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<p>Committees: Finance & Risk Committee of the Barbican Centre Board – for decision *Barbican Centre Board – for information Operational Property & Projects Sub Committee – for decision</p>	<p>Dates: 26 June 2023 12 July 2023 18 September 2023</p>
<p>Subject: Concert Hall 2016 refurbishment works. Phase 1 02100107 Phase 2 02800107 Unique Project Identifier: 11559</p>	<p>Gateway 6: Outcome Report Regular</p>
<p>Report of: Barbican Centre Report Author: Tram-Anh Gonin – Project Manager</p>	<p>For Decision</p>
<p>PUBLIC</p>	

Summary

<p>1. Status update</p>	<p>Project Description: This project consisted of the following phases:</p> <ul style="list-style-type: none"> ● Phase One: <ul style="list-style-type: none"> a) Overhaul stage riser mechanisms (including new controls, with back-up system along with new safety edges). b) Replace piano lift control system and installation of a robust safety rail to stage. ● Phase Two: <ul style="list-style-type: none"> ○ Projection & control room air-conditioning & ventilation upgrade. ○ Stage surface refurbishment/replacement ○ Dressing rooms and conductor’s room refurbishment. ● The refurbishment of the stage timber wall cladding (‘organ pipe’ feature panels) has been omitted at Gateway 1&2. <p>RAG Status: Amber (Amber at last report Committee) Risk Status: Amber (Amber at last report Committee)</p>
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	<p>Costed Risk Provision Utilised: N/A</p> <p>Final Outturn Cost: N/A</p>						
<p>2. Next steps and requested decisions</p>	<p>Requested Decisions:</p> <p>To note the lessons learned section of this report and approve formal closure of this project.</p>						
<p>3. Key conclusions</p>	<p>Key benefits of the project</p> <p>Since the delivery of the project, the music, engineering, and event departments have confirmed safer H&S operations with the piano lift, better continuity of projection operations during performances, and a better experience for front of house patrons and performers backstage.</p> <p>It demonstrated effective collaborative working with LSO and the artists ensuring the smooth operation of the Concert Hall.</p> <p>It has reduced the likelihood of reputational damage due to material failure and outdated equipment.</p> <p>Phase 1A and 2 were completed on time, but Phase 1B had to be deferred and a new cooling system had to be designed for Phase 2 as per the project timeline below. Budgetary adjustments were required to cover the above points.</p> <p>Project timeline</p> <p>Phase 1 was delivered by TAIT Technologies (formerly Stage Technologies) for the following works:</p> <table border="1" data-bbox="464 1615 1437 1861"> <thead> <tr> <th>Phase 1 works</th> <th>Completion date</th> </tr> </thead> <tbody> <tr> <td>Phase 1A - Refurbishment of the stage riser control system</td> <td>September 2016</td> </tr> <tr> <td>Phase 1B - Installation of the piano lift</td> <td>December 2017</td> </tr> </tbody> </table> <p>Phase 2 was delivered by Zodiac Contracts (formerly Bakers of Danbury) for the following works:</p>	Phase 1 works	Completion date	Phase 1A - Refurbishment of the stage riser control system	September 2016	Phase 1B - Installation of the piano lift	December 2017
Phase 1 works	Completion date						
Phase 1A - Refurbishment of the stage riser control system	September 2016						
Phase 1B - Installation of the piano lift	December 2017						

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	Phase 2 works	Completion date
	Refurbishment of the dressing rooms 1-5, conductor's room	September 2016
	Stage surface	September 2016
	Refurbishment of dressing rooms 6-21	September 2016
	Projection room ventilation and cooling system	September 2016
	Installation of the standalone cooling system	August 2018

Main Report

Design & Delivery Review

<p>4. Design into delivery</p>	<p>Phase 1: The design of the project did adequately prepare for the delivery of Phase 1. However, Phase 1B - installation of the piano lift was deferred until 2017, this was due to design error by the contractor.</p> <p>Phase 2 :The control room cooling system was installed, but it was not providing the output anticipated. This was because the consultant's design was superseded by adjustments made by the M&E team to make the system more energy efficient. A standalone cooling system therefore had to be designed for the control room.</p>
<p>5. Options appraisal</p>	<p>Gateway 3-4 (October 2015) outlined four possible options:</p> <ul style="list-style-type: none"> • Option 1: renew the piano lift, upgrade the projections room cooling system, replace the stage riser control system, re-sand and seal the stage surface, and refurbish the dressing rooms. • Option 2: as per option 1, except that instead of renewing the piano lift, it is fully serviced and its control system replaced. • Option 3: as per option 2, except that it allows for full refurbishment of dressing rooms 1 to 5 and the stage timber wall cladding. • Option 4: as per option 3 except that it includes the full refurbishment of dressing rooms 6 to 21. This constitutes the full scope of works envisaged at Gateway 1&2.

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	The recommended and agreed option of Option 1 allowed the project to meet its objectives and provide long term value.
6. Procurement route	<p>The specialist consultant was procured through a competitive tender process. Theatreplan Ltd was appointed on the basis of providing the full scope of services.</p> <p>The contractors were procured through a competitive tender process, managed by Commercial Services (formerly City Procurement).</p> <p>The procurement process worked well for the consultant and the contractors.</p> <p>There are few suppliers in the market that can deliver those specific services and works, and as a result, it tends to be the same suppliers that are invited to tender.</p>
7. Skills base	<p>The City of London project team had the required skills and experience to deliver this project.</p> <p>An external theatre specialist consultant was appointed to assist with the design, contract administration and delivery.</p>
8. Stakeholders	The Barbican Centre music, engineering and events departments as well as the LSO were key stakeholders and were heavily involved in the design and delivery .Stakeholders were engaged throughout the project lifecycle and were satisfied with the project outputs/outcomes.

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Variation Review

9. Assessment of project against key milestones	Item	Estimated date	Actual date
	Gateway 5 approval	March/April 2016	11 th May 2016
	Start on site	July 2016 (at G1-4)	August 2016
	Phase 1 Phase 2	Aug 2016 (at G5) Aug/Sep 2016 (at G5)	August 2016 August 2016
	Works Complete	September 2016 (at G1-4)	
	Phase 1A Phase 1B Phase 2	Sep 2016 (at issue report) Aug 2017 (at issue report) Sep 2016 (at issue report)	September 2016 December 2017 September 2016
	<p>The construction phase was delayed due to the issues with the piano lift and the control room cooling system.</p> <p>The Outcome Report has been delayed for several reasons but primarily due to a lack of resource.</p> <ul style="list-style-type: none"> - There have been a number of staff changes resulting in a lack of direct knowledge of the project post-completion. - The lock down of the Centre due to Covid forced the two remaining officers (one temporary PM and Assistant PM) to concentrate their efforts into delivering as many projects as feasible whilst the Centre was accessible for contractors due to the Centre being closed. - There is a backlog of Outcome Reports, due to lack of resource and turnover of staff, which require drafting and submitting. The current project team are working their way through these and have agreed a timetable with the Corporate Programme Office for when these reports will go to committee. 		
10. Assessment of project against Scope	<p>Change to scope</p> <p>The refurbishment of the stage timber wall cladding ('organ pipe' feature panels), originally included in the Gateway report 1 & 2 was omitted due to budgetary constraints in Gateway 3 & 4. The rest of the scope remained unchanged from Gateway 1 to Gateway 5.</p>		

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	<p>Other changes during delivery</p> <p>In Phase 1, due to a design error by the Phase 1 contractor, the manufacture and installation of the piano lift was not possible in 2016 and its replacement deferred until August 2017.</p> <p>In Phase 2, the new cooling system installed by Phase 2 contractor could not provide adequate cooling during the winter. The design had to be modified to take into account that the Barbican Centre decommissions its chilled water system during winter. A new standalone cooling system had to be designed and installed, as outlined in the Issue report from May 2017.</p>
<p>11. Risks and issues</p>	<p>CRP</p> <p>The use of CRP was introduced after the last report to Committee. If we had CRP at the time, it would have helped mitigate the delays for the changes in scope and for the discovery of asbestos during the construction phase.</p> <p>Unidentified risks</p> <ul style="list-style-type: none"> • The discovery of asbestos was identified in Gateway 5, however this risk has been mitigated through a refurbishment survey. • Changes to scope. • Extension of time.
<p>12. Transition to BAU</p>	<p>The project had a clear plan for transfer to business as usual, working around the dark period for the concert hall, and for the ongoing maintenance of the lift and the cooling system.</p>

Value Review

<p>13. Budget</p>	<table border="1"> <tr> <td data-bbox="470 1559 759 1637"><i>Estimated Outturn Cost (G2)</i></td> <td colspan="2" data-bbox="759 1559 1447 1637"> Estimated cost (including risk): £680,000 Estimated cost (excluding risk): £680,000 </td> </tr> </table>			<i>Estimated Outturn Cost (G2)</i>	Estimated cost (including risk): £680,000 Estimated cost (excluding risk): £680,000	
	<i>Estimated Outturn Cost (G2)</i>	Estimated cost (including risk): £680,000 Estimated cost (excluding risk): £680,000				
		<p><i>At Authority to Start work (G5) – May 2016</i></p>	<p><i>At Issue Report – May 2017</i></p>	<p><i>Final Outturn Cost</i></p>		
<p><i>Fees</i></p>	<p><i>£99,500</i></p>	<p><i>£105,972</i></p>	<p><i>£135,370</i></p>			
<p><i>Staff Costs</i></p>	<p><i>£30,000</i></p>	<p><i>£30,000</i></p>	<p><i>£0</i></p>			

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		<i>At Authority to Start work (G5) – May 2016</i>	<i>At Issue Report – May 2017</i>	<i>Final Outturn Cost</i>
	<i>TAIT technologies UK (formerly Stage technologies) – Phase 1 works</i>	<i>£338,152</i>	<i>£342,601.50</i>	<i>£275,189.50</i>
	<i>Zodiac Contracts (formerly Bakers of Danbury) – Phase 2 works</i>	<i>£284,650.50</i>	<i>£311,599.70</i>	<i>£373,334.23 (incl. £44,000 raised on revenue AC112-10800)</i>
	<i>Furniture Purchases</i>	<i>£18,743.50</i>	<i>£16,799.80</i>	<i>£14,988.87</i>
	<i>Asbestos refurbishment survey</i>	<i>£2,875</i>	<i>-</i>	<i>£1,320</i>
	<i>Provisional allowance for asbestos remedial works</i>	<i>£5,000</i>	<i>-</i>	<i>-</i>
	<i>Fire system</i>	<i>-</i>	<i>-</i>	<i>£2,632.46</i>
	<i>Other contingency</i>	<i>-</i>	<i>£7,000</i>	<i>-</i>
	Total	£778,921	£813,973	£802,835 (incl. £44,000 raised on revenue AC112-10800)
	Please confirm whether the Final Account for this project has been verified.			
	Yes			
14. Investment	Not applicable			
15. Assessment of project against	Phase 1 and Phase 2 works were successfully managed such that both phases were able to progress in a safe manner despite proximity.			

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<p>SMART objectives</p>	<p>Cooperation and collaboration in relation to Health and Safety between two separate contractors with Phase contractor acting as Principal Contractor.</p> <p>However, the project was not completed on time nor on budget:</p> <ul style="list-style-type: none"> - The piano lift installation was deferred until 2017 due to a design error by contractor. - A new standalone cooling system in the control room had to be designed and installed in 2018. - Three budgetary adjustments were needed to cover the above points to a total of £68,152, however savings in other parts of the construction meant that the final overall increase in budget was +£23,914.
<p>16. Key benefits realised</p>	<ol style="list-style-type: none"> 1. A safe operational piano hoist and stage lift system controls during performances. 2. Continuity of projection room/ control room equipment operation during concerts. 3. Presentation of a professional image to patrons and performers and continue to attract world class events.

Lessons Learned and Recommendations

<p>17. Positive reflections</p>	<p>Clear and effective communication between the project team and stakeholder ensured clarity on decisions made and project progress.</p> <p>Detailed planning and programming helped to ensure a swift transition from BAU to construction phase and then back to BAU.</p>
<p>18. Improvement reflections</p>	<p>Preparation of a clearer brief and more specific instructions which would have prevented consultant designing a system that did not reflect changes made to the operation of the cooling system. This resulted in delays and a new system being designed.</p> <p>Record keeping is essential for future officers to have clear understanding of why decisions have been made.</p> <p>The Barbican Centre has since restructured and employed an Engineering Services Manager. This better enables technical issues to be relayed into the project brief.</p>

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	Progress against project timescales is now monitored to allow for proactive and reactive actions to be taken by the project manager.
19. Sharing best practice	The lessons learnt have been outlined in this report for future reference.
20. AOB	N/A

Appendices

Appendix 1	N/A
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Contact

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