

<b>Committees:</b> Corporate Projects Board <i>for decision</i> Corporate Asset Sub <i>for decision</i> Projects Sub <i>for decision</i>	<b>Dates:</b> 03 November 2021 24 November 2021 17 November 2021
<b>Subject:</b> BEMS Upgrade Project-CPG Estate – Phase 1 <b>Unique Project Identifier:</b> 12268	<b>Gateway 2</b> Regular <b>Issue Report</b>
<b>Report of:</b> City Surveyor <b>Report Author:</b> Brendan Crowley	<b>For Decision</b>
<h1 style="margin: 0;">PUBLIC</h1>	

<b>1. Status update</b>	<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 Corporate Property Group (CPG) estate. The BEMS is vital for ensuring the continuity and performance of building services, including their energy efficiency operation. The BEMS systems at a number of sites are now obsolete, unsupported, and at end-of-life. Phase 1 of the ‘BEMS Upgrade Project-CPG Estate’ includes upgrades for: London Metropolitan Archives, Walbrook Wharf and the Guildhall East Wing.</p> <p>Approval was previously given for Phase 1 to be delivered in two stages, with stage 1 which relates to the Guildhall being delivered as part of the ‘Guildhall Ventilation PSDS Project’, see background papers.</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 (including risk): £1,311,378</p> <p>Change in Total Estimated Cost of Project (including risk): increase of £406,609 since last report to Committee.</p> <p>Spend to Date: £1,916.40</p> <p>Costed Risk Provision Utilised: £0;</p> <p>Funding Source: GW2 Approved funding including risk:</p> <ul style="list-style-type: none"> <li>• £579,258 from City Fund</li> </ul>
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	<ul style="list-style-type: none"> <li>• £325,511 from City's Cash</li> </ul> <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, which took longer than anticipated to complete, especially for the Guildhall, creating a delay.</p> <p>Increased project Cost: While there has not been a change in project scope the results of these detailed surveys have highlighted that enabling works are required for the project to meet its objectives. This is primarily around the install of extensive IT network infrastructure which have increased cost significantly. Increased cost of BMS hardware &amp; software licences over the last year has also pushed up total project cost. These elements combined has raised an issue that there are insufficient remaining funds to complete the full scope of works.</p>
<p><b>2. Requested decisions</b></p>	<p><b>Next Gateway:</b></p> <p>Gateway 3/4 - Options Appraisal (Regular) for BEMS Upgrade Project-CPG Estate – Phase 1 (Stage 2)</p> <p><b>Requested Decisions:</b></p> <ol style="list-style-type: none"> <li>1. That Option <b>3</b> is approved:       <ol style="list-style-type: none"> <li>a) Approval for reallocation of £229,200 of the now unrequired central funding (£114,600 City Fund and £114,600 City's Cash) from 'Energy Reduction Programme – Phase 1' to the 'BEMS Upgrade Project-CPG Estate – Phase 1 (stage 2)'.</li> <li>b) Approve that the CWP funds within the project 'C1522CW002L' are used to meet the costs of the Guildhall East wing control upgrades within the BEMS Upgrade Project-CPG Estate – Phase 1(stage 2).</li> <li>c) Approve that the CWP funds within the project 'R0722CW003L' are used to meet the costs of the LMA controls upgrades within the BEMS Upgrade Project-CPG Estate – Phase 1(stage 2).</li> </ol> </li> </ol>
<p><b>3. Budget</b></p>	<ol style="list-style-type: none"> <li>1. Note: the provisional funding approved to meet the total estimated project cost for 'BEMS Upgrade Project-CPG Estate – Phase 1' project was £823,920 (excl. risk), £904,769 (incl. risk). The funding breakdown including risk:       <ul style="list-style-type: none"> <li>• £579,258 from City Fund</li> <li>• £325,511 from City's Cash</li> </ul> </li> </ol>

2. Note: the estimated total project cost, including risk, for completion of the full scope works for the BEMS upgrade project Phase 1 is £406,609 (incl. risk) more than the central funding which was provisionally allocated to the project at GW2, (£904,769 incl. risk).
3. Note: The 'Energy Reduction Programme – Phase 1' Gateway 2 (issue) report requests approval of £229,200 of the now unrequired central funding (£114,600 City Fund and £114,600 City's Cash) to the 'BEMS Upgrade Project-CPG Estate – Phase 1', see background papers The 'Energy Reduction Programme – Phase 1' Gateway 2 (issue) report will be presented to the same committee meetings as this paper.
4. Note: A CWP (C1522CW002L) project for the upgrade of Guildhall East Wing BEMS controls was approved for £185,000 of funding expenditure in 2021/22, (the fund now has a balance of £169,455 to spend).
5. Note: CWP (R0722CW003L) project for the integration of LMA heat pump system into the BEMS was approved for £8,000 of funding expenditure in 2021/22.

**The following revised estimated project costs and funding breakdown is based on approval of the requested decisions set out in this paper (Option 3).**

The revised total estimated cost of the 'BEMS Upgrade Project-CPG Estate – Phase 1' is £1,311,378 (incl. risk), £1,190,355 (excl. risk). Approval was previously given for Phase 1 to be delivered in two stages, with stage 1 which relates to the Guildhall being delivered as part of the 'Guildhall Ventilation PSDS Project', see background papers.

Revised estimated project cost breakdown, incl. risk:

6. Stage 1: £332,391 whose scope includes BEMS relating to the Guildhall ventilation works. Funded from £166,195.50 City Fund and £166,195.50 City's Cash of the funding provisionally allocated to the 'BEMS Upgrade Project-CPG Estate – Phase 1'.
7. Stage 2: Cost of £978,987 composed of:
  - a) £146,200 for London Metropolitan Archives.  
Funded from:
    - o £138,200 from City Fund amount provisionally allocated to the 'BEMS Upgrade Project-CPG Estate – Phase 1'.

	<ul style="list-style-type: none"> <li>○ £8,000 from CWP funds within the CWP Fund 'R0722CW003L'</li> </ul> <p>b) £115,500 for Walbrook Wharf, to be funded wholly from City Fund amount provisionally allocated to the 'BEMS Upgrade Project-CPG Estate – Phase 1'.</p> <p>c) £717,287 for Guildhall East Wing. Funded from:</p> <ul style="list-style-type: none"> <li>○ £169,455 - the balance of the CWP fund C1522CW002L.</li> <li>○ £229,200 of the unrequired central funding (£114,600 City Fund and £114,600 City's Cash) from the 'Energy Reduction Programme – Phase 1'.</li> <li>○ £318,631 composed of £159,316 City Fund and £159,315 City's Cash, from the funding provisionally allocated to the 'BEMS Upgrade Project-CPG Estate – Phase 1' at Gateway 2.</li> </ul> <p>The total energy and maintenance savings arising from the system upgrades is estimated to be £22,335/yr, based on current energy prices.</p> <p>A budget of £16,867 (excluding risk), was approved in Apr-21 as part of the GW2 paper for the 'BEMS Upgrade Project-CPG Estate – Phase 1, see background papers.</p> <p>Commitments to date against this budget are £1,916, comprised of:</p> <ul style="list-style-type: none"> <li>• £1,029 for IT structure cabling survey at Guildhall East wing and London Metropolitan Archive.</li> <li>• £887 for Asbestos survey at Guildhall East wind, LMA and Walbrook Wharf.</li> </ul> <p><b>Costed Risk Provision requested for this Gateway: £0</b> (as detailed in the Risk Register – Appendix 2)</p>
<p><b>4. Issue description</b></p>	<p>1. The estimated total project cost, including risk, for completion of the full scope of works for the BEMS upgrade project Phase 1 (stage 2) is £406,608 (incl. risk) greater than the remaining central funding which was provisionally allocated to the project.</p> <p>The increase in cost is due to:</p> <ul style="list-style-type: none"> <li>• Initial high-level system surveys severely underestimated the cost of hardware and software upgrade, particularly at GH EW.</li> <li>• Further investigation has revealed the system upgrade requires significant IT network infrastructure investment to support new BEMS, this was not allowed for in original project funding request.</li> </ul>

	<ul style="list-style-type: none"> <li>• Greater contingency should have been requested at earlier gateways to mitigate risk of higher project cost, such as more expensive equipment or unforeseen essential enabling works.</li> </ul>
<p><b>5. Options</b></p>	<ol style="list-style-type: none"> <li>1. Note: a CWP (C1522CW002L) project for the upgrade of Guildhall East Wing BEMS controls was approved for £185,000 of funding expenditure in 2021/22.</li> <li>2. Note: CWP (R0722CW003L) project for the integration of LMA heat pump system into the BEMS was approved for £8,000 of funding expenditure in 2021/22.</li> <li>3. Note: due to a reduction in scope the 'Energy Reduction Programme – Phase 1' has unrequired funding, and as set out in a separate gateway 2 issue report for that project, it is recommended this funding is considered for reallocation to the 'BEMS upgrade project-CPG Estate Phase 1 (stage 2)' project if required.</li> </ol> <p><b>The following sets out the options to meet the funding shortfall for the 'BEMS upgrade project-CPG Estate Phase 1 (stage 2)' project.</b></p> <ol style="list-style-type: none"> <li>4. Option 1. Not recommended. Reduce the scope of the project so the revised estimated total cost (incl. risk) is within the amount provisionally allocated. This will involve significantly reducing the scope of works in Guildhall East Wing to address of some the most critical BEMS hardware.</li> <li>5. Option 2. Not recommended. Allocate the existing CWP funds for project C1522CW002L - East Wing BMS controls upgrade (balance of £179,505) and CWP funds for project R0722CW003L for the BEMS integration of LMA heat pump system (£8,000) to the 'BEMS Upgrade Project-CPG Estate – Phase 1' This will still require the scope of the works to the Guildhall East Wing to be reduced to only address the most essential control systems - life safety and load shedding/electrical generator monitoring. Obsolete, unsupported hardware would remain, controlling business critical such as heating, cooling &amp; ventilation systems serving the Guildhall Art Gallery and CoLP offices.</li> <li>6. Option 3. Recommended. Increase the funding allocation to meet the full scope of works for the project through: <ul style="list-style-type: none"> <li>• Allocate the CWP fund C1522CW002L - East Wing BMS controls upgrade (balance of £179,505) and the CWP fund</li> </ul> </li> </ol>

	<p>R0722CW003L - BEMS integration of LMA heat pump system (£8,000)</p> <ul style="list-style-type: none"> <li>• Reallocation of £229,200 of the unrequired central funding (£114,600 City Fund and £114,600 City's Cash) from the 'Energy Reduction Programme – Phase 1'.</li> </ul> <p>7. Reasons for recommending option 3:</p> <ul style="list-style-type: none"> <li>• This BEMS upgrade project is vital for ensuring the energy efficient operation of the sites, and without an increase in funds to meet its budget the scope of works will need to be reduced.</li> <li>• The CWP project C1522CW002L is already allocated for addressing end-of-life Guildhall East Wing BEMS controls and therefore the allocation of its funding towards this project is within scope of that objective.</li> <li>• CWP <b>project</b> R0722CW003L is already allocated for the BEMS integration of LMA heat pump system (identified as an energy efficiency measure) and therefore the allocation of its funding towards this project is within scope of that objective.</li> <li>• The BEMS upgrade project is anticipated to enabling significant energy savings and therefore this supports the objectives of the 'Energy Reduction Programme – Phase 1'</li> </ul>
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### **Appendices**

<b>Appendix 1</b>	Project Coversheet
<b>Appendix 2</b>	Risk Register
<b>Appendix 3</b>	Projects budget breakdown

### **Background documents (Available on request)**

- Gateway 2 BEMS Upgrade Project-CPG Estate – Phase 1
- Gateway 3/4 BEMS Upgrade Project-CPG Estate – Phase 1 (Stage 1)
- Gateway 2 (issue) Energy Reduction Programme – Phase 1

### **Contact**

<b>Report Author</b>	Brendan Crowley
<b>Email Address</b>	<a href="mailto:Brendan.crowley@cityoflondon.gov.uk">Brendan.crowley@cityoflondon.gov.uk</a>
<b>Telephone Number</b>	0739560031