

<b>Committees:</b> Corporate Projects Board <i>[for information]</i> Projects Sub <i>[for decision]</i> Housing Management & Almshouses Sub <i>[for decision]</i>	<b>Dates:</b> 08 July 2020 21 October 2020 30 September 2020
<b>Subject:</b> Concrete testing & repairs to Golden Lane and Middlesex Street Estates  <b>Unique Project Identifier:</b> 11404	<b>Gateway 6:</b> <b>Outcome Report</b> Regular
<b>Report of:</b> Director of Community & Children's Services <b>Report Author:</b> David Downing, Asset Programme Manager	<b>For Decision</b>
<b>PUBLIC</b>	

### Summary

<b>1. Status update</b>	<p><b>Project Description:</b> The reinforced concrete elements of the residential buildings and car parks of the Golden Lane and Middlesex Street Estates had been showing signs of deterioration as seen through areas of cracking and spalling on the external facing surfaces. A project was initiated to first survey and test the structures to identify the causes and extent of this deterioration and then secondly to deliver a programme of repairs based on the recommendations from the condition survey. The programme of concrete repairs is now complete.</p> <p><b>RAG Status:</b> Green (Green at last report to Committee)</p> <p><b>Risk Status:</b> Low (Low at last report to Committee)</p> <p><b>Costed Risk Provision Utilised:</b> £0</p> <p><b>Final Outturn Cost:</b> £1,129,029</p>
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<p><b>2. Next steps and requested decisions</b></p>	<p><b>Requested Decisions:</b>  <u><b>Projects Sub Committee and Housing Management &amp; Almshouses Sub Committee</b></u></p> <ol style="list-style-type: none"> <li>1. To note the content of this report,</li> <li>2. To note the lessons learnt,</li> <li>3. To authorise closure of this project.</li> </ol>
<p><b>3. Key conclusions</b></p>	<ol style="list-style-type: none"> <li>1. Works were completed within budget but not to the initial timescales envisaged.</li> <li>2. Following completion of the identified repairs, the external facing concrete elements of the estate in general are now in a satisfactory condition which is consistent with the age and exposure of the buildings. Our independent concrete corrosion specialist has confirmed that the vast majority of the external facing concrete surfaces of the residential blocks do not require further comprehensive testing for a period of 10-15 years, whereas the car parks - where concrete corrosion was more evident – would not require further testing for a period of 5-10 years.</li> <li>3. The contractor, ENGIE, who delivered both the testing and repair elements of this project, performed poorly at times and their failure to survey the site properly and to adequately manage their appointed hierarchy of subcontractors was at the detriment to the project. The direct appointment of a concrete repair specialist rather than one mediated via a larger contract management company is recommended for future works of this nature.</li> <li>4. The initial survey design, testing analysis and repair specification was supplied by industry leading specialist Dr John Broomfield. Dr Broomfield’s technical guidance throughout the project was invaluable and critical to the ultimately successful outcome.</li> </ol>

**Main Report**

**Design & Delivery Review**

<p><b>4. Design into delivery</b></p>	<p>The project design worked well. The comprehensive condition testing of the concrete post Gateway 2 allowed for a detailed repair specification to be drawn up and applied to a measured bill of</p>
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	<p>quantities for the subsequent repair contract post Gateway 5. The survey design, analysis of testing results and repair specification was supplied by industry leading concrete corrosion specialist Dr John Broomfield. Procuring separate testing and repair contracts did increase programme length but follows industry best practice and enabled proposed repairs to be independently verified. It also allowed for greater control of costs as a single contractor was not identifying their own repairs within a single contract.</p> <p>The project was combined at earlier Gateways with what at face value seemed similar concrete issues at the Barbican Estate. Although brought together to explore potential savings through economies of scale, little benefit was realised from this however as the three sites presented very different design issues which inevitably had to be handled separately from the condition survey tender stage onwards. Combining the design phases did not realise any cost savings and it is highly likely that if each was addressed separately throughout the process the overall programme length would have been shortened as a delay to one site would not necessarily have entailed a delay to the others.</p>
<p><b>5. Options appraisal</b></p>	<p>The selected option to procure a contractor to deliver a programme of repairs via open tender successfully delivered the projects objectives. No changes were required during project delivery.</p>
<p><b>6. Procurement route</b></p>	<p>Works were procured via open tender advertised on the capital esourcing portal.</p> <p>Procurement Reference: Prj_COL_9349</p>
<p><b>7. Skills base</b></p>	<p>The City of London project team had the required skills and experience to manage the delivery of the project. An external concrete corrosion specialist, Dr John Broomfield, was employed to define the testing requirements, analyse testing results, specify the repair methodology for identified repairs and oversee the enactment of those repairs.</p>
<p><b>8. Stakeholders</b></p>	<p>Stakeholder engagement was not straightforward for this project, particularly with regard to a number of challenges from Golden Lane Estate leaseholders as to whether the identified repairs should be recoverable via the service charge. There was also concern on Golden Lane Estate regarding the appointment of the contractor ENGIE following the significant increase in both expenditure and programme length of the Great Arthur House recladding project also carried out by this contractor on this Estate.</p>

## Variation Review

<b>9. Assessment of project against key milestones</b>	<p>The project progressed as expected throughout the concrete testing phase culminating in the approval of Gateway 4 on 17 February 2017.</p> <p>At Gateway 5 works were forecast to commence April 2018 and conclude October 2018. The delivery phase however took longer than anticipated, with works finishing on site in March 2019. This delay can be attributed in no little part to the poor performance of the main works contractor ENGIE which can be summarised as follows:</p> <ul style="list-style-type: none"><li>i. Their initial pre-contract surveys, on which their tendered price was founded, proved to be inadequate as their proposed access method for the west elevation of Crescent House (a combination of MEWPS, scissor lifts and cherry pickers) was not suitable to enact the repairs from in practice. Rather, full scaffolding of the entire west elevation was required which was time consuming to erect and dismantle. It should be noted that the additional cost of the scaffolding was borne solely by the contractor. It is surprising that this contractor initially failed to adequately design and cost an access method from which to enact the repairs to Crescent House as it was the same contractor who conducted the initial survey that identified the repairs to be completed in the first place.</li><li>ii. It took several months for the contractor to produce sample repairs for the Listed buildings of the Golden Lane Estate that were acceptable to the City's planning officers.</li><li>iii. Relationships between ENGIE and their cadre of subcontractors became strained which resulted in numerous poor quality repairs being completed which did not pass quality inspections. The contractor was required to remove and redo the deficient work until it met the satisfaction of the City's project management team. The cost of the additional time required to correct substandard work was again borne solely by the contractor.</li></ul>
<b>10. Assessment of project against Scope</b>	<p>The replacement of concrete balustrades and associated concrete repairs to Cullum Welch House on the Golden Lane Estate was removed from this project (prior to Gateway 4 via Issues Report dated 20/07/16) due to the far higher complexity of this work when compared to the far more prosaic repairs required for the rest of</p>

	<p>the estate. The works to Cullum Welch House progressed as a stand-alone project and will be subject to a separate Gateway 6 report.</p> <p>Repair works to the Golden Lane podium were also omitted from the project prior to Gateway 4 as the podium area was inaccessible due to the extended time recladding works to Great Arthur House took to complete.</p> <p>Concrete repair works to Great Arthur House were also omitted from this project at delivery stage as the identified remedial works had already been completed as part of the recladding project.</p>
<b>11.Risks and issues</b>	<p>The project proceeded as planned with no significant risks realised during the delivery phase bar the aforementioned issues with the performance of the main contractor and sub-contractors. This is largely attributable to the successful application of lessons learnt from previous projects which were incorporated into the project design and specification which greatly aided the management of the resultant repairs contract.</p> <p>Costed Risk Provision was not applicable to this project.</p>
<b>12. Transition to BAU</b>	<p>The repairs have a defect liability period of 36 months commencing from the date of practical completion. At the close of this period (June 2023), the ongoing maintenance of these repaired sections of concrete will transfer to the general Repairs &amp; Maintenance contract.</p>

**Value Review**

<b>13. Budget</b>	<table border="1"> <tr> <td><i>Estimated Outturn Cost (G2)</i></td> <td>Estimated cost (excluding risk): £2,587,500</td> </tr> </table>	<i>Estimated Outturn Cost (G2)</i>	Estimated cost (excluding risk): £2,587,500
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<p>The Gateway 2 projected cost was estimated in 2014 with no provision for cost inflation. The officers managing the project at this time are no longer with the City and the estimating methodology they used is not known. The Gateway 2 estimated also included a £600,000 sum for replacement balustrades for Cullum Welch House and a further £500,000 sum for podium repairs which were both omitted from the project. An adjusted Gateway 2 sum, for comparative purposes, would therefore be £1,487,500.</p>			

<b>Golden Lane Estate</b>		
	<i>At Authority to Start work (G5)</i>	<i>Final Outturn Cost</i>
<i>Fees</i>	£35,000	£18,123
<i>Staff Costs</i>	£65,000	£48,713
<i>Testing Contract</i>	£282,177	£282,177
<i>Repairs Contract</i>	£674,128	£609,575
<i>Costed Risk Provision</i>	£0	£0
<b>Total</b>	<b>£1,056,305</b>	<b>£958,588</b>

<b>Middlesex Street Estate</b>		
	<i>At Authority to Start work (G5)</i>	<i>Final Outturn Cost</i>
<i>Fees</i>	£10,000	£16,957
<i>Staff Costs</i>	£7,000	£7,440
<i>Testing Contract</i>	£31,000	£30,070
<i>Repairs Contract</i>	£112,327	£115,974
<i>Costed Risk Provision</i>	£0	£0
<b>Total</b>	<b>£160,327</b>	<b>£170,441</b>

<b>Project Total</b>		
	<i>At Authority to Start work (G5)</i>	<i>Final Outturn Cost</i>
<i>Fees</i>	£45,000	£35,080
<i>Staff Costs</i>	£72,000	£56,153
<i>Testing Contract</i>	£313,177	£312,247
<i>Repairs Contract</i>	£786,455	£725,549
<i>Costed Risk Provision</i>	£0	£0
<b>Total Expenditure</b>	<b>£1,216,632</b>	<b>£1,129,029</b>

A final retention payment is due to be made to the main contractor on expiry of the defects liability period in July 2022. The retention sums are included in the figures presented above.

There is a total underspend on the approved Gateway 5 budget of £87,603. Of this sum, £57,350 is accounted for by the omission from the contract of concrete repair works to Great Arthur House which were not required in this contract as had been undertaken during recladding works. The remainder is unused provision for fees and staff costs.

Final accounts have been subject to an independent verification check, undertaken by a suitably experienced officer within the relevant implementing department.

<b>14. Investment</b>	N/A
<b>15. Assessment of project against SMART objectives</b>	<p>1. The concrete has been tested to the satisfaction of a leading concrete corrosion specialist.</p> <p>2. The condition of the concrete elements of the structures is now known with appropriate future testing requirements identified and programmed into future schedules of work on the Keystone asset management database.</p> <p>3. Repairs to the concrete have been completed to the required specification, maintaining the buildings and extending their useful life whilst meeting heritage requirements for the Golden Lane Estate.</p>
<b>16. Key benefits realised</b>	A comprehensive testing programme has been carried out and all identified repairs have been completed. The concrete elements of the residential buildings and car parks have been confirmed to be in a satisfactory condition for their age and exposure.

### **Lessons Learned and Recommendations**

<b>17. Positive reflections</b>	<p>Works were satisfactorily completed and were delivered within the approved Gateway 5 budget. Where certain elements of the work had to be repeated due to substandard workmanship, this was done at the expense of the contractor.</p> <p>The consultant employed, Dr John Broomfield, is a world leader in the field of concrete corrosion. Dr Broomfield provided specialist advice throughout the project, drafted the repair specification and provided independent oversight of the repairs. The access to industry leading knowledge and experience throughout the project was a critical factor in its successful delivery particularly in terms of responding to leaseholder challenge with expert testimony and verifying the quality of repairs undertaken.</p>
<b>18. Improvement reflections</b>	<b>Procurement</b> – The procurement exercise for this project attracted only two bids which limited the options for the delivery of this project. A subsequent supplier engagement process carried out as part of the Cullum Welch balustrade replacement project (where similar issues were experienced in attracting sufficient suitable bids) revealed that SME concrete repair specialists who would be ideal for this type of

work were put off from bidding for local authority contracts due to the perceived tendency of those authorities to appoint predominantly on price typically to the large contract management companies. Pre-tender engagement with suitable specialist contractors is recommended for future projects to ensure that the City's commitment to the most economically advantageous tender rather than necessarily the cheapest is forefront to potential suppliers.

**Contractor Performance** – The repairs contractor had to be called back to redo a significant number of repairs carried out that were not up to the standard required. This had a negative impact on the overall programme. This was in no little part caused by a breakdown in relations between the main works contractor ENGIE and their repairs sub-contractor Gunite, who in turn poorly managed relations with their own subcontractors. The performance of the main contractor ENGIE reflects particularly poorly when compared to that of the specialist SME contractor who recently completed similar works on the Barbican Estate. By contrast, works there were completed to a consistently high standard with the diligence and commitment of the contractor noted. It is interesting to further note that staff costs expended during the delivery of the two projects (with broadly similar final contract values) were 73.7% higher for the Golden Lane/Middlesex Street project than for the Barbican Estate one. This additional amount (totalling £23,827) can be attributed to the increased level of monitoring, verifying and contractor management over and above that required at the Barbican Estate to ensure that completed repairs were to the standards specified. Directly appointing a specialist contractor rather than a large contract management company sitting atop a hierarchy of disengaged subcontractors, should be considered, if at all possible, for future projects of this nature.

**Project Design** – As stated above, little benefit was realised combining the project design phase with the similar works due to take place at the Barbican Estate. The three locations, although all with significant concrete elements in need of repair, presented very different design issues. Combining the design phases did not realise any cost savings (although did ensure a standardised and consistent approach) and it is highly likely that if each were addressed separately throughout the process the overall programme length would have been shortened.

<b>19. Sharing best practice</b>	<p>1. Dissemination of key information through team and project staff briefings. A standard approach to concrete repairs has been adopted by the Major Works team reflecting industry best practice.</p> <p>2. Lessons learned have been logged and recorded on departmental SharePoint.</p>
<b>20. AOB</b>	N/A

### **Appendices**

<b>Appendix 1</b>	Project Coversheet
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### **Contact**

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