

<p>Committees:</p> <p>Projects & Procurement Sub Committee (For information)</p> <p>Policy and Resources Committee (For Decision)</p>	<p>Dates:</p> <p>4 December 2023</p> <p>14 December 2023</p>
<p>Subject: BEMS Upgrade Project – Phase 1, Stage3: Guildhall East Wing</p> <p>Unique Project Identifier: 12268</p>	<p>Gateway 3/4/5: Options Appraisal and Authority to Start Work (Regular)</p>
<p>Report of: City Surveyor</p> <p>Report Author: Brendan Crowley</p>	<p>Public For Decision</p>

<p>1. Status update</p>	<p>Project Description: Building Energy Management Systems (BEMS) monitor and control the Heating, Ventilation and Air Conditioning (HVAC) systems, and other building systems across the Corporation. The BEMS is vital for ensuring the continuity and performance of building services, including their energy efficient operation. The BEMS systems at several sites are now obsolete, unsupported, and at end-of-life. ‘BEMS Upgrade Project Phase 1’ includes upgrades for: London Metropolitan Archives, Walbrook Wharf and the Guildhall East Wing and is being delivered in 3 stages.</p> <p>Note: there is a request to de-scope the migration of the BEMS in the CoLP GYE offices due to future planned works in this building, please see further explanation below in section 4.</p> <p>RAG Status: Amber (Amber at last gateway)</p> <p>Risk Status: Medium (Medium at last gateway)</p> <p>Total Estimated Cost of Project for stage 3 (excluding risk): £684,226. £716,495. (incl. risk). This is an increase of £1,208 from the Gateway2 issue report.</p> <p>Change in Total Estimated Cost of Stage 3 of Project (including risk): £1,208</p> <p>Spend to Date: Spend to date for Stage 3 of the project is £20,372 on Consultancy fees.</p>
--------------------------------	---

	<p>Funding Source: City Fund/City’s Cash & CWP funding</p> <p>Slippage: The initial project cost estimate (which informed earlier GW papers) were developed from a set of initial broad-brush site surveys. These estimate costs needed to be refined with more detailed technical surveys. Guildhall East Wing is a complex building which required a detail design specification to be delivered by Hilson Moran Ltd. This design took additional time along with the generation of accurate pricing for the BEMS specialist. This project also required the full completion of the PSDS GYE AHU project before this BEMS project could be started. Practical completion of the PSDS project is expected in Oct 2023. See section 3. for budget implications of de-scope.</p>
<p>2. Next steps and requested decisions</p>	<p>Next Gateway: Gateway 6: Outcome Report</p> <p>Note: that central funding has been agreed in principle and will therefore require further approval of RASC to draw down the funds.</p> <p>Requested Decisions: Approve Option 3: Migration of BEMS systems to Ecostruxure platform at Guildhall East Wing, except GYE Police Offices. This involves the migration of the relevant BEMS systems on site, procured via the Minor Works Frame, and delivered by the Minor Projects Team.</p> <ol style="list-style-type: none"> 1. Approve that a budget of £663,854 excluding risk be allocated to Stage 3 Guildhall East Wing, to reach the Gateway 6. Breakdown of costs: <ul style="list-style-type: none"> • Consultants Fees = £20,465 • Works = £643,389 2. Note that by approving Option 3, there is a de-scope of the project to exclude GYE Police Offices, further explanation in section 4. 3. Approve that a CRP budget of £32,269 is allocated to Stage3: Guildhall East Wing, to reach the next gateway. Please Appendix 2 Risk Register for details. 4. Next Steps: <ol style="list-style-type: none"> a) Secure project approval. b) Appoint Consultancy services for delivery & project management. c) Procure principal contractor services from preferred supplier via minor works framework. d) Request fixed cost proposal form contractors via principal contractor. e) Carry out hand over to assigned project manager from City Surveyor’s Minor Projects Team. f) Engage with site stakeholders at Guildhall to plan the phasing of the works. g) Start installation works.
<p>3. Budget</p>	

7. Note: the provisional funding approved to meet the total estimated project cost for 'BEMS Upgrade Project – Phase 1' project was £823,920 (excl. risk), £904,769 (incl. risk). In addition to this, approval was given for the reallocation of £229,200 of the unrequired central funding (£114,600 City Fund and £114,600 City's Cash) from 'Energy Reduction Programme – Phase 1' to the 'BEMS Upgrade ProjectCPG Estate – Phase 1' in the November 2021 GW2 issue report, see supporting papers. Additional funding is from CWP C1522CW002L. Please refer to table 2 in Appendix 3 for project funding matrix.
8. Approval was previously given for Phase 1 to be delivered in three stages. This paper addresses Stage 3 - the works at Guildhall East Wing.
9. The cost of Stage 3 is estimated to be £684,226 (excl. Risk), for funding stream breakdown for stages 1, 2 & 3 of the project please refer to table 2 in Appendix 3.
For recommended option 2:
Costed Risk Provision requested for this Gateway: £32,269 (as detailed in the Risk Register – Appendix 2)

Please see below Phase 1 Project overall cost summary (for details on actual Stage 1 & 2 project spend to date see App. 3):

Phase1 Stage	Cost Excl. Risk	Risk budget	Cost Incl. Risk	Comments
Stage 1 – GH (PSDS)	£325,558*	£6,833	£332,391	Delivered as part of PSDS Project in 2022/23
Stage2 – LMA & WW	£234,642	£34,838	£269,480	Completed in Sept 2023
Stage3 - GH	£684,226	£32,269	£716,495	Addressed in this paper
Phase1 Total	£1,244,426	£73,940	£1,318,366	

*Note: variations relating to BEMS for the PSDS project were funded by CWP fund R0720CW007L.

4. Overview of project options

10. 'BEMS Upgrade Project Phase 1' is being delivered in 3 stages. Stage 1 & 2 have already been delivered in two separate stages, stage 1 relates to the Guildhall and was delivered as part of the 'Guildhall Ventilation PSDS Project'. Stage 2 covered the upgrades at London Metropolitan Archive (LMA) and Walbrook Wharf, see background papers. Stages 1 and 2 were completed in September and October 2023.

	<p>11. De-scope: On advice from the Guildhall Manager all projects for the GYE CoLP Offices are to be put on-hold for now, due to the planned CoLP office refurbishment project when replacement or changes to any of the existing plant and assets will be incorporated into CoLP design requirements. As a result, we request that the migration of the BEMS system for the offices are de-scoped from this project. The preferred approach would be to upgrade the BEMS as part of the office refurbishment project. All other BEMS panels remain in scope for this project. This reduction scope has not resulted in a reduction project cost, however. Initial estimates were based on broad-brush surveys which didn't have sufficient detail. Detailed design work by Hilson Moran Consultants, together with cost increases on hardware & labour have meant the true cost is higher than initially estimated. Therefore, the available budget can cover the reduced scope for Stage 3 but no more, therefore there is no intention to request further funding now or at GW5.</p> <p>12. If the decision is to keep the GYE CoLP Offices in-scope for this project stage then further funding will be required. As stated above detailed design / QS work has arrived at cost of £800,000 for the GYE offices, proving the initial high-level costings at GW1 were vastly underestimated. This sum will be required to be added to the current available funding, to fund the work in offices. It is felt this is not a sensible investment considering the uncertainty around the future use of the offices, and the likely whole-sale reconfiguration of the M&E / BEMS services for the offices during the refurbishment project.</p> <p>13. Options presented in this report:</p> <p><u>Option1</u> – The “Do nothing” approach.</p> <p><u>Option2</u> – Migration of legacy BEMS systems to Ecostruxure platform at Guildhall East Wing, keeping the GYE police Office in scope.</p> <p><u>Option3</u> – Migration of legacy BEMS systems to Ecostruxure platform at Guildhall East Wing, excluding the GYE police Office from the scope.</p>
<p>5. Recommended option</p>	<p>Option 3 - Migration of legacy BEMS systems to Ecostruxure platform at Guildhall East Wing, excluding the GYE police Office from the project scope. This is the preferred option as the existing system is end of life and at risk of failure, new BEMS platform will provide benefits in terms of performance and savings. Inclusion of GYE offices in the scope is not seen as a sensible investment. We recommend that the works be procured via Minor Works framework.</p>
<p>6. Risk</p>	<p>A CRP of £32,269 is required to migration the following common risks for the projects:</p> <ul style="list-style-type: none"> • <i>Supply and instal of equipment costs higher than expected.</i> • <i>Consultancy services - costs higher than expected.</i> • <i>Asbestos removal cost higher than expected.</i> • <i>Poor environmental control during works at LMA - danger to archived artefacts.</i> • <i>Unforeseen extra Out of hours working required.</i>

	<ul style="list-style-type: none"> IT costs higher than expected due to need for network segregation.
7. Procurement approach	CityProc have approved direct award to preferred supplier via Minor Works Framework for Stage 3.
8. Design summary	<p>13. MCC9 BMS Panel Net-Controller Extend Enterprise Server licensing as needed for the required EcoStruxure controller and take a backup of the Net-Controller II. Decommission and replace the Net-Controller II and input/output modules with an EcoStruxure AS-P Automation Server and input/output modules. Connect the AS-P to the existing local CoL IT network Ethernet data point. Replace all input instrumentation.</p> <p>14. MCC8 BMS Panel Net-Controller Decommission and replace the Net-Controller II and input/output modules with an EcoStruxure AS-P Automation Server, input/output modules and Ethernet managed switch for a private network connected to the second port of the AS-P. Connect the AS-P to the existing local CoL IT network Ethernet data point. Re-connect the RS-485 sub-network. All Infnit controllers to be replaced with RS-485 compatible RCPs. Replace all input instrumentation.</p> <p>15. MCC11 and Fire Damper BMS Panel Net-Controller Decommission and replace the Net-Controller II and input/output modules with an EcoStruxure AS-P Automation Server, input/output modules and Ethernet managed switch for a private network connected to the second port of the AS-P. Connect the AS-P to the existing local CoL IT network Ethernet data point. Re-connect the RS-485 sub-network. All Infnit controllers to be replaced with RS-485 compatible RCPs. Replace all input instrumentation.</p>
9. Delivery.	<p>Details of how the project will be delivered, including the proposed contractor(s) and/or supplier(s)</p> <p>16. Project will be managed by the Minor Works Team (City Surveyors). Client-side Project Manager will be Chris Sharpe.</p> <p>17. Contract for the works will via the Measured Terms Contract– Sykes & Sons Ltd.</p> <p>18. BEMS specialist has already been engaged to propose solutions and costs. Sykes will request a quote from 3 supplier and consult with the client on these.</p>
10. Success criteria	<p>19. Replacement of all obsolete legacy BEMS hardware and software</p> <p>20. Successful installation and commissioning of new EcoStruxure BEMS hardware and Software.</p>

	<p>21. Improved system reliability and future proofing business as usual operation of these key corporation sites and through installation modern building controls.</p> <p>22. Enhanced user experience through interactive graphics, trend data presentation and alarm management facilities.</p> <p>23. Integration of the new BEMS system with 3rd party systems on site, and with the Enterprise server at Guildhall. As well at the new Building Analytics software package being procured via the PSDS. programme</p>
11. Progress reporting	Progress report will be provided to the senior responsible officer and the City Surveyor on a regular basis. Project Vision will be updated monthly, and issue reports will return to committee as necessary.

Appendices

Appendix 1	Project Cover Sheet
Appendix 2	Risk Register
Appendix 3	Phase 1 Project Summary

Contact

Report Author	Brendan Crowley
Email Address	brendan.crowley@cityoflondon.gov.uk
Telephone Number	07395600031

This document can only be considered valid when viewed via the CoL Intranet website. If this is printed into hard copy or saved to another location, you must check that the effective date on your copy matches that of the one on-line.

Options Appraisal Matrix

Option Summary	Option 1	Option 2	Option 3
1. Brief description of option	Do nothing approach.	Migration of legacy BEMS systems to Ecostruxure platform at Guildhall East Wing, keeping the GYE Police Offices in scope.	Migration of legacy BEMS systems to Ecostruxure platform at Guildhall East Wing, excluding the GYE Police Office from the project scope.
2. Scope and exclusions	No Capital or CWP funding investment required with the decision not to install new BEMS platforms.	Full migration of BEMS system at Guildhall East Wing, funded by a combination of City's Cash, City Fund and CPW funding. Procure works via the Intermediate Works Frameworks as single contract. It is estimated that an additional £800,000 will be required to fund the migrate the BEMS for offices, to be added to the current available funding.	Migration of BEMS at Guildhall East Wing excluding the GYE Police Office system. To be funded by a combination of City's Cash, City Fund and CPW funding. Procure works via the Intermediate Works Frameworks as single contract.
Project Planning			
3. Programme and key dates	n/a	<ol style="list-style-type: none"> 1. Secure project approval - Nov 2023 2. Procure consultancy services for Phase 1 Stage 3 – Dec 2023 3. Procure principal contractor services from preferred supplier via minor works framework – Jan 2024 4. Place order with Contractor Mar 2024 5. Set out project phasing for on-sites works with consultant, PM and contractor - Feb 2024 	<ol style="list-style-type: none"> 1. Secure project approval - Nov 2023 2. Procure consultancy services for Phase 1 Stage 3 – Dec 2023 3. Procure principal contractor services from preferred supplier via minor works framework – Jan 2024 4. Place order with Contractor Mar 2024 5. Set out project phasing for on-sites works with consultant, PM and contractor - Feb 2024 6. Engage with site stakeholders at Guildhall to and agree project phasing - Feb 2024

This document can only be considered valid when viewed via the CoL Intranet website. If this is printed into hard copy or saved to another location, you must check that the effective date on your copy matches that of the one on-line.

Option Summary	Option 1	Option 2	Option 3
		<ol style="list-style-type: none"> 6. Engage with site stakeholders at Guildhall to and agree project phasing - Feb 2024 7. Start on site April 2024 8. Practical completion of works on both sites Dec '24 9. System handover June '25 10. Gateway 6 report 6 months after project completion 	<ol style="list-style-type: none"> 7. Start on site April 2024 8. Practical completion of works on both sites Dec '24 9. System handover Jan'25 10. Gateway 6 report 6 months after project completion
<p>4. Risk implications</p>	<ul style="list-style-type: none"> • Carbon Action Strategy not supported by not utilising latest Building control technology. • Reduced ability to enable energy and carbon savings. 	<p>Risk Status: Medium.</p> <ol style="list-style-type: none"> 11. It is estimated that an additional £800,000 will be required to fund the migration of the BEMS for offices, to be added to the current available funding. 12. Potential for current Police Office BEMS to fail before office refurbishment project takes place. 13. Guildhall works Principal Contractor quote is Higher than expected. 14. IT enabling works costs higher than expected 15. Asbestos removal cost higher than expected 16. Supply and install equipment cost higher than expected. 17. Supply and install equipment cost higher than expected. 18. Consultancy services - addition requirements Fee 	<p>Risk Status: Medium.</p> <ol style="list-style-type: none"> 11. Guildhall works Principal Contractor quote higher than expected. 12. IT enabling works costs higher than expected 13. Asbestos removal cost higher than expected 14. Supply and install equipment cost higher than expected. 15. Supply and install equipment cost higher than expected. 16. Consultancy services - addition requirements Fee

This document can only be considered valid when viewed via the CoL Intranet website. If this is printed into hard copy or saved to another location, you must check that the effective date on your copy matches that of the one on-line.

Option Summary	Option 1	Option 2	Option 3
5. Stakeholders and consultees	None	Peter Ochser – Guildhall building Manager. Luca Pagliaroli – Guildhall Tech Services manager David Clelland – IT Johnathon Cooper – City Surveyors Chris Sharpe - City Surveyors Graeme Low – City Surveyors •	Peter Ochser – Guildhall building Manager. Luca Pagliaroli – Guildhall Tech Services manager David Clelland – IT Johnathon Cooper – City Surveyors Chris Sharpe - City Surveyors Graeme Low – City Surveyors
6. Benefits of option	No resource requirements to manage the project.	19. Mitigate risk of system failure and impact on business continuity, through removal of all obsolete legacy BEMS hardware and software. 20. Improved system reliability and ensuring business-as-usual for these key corporation sites and through installation of a modern building controls platform. 21. Enhanced user experience through interactive graphics, trend data presentation and alarm management facilities. 22. Support for the Carbon Action Strategy through improved plant optimisation and reduction in energy consumption and carbon emissions. 23. Integration of the new BEMS system with 3 rd party systems on site, and with the Enterprise Server at	17. Mitigate risk of system failure and impact on business continuity, through removal of all obsolete legacy BEMS hardware and software. 18. Improved system reliability and ensuring business-as-usual for these key corporation sites and through installation of a modern building controls platform. 19. Enhanced user experience through interactive graphics, trend data presentation and alarm management facilities. 20. Support for the Carbon Action Strategy through improved plant optimisation and reduction in energy consumption and carbon emissions. 21. Integration of the new BEMS system with 3 rd party systems on site, and with the Enterprise Server at Guildhall. As well as the new Building Analytics

This document can only be considered valid when viewed via the CoL Intranet website. If this is printed into hard copy or saved to another location, you must check that the effective date on your copy matches that of the one on-line.

Option Summary	Option 1	Option 2	Option 3
		Guildhall. As well as the new Building Analytics software package being procured via the PSDS programme.	software package being procured via the PSDS programme.
7. Disbenefits of option	<ul style="list-style-type: none"> No potential energy/carbon savings delivered. Carbon Action Strategy not supported. 	<p>It is estimated that an additional £800,000 will be required to fund the migrate the BEMS for offices, to be added to the current available funding.</p> <p>Likely waste of significant funding due to the uncertainty around the future use of the offices, and the likely whole-sale reconfiguration of the M&E / BEMS services for the offices during the refurbishment project.</p>	Requirement for additional Project Management resource from City Surveyors to oversee project.
Resource Implications			
8. Total estimated cost	£0.00	£ 1,516,495 Including Risk	£716,495 Including Risk
9. Funding strategy	n/a	<ul style="list-style-type: none"> City Fund City's Cash CWP funding 	<ul style="list-style-type: none"> City Fund City's Cash CWP funding
10. Investment appraisal	n/a	The Corporate Energy Team have carried out assessment of the ROI based on the savings delivered by option 2 (a & b) compared to no associated saving with option 1. This	The Corporate Energy Team have carried out assessment of the ROI based on the savings delivered by option 2 (a & b) compared to no associated saving with option 1. This ROI is

This document can only be considered valid when viewed via the CoL Intranet website. If this is printed into hard copy or saved to another location, you must check that the effective date on your copy matches that of the one on-line.

Option Summary	Option 1	Option 2	Option 3
		ROI is modest as this is not an energy efficiency project. It is an essential business continuity project to replaced failing equipment.	modest as this is not an energy efficiency project. It is an essential business continuity project to replaced failing equipment.
11. Estimated capital value/return	n/a	The project is estimated to deliver savings of £15,000/ann. in maintenance and energy costs.	The project is estimated to deliver savings of £12,000/ann. in maintenance and energy costs.
12. Ongoing revenue implications	n/a	There is no additional on-going revenue implications for the new equipment as it is like for like replacement of assets already maintained as part of the City's BEMS Service Contract.	There is no additional on-going revenue implications for the new equipment as it is like for like replacement of assets already maintained as part of the City's BEMS Service Contract.
13. Affordability	n/a	Option is not fully covered under the allocated and approved Capital and GH east Wing BEMS CWP C1522CW002L funding budget.	Option is covered under the allocated and approved Capital and GH east Wing BEMS CWP C1522CW002L funding budget.
14. Legal implications	n/a	n/a	n/a
15. Corporate property implications	none	Consultation required with City Surveyors Corporate Property Team to ensure new equipment captured in the asset register for each site, replacing of existing legacy assets.	Consultation required with City Surveyors Corporate Property Team to ensure new equipment captured in the asset register for each site, replacing of existing legacy assets.
16. Traffic implications	none	none	none

This document can only be considered valid when viewed via the CoL Intranet website. If this is printed into hard copy or saved to another location, you must check that the effective date on your copy matches that of the one on-line.

Option Summary	Option 1	Option 2	Option 3
17. Sustainability and energy implications	<ul style="list-style-type: none"> No potential energy/carbon savings delivered. Carbon Action Strategy not supported. 	Project is being developed by the Corporate Energy team via the to deliver energy and carbon saving in line with the Climate Action Strategy	Project is being developed by the Corporate Energy team via the to deliver energy and carbon saving in line with the Climate Action Strategy
18. IS implications	none	Opportunity Outline submitted to IT PMO for survey to any IT network extension requirements associated with the project. IT have provided network architect support.	Opportunity Outline submitted to IT PMO for survey to any IT network extension requirements associated with the project. IT have provided network architect support.
19. Equality Impact Assessment	none	none	none
20. Data Protection Impact Assessment	none	none	none
21. Recommendation	Not recommended	Not recommended	Recommended