

Cox's Walk footbridge repairs: Questions to Highways September 2020

General

- Do the Council agree that there is a cost effective solution to keeping the trees and repairing the bridge?

We submitted an outline design, financed by community crowdfunding, expecting to discuss it in detail and work with the Council towards an agreed end of a cost effective repair that saves the bridge and retains the oaks. Discussing the fine details of an engineering proposal is not appropriate to a local ward meeting. If no decision has been made are you willing to work with us and Aecom to get a cost effective repair to the bridge that retains the trees?

- Have Aecom (a multi billion pound design consultant) provided a value engineered solution that keeps the bridge and retains the trees?
- Are FMConway a suitable contractor to work around the trees? Should you not be engaging a specialist contractor who can deliver the Aecom design or our proposals that keeps the trees? The AECOM arboricultural report concluded 'Repair to the footbridge is likely achievable however, careful specialist techniques will be required to prevent damage to the two trees.'
- Why are you removing the trees in the first place? Who decided they needed to come out and why can you not work around them? Has the Aecom arboriculturalist visited site and reviewed our arboricultural report? Do they agree with our assessment on where the roots are located, if not why not? The AECOM arboricultural report was supportive of a design like the one we are proposing 'Piled foundations (e.g. screw piles) are likely to have the least impact on trees and would also protect against any future subsidence or heave.'

Response to C0347 Cox's Walk Footbridge Review of Alternative Design Proposal by AECOM

- **Executive summary** – has a specialist contractor looked at the site and been tasked with coming up with methodology in consultation with an arboriculturalist who can oversee the works? If not, why not?
- Has any desiccation testing been done on the underlying London Clay to look at the clay heave potential following removal of the trees? If not, why not?
- Why is there no mention of the CAVAT value of the trees, which is over £240,000 and should be included in any cost calculation, as the Council would expect from any other developer?
- What does it mean by "risks remained to trees during construction."? A competent contractor under the supervision of the arboriculturalist can mitigate the risks by being there and managing the works. What quantifiable risk are you referring to?
- **Costs** Due to the lack of engagement with Southwark we were never going to go to the expense of a detailed assured design so what specific methodology do you want us to detail? Would a specialist contractor used to working around trees not be a more suitable candidate to provide you with a detailed methodology?
- How can you make a guestimate of our proposals without talking to us? Your assumptions are meaningless without engaging us so dismissing our proposals without consultation is disappointing. It is a figure plucked out of the air. Please provide a breakdown of the £30k design fees to develop the scheme and we may be able to do the detailed design in a more cost efficient manner if Aecom are unable to provide a suitable, cost efficient engineering solution.

- **Aesthetics:** Please explain your comment “deleterious”. Our proposal is neither causing harm or damage and I would suggest that taking the trees out is the only aspect of this project likely to cause harm. Please explain the risk assessment carried out and the risk of heave by changing the equilibrium of the slope by removing the trees. Removing the trees has the potential for destabilising the bank, how does your scheme deal with this?
- **Construction of the West Abutment** “....debris to remain from the original construction...These could all impact the practicality of the screw pile.....” Yes but the point is you don’t know and by engaging with a specialist subcontractor and working with the arboriculturalist you can be prepared for what you find on site. We are happy to project manage the works for Southwark and engage a contractor who can plan to mitigate this.

Our report gives clear evidence and advice of how the screw piles can be implemented that takes into account the roots of the trees.

- **Detailed Engineering Design Comments** Explain “difficult to construct”? This is not difficult to construct for a specialist sub-contractor appropriately supervised. We can explain to you how works can be carried out in a safe and efficient manner.
- **Conclusion** How can you have cost certainty of our alternative proposal if you have not carried out a special investigation report? You look to have priced risk into it because of the need for more detail and we can work with you to mitigate the risk and achieve cost certainty.
- Please explain “a risk remains that there will be damage to the roots”? This is explained in our arboriculturalist report. Of course there will always be a risk and removing the trees introduces an inherent risk to the slope stability which you clearly have not quantified?
- Have any engineering checks been done to justify the assertion that screw piles would not be feasible to install inboard of the abutment wing walls and their likely stepped out foundations, for example a piled raft bankseat in a double cantilever arrangement with piles set inboard of the abutment wing walls to facilitate construction? If not, why not?
- Please explain “...the alternative design are unsatisfactory..” why? We have not set out to do Aecom’s job for them and this is an outline design which we can develop if you are interested .
- Your recommendations are not based on fact and are misleading. If you would actually talk to us about your reasons for removing the trees with evidence then we could help you come up with an agreeable solution. The principle should be to keep the trees and repair the bridge.
- **Introduction 1.1** Para 3 – 14 of the promised 15 replacement oaks were planted in Spring 2019. At least two have already died and not been replaced. What is the comparable value of the trees planted and over what time period do they replace the value of the 2 mature oak trees?
- **1.2 Documents Reviewed** As well as the documents reviewed by AECOM in their report of our alternative proposal, we had also submitted:
 - An arboricultural report
 - Design elevation
 - Design details
 - Responses to the Council’s request for further information on:
 - Preliminary design calculations and design assumptions
 - Details of design standards used in the design process
 - Any considerations of the buildability of the proposed design
 - Construction process
 - Site access considerations

- Site protection considerations
 - Details and calculations used for temporary works to be adopted during the construction of the permanent works (although appreciate this would be part of the detailed design process)
- Notes on how the current proposal addresses some of the issues that would appear to be present in the current structural arrangement which add some explanation / background to the drawings.
- The Report of the Cox's Walk Footbridge Repair Survey: *to determine how people used Cox's Walk and the footbridge and their preferences for its future*. A survey of over 160 users of Cox's Walk and the footbridge.

Why weren't these given to AECOM as part of their review, as they would have answered at least some of their comments/questions? For example the arboricultural report answers the comments/questions on working within the root protection areas of the oaks.

- 1.2 Para 2 – “The originator of the drawings is not identified.....” So what? The details of who has made the proposals is irrelevant, however the Council has been aware of his identity from the start. Of course the drawings are Preliminary as we are not tasked with doing Aecom's job for them who should be providing a cost efficient solution that keeps the trees and repairs the bridge. We are happy to provide further details if asked.

It should be noted that we have crowdfunded for our structural engineers time and provided outline proposals.

- **Review of Alternative Design**
- **2.2 Aesthetics** The Report of the Cox's Walk Footbridge Repair Survey showed that over 90% of respondents' first choice was for a bridge repair that retained the trees, even if it involved changes to the side walls. Nearly 70% of second preferences were for a new design of bridge, as long as the oaks were saved. There was virtually no support for the current preferred design.
- **Para 3** - Have any engineering checks been carried out to look at the relative stiffness of the timber truss and a 305x137 UC steel beam? If not, how can CA justify their assertion that the timber trusses on either side of the bridge do not participate in the global action of the bridge considering they have a higher stiffness and are connected directly via M20 bolts with no allowance for movement and considering the specific current state of disrepair of the bridge and the frequency that the timber framing has had to be replaced in the last 25 years (bolts yielded and extensive rot of timber at the bolted connections indicating overstressed connections).
- **2.3 Abutment Design** Screw piles damage to the tree roots is covered in the arboriculturalist report, have you read the report?
- “it is likely that the pile positions indicated would not allow installation of the screw piles....” You cannot confirm this until you have consulted with a specialist contractor but the advice we have had is that it is possible or we wouldn't have proposed it.
- **2.5 Superstructure** Para 6 - Is any photographic evidence available that proves CA's assertion that the thickness of the concrete slabs on the bridge are 200mm thick? If not, why not? Photos attached to show the true thickness.
- Final Para. – We do not agree with your statement. Why do CA think a crane would be required to install 5.3m long beams that weigh 250kg? Has the concept of using a scaffold at either side of the bridge with a frame gantry installed across the bridge been investigated? Temporary works could be provided to deliver the beam and we can work with you to confirm the methodology.
- **2.6 Cost Estimate** What are the details of this cost estimate for the Council's preferred scheme? We have provided a detailed Elemental Cost Plan, but have only been given ballpark figures for the Council's design. These have been variously stated as £216k, £232k and £280k in different documents.
- How much contingency has been included in this estimate?

- CA state that the costs prepared by them for our team's scheme are broadly comparable with Stockdale's. They are not. Only the minor elements such as concrete work and finishes are comparable. In all other areas they are high/very high in comparison.
- CA state that design fees should be added. That may be true but their own figures do not include design fees and the comment implies that this is a point of difference.

- **3. Conclusion** Your conclusion is nothing other than a guess and we have provided our cost estimate.

The design mitigates risk of damage to the tree roots. This is managed on site by an arboriculturalist.

- **Appendix B: Revised Cost Estimate for the Alternative Design**
- CA have included £38k for scaffolding. We recently received prices for a large 4 storey building scaffolding just off London Bridge. The cost was £25k. I struggle to see why a low level scaffold to this bridge would cost £38k. The difference is £24k.
- CA has allowed £30k to dismantle the trusses etc. At their own day rates this is 1000 hours, say 800 hours once skips and equipment are taken into account. 100 days work seems far too high. The difference is £21k.
- For the screw pile costs we used a written quote for a very similar system from another project. The CA figures seem far too high – the system is very simple, the equipment hand-held. I think their estimate is not well-informed and is far too high and I am confident that our figures are much closer to the actual cost. The difference is £21k
- CA has allowed a lump sum, without breakdown, of £68k for the steelwork. I have measured and described every piece of steel. There are 3 tonnes of steel. There are certainly numerous complexities to this steelwork which is why our figure equates to £8k per tonne (which is very expensive per tonne) but I think their estimate, especially without any justification is very high and unrealistic. The difference is £44k.
- CA make no specific allowance for preliminaries. Perhaps they are built into their other rates?
- We allowed £12k for restricted access costs ie 6 weeks for an operative and dumper attending on the deliveries. I doubt this is the final solution but, along with 15% preliminaries and 20% contingency it still seems a reasonable allowance. CA has applied 20% to all costs for restricted access. As noted above, was this applied when costing their own options? At £58k this equates to nearly 2000 hours, or say 1000 hours for an operative and small machine. I do think some premiums will apply to costs across the board due to the location, which is why I have kept my own rates quite generous. None of the CA rates appear tight, even before the 20% mark-up. This seems like an arbitrary and unreasonably high figure. Also the scale of works in both cases is similar so adding 20% would be inappropriate. Adding the same lump sum should be considered. The difference is £46k.
- CA has allowed £13k for some kind of temporary works system, plus 32m³ of excavation and concreting in connection with that system. I am not aware than our team's scheme requires that level of temporary works. The cost is £19k
- CA has allowed a total of 264m³ of excavation in connection with the abutment work. This is excessive by a factor of about 10. It appears to be an error. It adds £15k.

Save the Footbridge Oaks Campaign

18 Sept 2020