



<b>Comments on L495-RE-01 Thames water Sewer – Structural Impact Assessment. Rev.01</b>					
<b>Query No</b>	<b>Ref</b>	<b>Query</b>	<b>By</b>	<b>Response</b>	<b>Status</b>
1	<b>Disclaimer a</b>	It states that the report has been prepared for a specific client and to meet a specific brief. Please provide confirmation in writing that Thames Water (TW) may rely on the report.	Thames Water	Confirmed. Thames Water has been included on the Disclaimer in L495-RE-01. Rev02.	
2	<b>Section 1.1 a</b>	2 <sup>nd</sup> paragraph – The ground movements are due to change in ground stresses caused by the loadings from both the bearing piles and contiguous piled walls. Please clarify. Same comment applies to 2 <sup>nd</sup> paragraph of Section 1.3.	Thames Water	The ground movements are due to change in ground stresses caused by the loadings from both the bearing piles and contiguous piled walls. Amended on Sections 1.1 and Section 1.3 on L495-RE-01. Rev02.	
3	<b>Appendix A a</b>	Please confirm that the analysis has been conducted against the surveyed line and level and not the preliminary plan and sketch supplied in Appendix A. If not, please revise, the deviations in the alignment of the sewer shown in the CCTV survey needs to be accounted for. (JL - 07/01/15)	Thames Water	<p>The analysis has been carried out based on a conservative sewer position. It has been assumed the sewer is 4m away from the basement line with the sewer invert at 13.9mOD. Note this is around 1m deeper than the actual sewer position and therefore the analysis overestimates movements (note all the loads are applied below the sewer elevation and therefore the modelled sewer is closer to the loads).</p> <p>Note as well the analysis has been carried out with conservative ground parameters and the software used is Pdisp, which models the soil as an elastic medium producing conservative results ignoring the actual small-strain stiffness</p>	



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				<p>of the soils.</p> <p>Therefore, due to the small level of movement found in the analysis and the conservative analysis approach used, it is not deemed necessary to revise the analysis for such change in the alignment of the sewer.</p> <p>The sketch has been replaced by the survey on Appendix A on L495-RE-01. Rev02.</p>	
4	<b>Appendix B a</b>	The maximum tensile strain due to bending is given by $y/R$ , where $y$ is the lever arm and $R$ is the radius of curvature. For a brick sewer, the lever arm $y$ is assumed to be the full height of the egg-shaped brick sewer (i.e. internal height of $1067\text{mm} + 2 \times 215\text{mm} \approx 1500\text{mm}$ ). Please clarify and re-calculate the maximum tensile strain.	Thames Water	Calculations revised with the total height of the sewer on L495-RE-01. Rev02.	
4	<b>Appendix B b</b>	The difference of the displacements predicted at the invert and crown of the sewer is 0.1mm. This is probably due to the method of analysis (e.g. Boussinesq, Legacy Mindlin) adopted in the Pdisp analysis, which does not consider dissipation of settlement above load. Please clarify.	Thames Water	The Legacy Mindlin has been used because it produces more conservative movements. The use of dissipation of settlement above loads would effectively reduce the settlement of the sewer and the difference of the displacements predicted at the invert and crown of the sewer becomes less than 0.05mm.	