiler for the café and Desborough suite. There is also a further separate controller for the air conditioning units.

17.2 Unfortunately the current control system is old and was last upgraded in 2006. When the system was last upgraded there was support available to allow repairs and maintenance to occur. However, this is no longer available since no companies in the UK provide support services for the particular system in place. This therefore means that the controls can no longer be maintained nor can they be upgraded as required.

17.3 Further to this, following the upgrade of the Council's IT infrastructure, it is no longer possible for the control system to be controlled on the Council's servers, which means that officers does not have access to the system controls to make adjustments.

Update of the existing building management controls

17.4 The current building management system is currently working on autopilot to its original control algorithms. Although some control is maintained, it is no longer possible to maintain the system to its optimum operation. Adjustments and upgrades of the existing system are no longer possible. It is therefore recommended that the building management system is replaced with a modern system which will allow adjustments and optimisations. Without the upgrade the Council would be potentially using more energy than is required.

Extension of the controls

17.5 The Town Hall control system was designed before the building refurbishment. This has lead to the situation where certain aspects to the building energy consumption are not being controlled centrally through the building management system. An area for concern is that the air conditioning units are being controlled by their own controls entirely separate to the main building controls. This can potentially lead to a conflict of systems which leads to increased energy usage, i.e. air conditioners cooling when the main boilers are heating. This air

conditioning control unit should be connected to the main building management system (BMS).

Connection of the three Town Hall Building Management Systems (BMS) to a central control platform

17.6 Currently the three BMS panels at the Town Hall are working independently of each other. Ideally, the controls for one building should work in unison and the controls should be accessed in one central place. This is to ensure that the controls are easily accessed by the user and that they do not conflict with each other. It is recommended that the user interface for the BMS system controls all of the Town Hall control panels from one point of access.

17.7 There are two methods for achieving a central control portal, either through the Council's servers or externally via a web portal. Currently discussions are ongoing with IT to determine the best option to link the systems.

Estimated Costs

17.8 Some budgeting costs have been sought from external contractors to determine the extent of the project. To upgrade the Town Hall building management system and connect the air conditioning system to the building management system is estimated to cost in the region of £25k - £30k.

Savings and further benefits of the upgrade

17.9 The contractors that have been contacted have stated that a 10-15% saving can be achieved by upgrading the building management system. In gas terms this would equate to roughly £2.5k per annum. Further to this the connection of the air conditioning to the system should also yield some electrical savings.

17.10 The upgrade is essential to ensure better future performance of the Town Hall's heating system. Currently if a single fault occurred it would not be highlighted to the relevant staff and may continue indefinitely. In the long run this could cause major issues to the comfort of staff working in the building and could also mean that the Council was wasting energy. It is already apparent that there is an overheating problem in certain areas of the Town Hall and this needs to be rectified as soon as possible.

17.11 Also, as the building management system can no longer be maintained this means that future upgrades to the control system can not be implemented. For example, control of other equipment such as the fan coil units on the ground floor and the heat recovery units across the building can not be connected to the system in its current state. Future energy saving projects are therefore not possible without this upgrade.

18. CONSULTATION (MANDATORY)

Name of consultee	Post held and Department	Date sent	Date received	See comments in paragraph:
Internal				
Andrew Scott	Civic Team Manager	11/01/16	13/01/16	Throughout
David Scott	Head of Governance,	14/01/16	14/01/16	Throughout

Name of consultee	Post held and Department	Date sent	Date received	See comments in paragraph:
	Partnerships, Performance and Policy			
External				

REPORT HISTORY

Decision type:	Urgency item?
Non-key decision	No

Full name of report author	Job title	Full contact no:
Michael Potter	Energy Reduction Manger	01628 682949