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Committees: Corporate Projects Board - for decision under Urgency prior to meeting Projects Sub - for decision Corporate Asset Sub-Committee – for decision	Dates: Urgency for CPB 22 April 2020 01 April 2020
Subject: Guildhall Cooling Plant Replacement Unique Project Identifier: 12214	Gateway 2: Project Proposal Complex
Report of: City Surveyor Report Author: Mark Donaldson	For Decision
<h1>PUBLIC</h1>	

Recommendations

1. Next steps and requested decisions	Project Description: Provide a long term solution to meet the cooling needs of the Guildhall Complex in the most cost-effective and environmentally beneficial way.			
	Next Gateway: Gateway 3 - Outline Options Appraisal (Complex)			
	Next Steps:			
	Commission project manager, engineers, and cost consultants to undertake site surveys, identify options and appraise based on whole-life-costs, and produce supporting concept designs in order to recommend a short list of viable options for further detailed appraisal at Gateway 4.			
	Requested Decisions:			
	<div>1. That budget of £141,000 (excluding risk) is approved to reach the next Gateway and will be split across the three funds on an appropriate basis;</div> <div>2. Note total estimate cost range of £3.924m (excluding risk) to £4.324m (including £400k of costed risk post-mitigation) based on the most expensive option, and will be split across the three funds on an appropriate basis;</div> <div>3. That a Costed Risk Provision of £33,200 is approved to reach the next gateway (to be drawn down via delegation to Chief Officer in consultation with the Chamberlain) and will be split across the three funds on an appropriate basis</div>			
2. Resource requirements to reach next Gateway	Item	Reason	Funds/ Source of Funding	Cost (£)
	Project Manager	Specialist consultant engineer to manage Outline Appraisal	See below.	£25,000
	Quantity Surveyor	Outline cost plans and whole-life-cost analysis	See below.	£20,000

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	Mechanical & Electrical design	Options development and technical feasibility	See below.	£40,000
	Structural Engineer	Plant/solution impact on building structure	See below.	£10,000
	Surveys	Condition, asbestos, etc.	See below.	£40,000
	Staff costs	Client-side project management	See below.	£6,000
	Total		See below.	£141,000
<p>The above £141,000 total will be funded as detailed in box 1 above. Appointments for these consultants will be made in consultation with City procurement and in line with the City of London's procurement code.</p> <p>Costed Risk Provision requested for this Gateway: £33,200</p> <p>This is to cover the risk of the additional surveys being required and management of any asbestos found to enable the survey work. This is to be funded as detailed in box 1 above.</p>				
3. Governance arrangements	<ul style="list-style-type: none"> • Corporate Asset Sub-Committee. • Senior Responsible Officer: Dorian Price • The project will be managed by the City Surveyor's Major Projects Team. • A Project Manager will be allocated following GW2 approval and lead on subsequent Gateways and manage the project if approved. 			

Project Summary

4. Context	<p>4.1 The chillers which serve the West Wing and East Wing are at the end of their economical life and risk of failure is increasing.</p> <p>4.2 Some replacement parts are no longer available from the manufacturer.</p> <p>4.3 New regulations coming into force from January 2022 will restrict the availability of the refrigerants used by the all main chillers for the Guildhall Complex.</p> <p>4.4 The existing system is unable to meet cooling demands during very warm weather due to system design limitations.</p> <p>4.5 Maintenance cost of the cooling towers serving the chillers is currently £50k per year. Remedial chiller plant maintenance for 2019 cost £20k.</p>
5. Brief description of project	<p>5.1 Replace the West Wing chillers and consider options to consolidate chiller plant across the Guildhall site to provide a resilient, more efficient long-term solution. The scope also includes consideration of heat rejection system (i.e. cooling towers) and integration to existing chilled water distribution systems.</p>
6. Consequences if project not approved	<p>6.1 Increasing risk of poor performance, failure and extended down-time of chiller plant resulting in inability to maintain environmental control in the Art Gallery (and stores), Amphitheatre, and significant risk of exceeding comfortable conditions within offices (East and West Wings) and public spaces (Business Library, City Centre).</p> <p>6.2 Continued high maintenance cost and risk of cost increases and down-time due to increased component failures from aging plant.</p> <p>6.3 After January 2022 the chillers will be reliant on recycled refrigerant which will increase operational costs and could affect performance.</p> <p>6.4 Increased energy consumption, costs and carbon emissions.</p>

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7. SMART project objectives	<p>7.1 The West Wing chillers are replaced by Feb-22 if possible.</p> <p>7.2 The project is delivered within budget.</p> <p>7.3 Options for a consolidated site-wide cooling solution are appraised.</p> <p>7.4 Reliable cooling performance that meets needs for supplied services.</p> <p>7.5 Throughout the project works, maintain environmental conditions within site areas in accordance to their needs.</p> <p>7.6 Minimise disruption from project works to site occupants and the public.</p> <p>7.7 Significant energy savings compared to the existing system.</p> <p>7.8 Minimise the carbon emissions and overall global warming impact.</p> <p>7.9 Lower annual maintenance requirements and associated costs.</p> <p>7.10 Improved resilience of cooling supplied services.</p> <p>7.11 Compliance with energy and refrigerant regulation requirements.</p> <p>7.12 Flexibility to allow for meeting future increased cooling needs.</p>
8. Key benefits	<p>8.1 Cooling supply which satisfies long-term site needs.</p> <p>8.2 Compliance with existing and foreseeable regulations.</p> <p>8.3 Lower whole-life chiller plant costs.</p> <p>8.4 Best practice environmental solution which significantly contribute towards City of London Corporation energy and carbon targets.</p>
9. Project category	7b. Major renewals, typically of a one-off nature (supplementary revenue)
10. Project priority	A. Essential
11. Notable exclusions	None.

Options Appraisal

12. Overview of options	<p>12.1 GW3 shall appraise and recommend the scope for chiller replacement and the main technical chiller solution. This shall build on the studies already undertaken, see Appendix 3.4 and 3.5.</p> <p>12.2 Following GW3, GW4 shall appraise in more detailed the technical solutions for the selected scope to recommend a solution which best meets project objectives.</p> <p>12.3 Options will also consider implications from future site changes, including potential for cooling system distribution refurbishments.</p>
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Project Planning

13. Delivery period and key dates	<p>Overall project: minimum and maximum completion dates are: GW2 May-20, GW3 between Jul-20 to Jan-21; GW4 between Dec-20 to Jul-21, GW4c between Mar-21 to Feb-22, GW5 between Aug-21 and Jul-22, Completion between Feb-22 to Mar-23, GW6 between Aug-22 and Oct-23.</p> <p>Key dates: See Appendix 3 for additional details.</p> <p>Other works dates to coordinate: None.</p>
14. Risk implications	Overall project risk: Medium

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	<p>The project costed risk post-mitigation is £400,000.</p> <p>A Costed Risk Provision of £33,200 is requested to cover the management of any asbestos found to enable the survey work and the risk of the additional surveys being required.</p> <p>After mitigation actions it is anticipated the remaining major risks will be:</p> <ul style="list-style-type: none"> • Partial or complete failure of existing chiller plant prior to installation of replacement chiller plant. • Tender return costs higher than requested project budget. • Disruption to existing live services (e.g. Fire & Security) as a result of change-over. • Brexit impact - Labour shortage and / or materials shortage or delays with deliveries due to the impact of Brexit • External security threat, including terrorist activity. <p>Further information available within the Risk Register (Appendix 2)</p>
15. Stakeholders and consultees	Chamberlains, Corporate Property, Town Clerks, departments occupying or using the Guildhall.

Resource Implications

16. Total estimated cost	<p>Likely cost range (excluding risk): £1.114m - £3.924m</p> <p>The lower cost range is based on the option ('minimal in appendix 3.5 table 2) for replacing only the essential West Wing chillers with like-for-like (i.e. a reduced scope project) and the higher cost range is based on the option (3a in appendix 3.5 table 2) for consolidating chiller plant across the site (i.e. a broader scope project).</p> <p>The cost range has been updated from the Project Briefing to allow consideration of options beyond the replacement of the West Wing Chillers.</p> <p>Likely cost range (including risk): £1.514m - £4.324m</p>		
17. Funding strategy	Choose 1:	Choose 1:	
	Partial funding confirmed	Internal - Funded wholly by City's own resource	
	Funds/Sources of Funding		Cost (£)
	Central Funding: additional funding is requested (approved in principle)		£3m
	Total		£3m
<p>Resource Allocation Sub Committee meeting in December 2019 decided to allocate £3m in principle and will be split across the three funds on an appropriate basis. The release of funds is subject to approval by Resource Allocation Committee.</p> <p>If the cost (including risk) for the recommended option is anticipated to exceed the total identified funding, then either additional funding may be requested, or a fall-back option shall be recommended where the project scope is limited to essential plant replacement (West Wing chillers) only.</p>			

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18. Investment appraisal	Whole-life-cost assessment will be undertaken. This will assess all the main capital and revenue costs over the anticipated life of the replaced assets.
19. Procurement strategy/route to market	The consultant appointments will be made in line with the City's procurement code and prior to the procurement of the Works. When we have further sight of the requirement for the Work, a Procurement Options Report will be provided at the next Gateway.
20. Legal implications	20.1 None.
21. Corporate property implications	21.1 Consolidated site chiller options would consider early replacement of other site chiller plant. 21.2 Chiller plant locations will need to be considered against site plans.
22. Traffic implications	22.1 Plant installation is likely to require a partial short-term road closure of either Basinghall Street and/or Aldermanbury.
23. Sustainability and energy implications	23.1 Highest efficiency chillers, beyond compliance, should be considered. 23.2 Whole-system efficiency improvements should be considered. 23.3 Consolidating site-wide chiller plant could provide higher efficiencies.
24. IS implications	24.1 None.
25. Equality Impact Assessment	An equality impact assessment will not be undertaken.
26. Data Protection Impact Assessment	The risk to personal data is less than high or non-applicable and a data protection impact assessment will not be undertaken.

Appendices

Appendix 1	Project Briefing
Appendix 2	Risk Register
Appendix 3	Additional Project Details

Contact

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