

**Options Appraisal Matrix**

<b>Option Summary</b>	<b>Option 1 (West Wing Like-for- Like replacement)</b>	<b>Option 2 (Centralised Plant)</b>	<b>Option 3 (Pause the project and revise the project brief)</b>	<b>Option 4 (West Wing Like-for-like replacement &amp; cooling tower refurb)</b>
<b>1. Brief description of option</b>	<ul style="list-style-type: none"> <li>• Replacement of the WW (&amp;EW) chillers and cooling towers to a more modern system.</li> <li>• Continue to meet current demands</li> </ul>	<ul style="list-style-type: none"> <li>• Consolidation of all chiller equipment and services into one plant centre serving the NW, EW &amp; WW.</li> <li>• Location of plant centre TBC.</li> </ul>	<ul style="list-style-type: none"> <li>• Stand down the design team to consider the parallel workstreams currently underway</li> <li>• Assess the impact of the future masterplan options for the Guildhall.</li> <li>• Confirm and update the project brief incorporating the latest information and project requirements to ensure correct solution.</li> <li>• Reengage the design team once this is known and proceed through the GW process.</li> </ul>	<ul style="list-style-type: none"> <li>• Replacement of WW (&amp;EW) chillers to a more modern system</li> <li>• Refurbishment of the existing cooling towers</li> <li>• Continue to meet current demands.</li> </ul>
<b>2. Scope and exclusions</b>	<ul style="list-style-type: none"> <li>• NW chillers remain in place and continue to serve the NW areas. No</li> </ul>	<ul style="list-style-type: none"> <li>• Water-cooled vs Air-cooled TBC following further analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Project to re-enter into the capital building cycle with confirmed and consolidated brief.</li> </ul>	<ul style="list-style-type: none"> <li>• Review and refurbish the existing cooling towers to meet demands of new</li> </ul>

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	update to these assets.	<ul style="list-style-type: none"> <li>Location of plant centre TBC.</li> </ul>	<ul style="list-style-type: none"> <li>Revisit budgets to confirm allocation depending on confirmed scope.</li> </ul>	<p>chiller system. No renewal.</p> <ul style="list-style-type: none"> <li>NW chillers remain in place and continue to serve the NW areas. No update to these assets.</li> </ul>
<b>Project Planning</b>				
<b>3. Programme and key dates</b>	<ul style="list-style-type: none"> <li>GW 4 - Nov 21</li> <li>GW4C – March 22</li> <li>GW5 – Sept 22</li> </ul>	Same as option 1	<ul style="list-style-type: none"> <li>Revise Brief and seek Chief Officer sign off July 21.</li> <li>Capital Bidding Cycle – August 21 – January 22.</li> <li>Following approval, Gateway 2 March 22; Outlined Options - Gateway 3 July 22.</li> </ul>	<ul style="list-style-type: none"> <li>Same as option 1</li> </ul>
<b>4. Risk implications</b>	<ul style="list-style-type: none"> <li>NW chillers are approaching end of life. If they are not upgraded as part of these works then there will be further works in the short/medium-term.</li> </ul>	<ul style="list-style-type: none"> <li>Project budget insufficient</li> <li>Guildhall Masterplan could include the demolition and redevelopment of the Guildhall which would render the project output obsolete.</li> </ul>	<ul style="list-style-type: none"> <li>EW &amp; WW chillers are currently at end of life and are costing c. 30-50k p.a. to maintain. Risk of failure in the coming years could lead to expensive interim solutions or</li> </ul>	<ul style="list-style-type: none"> <li>Risk that the refurbished cooling towers lack efficiency. Risk of not meeting decarbonisation goals</li> <li>Risk of failure of existing chillers</li> </ul>

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	<p>No realisation of efficiencies of scope/scale.</p> <ul style="list-style-type: none"> <li>• Guildhall Masterplan could include the demolition and redevelopment of the Guildhall which would render the project output obsolete.</li> </ul>	<ul style="list-style-type: none"> <li>• Project programme potentially longer which would put pressure on the EW &amp; WW chillers which are at end of life.</li> </ul>	<p>failure to meet internal conditions.</p> <ul style="list-style-type: none"> <li>• Programme delays to the chiller replacement project</li> <li>• Potential additional design team fees for re-engagement and revisiting previously completed work.</li> </ul>	<ul style="list-style-type: none"> <li>• Guildhall Masterplan could include the demolition and redevelopment of the Guildhall which would render the project output obsolete.</li> <li>• NW chillers are approaching end of life. If they are not upgraded as part of these works then there will be further works in the short/medium-term. No realisation of efficiencies of scope/scale.</li> </ul>
<b>5. Stakeholders and consultees</b>	<ul style="list-style-type: none"> <li>• Chamberlains,</li> <li>• Corporate Property,</li> <li>• Town Clerks,</li> <li>• City Surveyors, including: <ul style="list-style-type: none"> <li>○ Energy Team;</li> <li>○ PPG;</li> <li>○ FM &amp; R&amp;M</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Same as option 1</li> </ul>	<ul style="list-style-type: none"> <li>• Same as option 1 but also including Citigen</li> </ul>	<ul style="list-style-type: none"> <li>• Same as option 1</li> </ul>

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	<ul style="list-style-type: none"> <li>• <i>Departments occupying or using the Guildhall.</i></li> </ul>			
<b>6. Benefits of option</b>	<ul style="list-style-type: none"> <li>• <i>Project budget approved and acceptable CAPEX of the 2 replacement options (compared to option 2)</i></li> <li>• <i>Able to quickly replace the EW and WW chillers to bring up to standard and meet the requirements of the Guildhall complex.</i></li> <li>• <i>Upgrade to the EW/WW chillers would provide a more efficient water-cooled system</i></li> <li>• <i>No spatial issues as would sit within the same plant areas.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>The most energy efficient solution being proposed. Able to upgrade all 'inefficient' assets to modern standard. This would meet the Citys decarbonisation aspirations.</i></li> <li>• <i>Reduced OPEX outlay as all systems would be upgraded.</i></li> <li>• <i>Futureproofing the cooling requirements of the Guildhall complex, bringing the systems up to standard and securing a c. 20 year life.</i></li> <li>• <i>New system would not be reliant on the soon to be redundant refrigerant</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Will allow the City to completely review and confirm requirements and project brief in the context of wider workstreams and aspirations.</i></li> <li>• <i>No redundant expenditure pursuing an upgrade to the existing systems in the event they become obsolete.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Project budget approved and lowest CAPEX of the 3 replacement options.</i></li> <li>• <i>Able to quickly replace the EW and WW chillers to bring up to standard and meet the requirements of the Guildhall complex.</i></li> <li>• <i>Upgrade to the EW/WW chillers would provide a more efficient water-cooled system</i></li> <li>• <i>No spatial issues as would sit within the same plant areas.</i></li> <li>• <i>Further reduction in cost compared to option 1.</i></li> </ul>

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<b>7. Disbenefits of option</b>	<ul style="list-style-type: none"> <li>Does not address the NW chillers which are approaching end of life. Both in terms of efficiency and ongoing OPEX to keep the NW chillers running.</li> <li>Will not realise the maximum efficiencies and decarbonisation targets.</li> <li>NW chillers would be reliant on the soon to be redundant refrigerant. Would likely see an uplift in ongoing regular maintenance.</li> </ul>	<ul style="list-style-type: none"> <li>Project budget will need to be reviewed and potentially increased to meet requirements. Most CAPEX outlay.</li> <li>Spatial requirements are most intensive to accommodate the full footprint of the plant centre.</li> </ul>	<ul style="list-style-type: none"> <li>Significant delay to programme</li> <li>Potential for faults with EW &amp; WW chiller systems if not addressed.</li> <li>Abortive design team fees.</li> </ul>	<ul style="list-style-type: none"> <li>Does not address the NW chillers which are approaching end of life. Both in terms of efficiency and ongoing OPEX to keep the NW chillers running.</li> <li>Will not realise the maximum efficiencies and decarbonisation targets.</li> <li>NW chillers would be reliant on the soon to be redundant refrigerant. Would likely see an uplift in ongoing regular maintenance.</li> <li>Does not address cooling towers which are out of date. Only refurbishment.</li> </ul>
<b>Resource Implications</b>	<b>Option 1 (West Wing Like-for- Like replacement)</b>	<b>Option 2 (Centralised Plant)</b>	<b>Option 3 (Pause the project and revise the project brief)</b>	<b>Option 4 (West Wing Like-for-like replacement &amp; cooling tower refurb)</b>

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<b>8. Total estimated cost</b>	Total estimated cost is £3,918,000 (excluding £428,000 of CRP)	<b>Option 2a</b> (Air cooled) Total estimated cost £3,538,000 (excluding £895,000 of CRP) <b>Option 2b</b> (water cooled) £6,780,000 (excluding £895,000 of CRP)	Unknown at this stage and once brief has been revised and approved then initial costing can be put forward.	To be determined (TBD) once condition of cooling towers have been established.
<b>9. Funding strategy</b>	To be determined (TBD)  The current funding source of the approved 3m is split across three funds: 1. City Fund £1.860m; 2. City Cash £0.990m, 3. BHE £0.150m)	To be determined (TBD)	To be determined (TBD)	To be determined (TBD)
<b>10. Investment appraisal</b>	To be determined (TBD)	To be determined (TBD)	To be determined (TBD)	To be determined (TBD)
<b>11. Estimated capital value/return</b>	N/A at this point	N/A at this point	N/A at this point	N/A at this point
<b>12. Ongoing revenue implications</b>	To be determined (TBD)	To be determined (TBD)	To be determined (TBD)	To be determined (TBD)

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<b>13. Affordability</b>	<i>This option is overbudget by £1,532,380</i>	<i>This option is overbudget between £1,274,672 (Option 1) or £4,516,380 (Option 2)</i>	<i>N/A</i>	<i>This option is overbudget by £101,380</i>
<b>14. Legal implications</b>	<i>None</i>	<i>None</i>	<i>None</i>	<i>None</i>
<b>15. Corporate property implications</b>	<i>Consolidated site chiller options would consider early replacement of other site chiller plant. Chiller plant locations will need to be considered against site plans.</i>	<i>Consolidated site chiller options would consider early replacement of other site chiller plant. Chiller plant locations will need to be considered against site plans.</i>	<i>To be determined (TBD)</i>	<i>Cooling tower would need to be replaced as a separate project.</i>
<b>16. Traffic implications</b>	<i>Plant installation is likely to require a partial short-term road closure of either Basinghall Street and/or Aldermanbury.</i>	<i>Plant installation is likely to require a partial short-term road closure of either Basinghall Street and/or Aldermanbury.</i>	<i>To be determined (TBD)</i>	<i>Plant installation is likely to require a partial short-term road closure of either Basinghall Street and/or Aldermanbury.</i>
<b>17. Sustainability and energy implications</b>	<i>New water-cooled chillers to serve the WW &amp; EW would be more energy efficient than the existing chillers, but relatively inefficient air-cooled chillers serving the NW would be retained.</i>	<i>A centralised water-cooled chiller solution is would be the most efficient option overall, but a centralised air-cooled chiller solution would also perform well as a result of replacing the existing inefficient NW chillers.</i>	<i>To be determined (TBD)</i>	<i>As with Option 1, new water-cooled chillers to serve the WW &amp; EW would be more energy efficient than the existing chillers, but relatively inefficient air-cooled chillers serving the NW would be retained. In comparison to</i>

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				<i>Option 1 there would be some embodied energy savings as a result of refurbishing rather than replacing the cooling towers.</i>
<b>18. IS implications</b>	<i>None.</i>	<i>Same as option 1</i>	<i>None.</i>	<i>None.</i>
<b>19. Equality Impact Assessment</b>	<i>An equality impact assessment will not be undertaken.</i>	An equality impact assessment will not be undertaken.	An equality impact assessment will not be undertaken.	An equality impact assessment will not be undertaken.
<b>20. Data Protection Impact Assessment</b>	<i>The risk to personal data is less than high or non-applicable and a data protection impact assessment will not be undertaken.</i>	The risk to personal data is less than high or non-applicable and a data protection impact assessment will not be undertaken.	The risk to personal data is less than high or non-applicable and a data protection impact assessment will not be undertaken.	The risk to personal data is less than high or non-applicable and a data protection impact assessment will not be undertaken.
<b>21. Recommendation</b>	<i>Not recommended</i>	<i>Recommended</i>	<i>Not recommended</i>	<i>Not recommended</i>