

APPENDIX 2.

1 SUMMARY

1.1 My opinion on the matters which I refer to in this report and in relation to the defects which I have set out in the Scott Schedule is as follows:

1.2 Architect's and Clerk of Works' duties

1.3 The agreement document is clear that all services in the Services Supplement were to be provided by Atkins and I have proceeded on this basis. This would include for visiting the site at a normal frequency, to inspect generally the progress and quality of the work.

1.4 The Architect's Job Book describes the role of a CoW and makes it clear that the extent of the CoW's powers and duties is dependent on the terms of his appointment. However this would not vary the terms of Atkins' Appointment in such a way that the architect's inspection duties would be extended or reduced.

1.5 It was also a matter for Atkins to brief the CoW about the inspection procedures Atkins wished to be followed. I have not seen evidence that this was done.

1.6 In respect of the particular areas of defects:

1.7 Structure

1.8 I have not seen sufficient evidence to comment on any of the defects listed.

1.9 Roof works

1.10 It appears clear that the existing flat roof membrane was damaged during the works due to a lack of protection.

1.11 Gee would have been responsible for protecting the roof, to eliminate or minimise damage, and for making good such damage as occurred. As is clear from Atkins' A.I.s, its condition survey and the RAM survey, much of the roof was not effectively protected and damage occurred.

1.12 The widespread nature of the damage suggests that it was not the result of unusual or unforeseeable events, but rather from a lack of any protection over much of the roof.

1.13 **External elevations**

1.14 I have not seen sufficient evidence to comment on any of the defects listed.

1.15 **Fire protection**

1.16 Based on the reports of the CoW, Atkins and Pace, it is clear that the work undertaken by Gee failed to comply with the requirements of the contract. Deficiencies in the intumescent paint finish were known about before the termination of Gee's contract. An appropriate cost deduction therefore should have been allowed for in the interim valuations such that Gee were paid only for that work which was in accordance with the contract.

1.17 From the information I have seen, it is not clear if all defects were known about, or if the full cost of remedial work was included in Atkins estimate of the cost of incomplete and defective work.

1.18 **Plastering**

1.19 I have not seen sufficient evidence to comment on any of the defects listed.

1.20 **Pool tiling, screeds and render**

1.21 In relation to the main pool render:

1.21.1 In my opinion, it appears likely that all of the reasons for the failure of this render – residual paint, lack of an initial skim coat, application of the render in two equal coats, over-rich concrete mix – as identified by Sandberg in its report of 4 November 2009, can be attributed to workmanship and protection issues.

1.21.2 It appears to me that such defects in preparation and execution of the works should have been apparent to a regular inspector such as the CoW, who should have brought these to the attention of the architect. I would expect an architect to make specific inspections of areas of poor workmanship identified by the CoW; and also to make his own inspections and in particular to inspect work due to be covered up.

1.21.3 As the CoW cannot issue instructions, in these circumstances I would expect Atkins to instruct all necessary remedial action. It does not appear that Atkins did instruct this remedial work, and it is unclear whether the defects were brought to the architect's attention by the CoW.

1.22 In relation to the learner pool render:

1.22.1 It appears from the CoW's records that preparation of the substrate was inadequate, and that this was brought to the architect's attention.

1.22.2 The architect does not appear, however, to have issued any instruction to remedy the work. It may be that the architect disagreed with the CoW's assessment of the extent of the defects in this area but, insofar as the learner pool render failed because of poor preparation of the substrate, it appears that Atkins was at fault in failing to instruct the necessary remedial work.

1.22.3 Whether or not this defective work was included in valuations is a matter for the quantum expert.

1.22.4 The problems with the learner pool render may have been locally exacerbated by the screed shutter having been fixed through it.

1.23 In relation to the pool tank floors:

1.23.1 According to the CoW's records, the floors of the pool tanks were properly physically prepared, in line with the recommendations of the screed manufacturer. However, the CoW does not refer to a cement slurry coat being applied.

1.23.2 If the pool tank floor screeds were correctly laid with the exception of a missing slurry coat, it does not appear to me that the architect should have been expected to notice this defect.

1.24 The debonding of the screed may have been exacerbated by inadequacies in curing. I have not seen sufficient information to say whether the screed was properly protected during curing.

1.25 **Floor tiling and screeds**

1.26 Gee appears to have been clearly instructed, through Atkins' drawings, to lay screeds and to fix tiles to 'envelope' cuts. In most, though not all, cases, it did not do this.

1.27 The other issues in relation to floor tiling appear to me to derive from poor workmanship.

- 1.28 The screed cracked in places in the main pool surround. It is not clear to me when this problem arose – i.e. whether the work was done by Gee or in the completion contract – nor what caused it.
- 1.29 **Floor finishes**
- 1.30 The extent of the problems under this heading is not clear to but, as described, they appear to result from a lack of protection of completed work.
- 1.31 **Painting and decorations**
- 1.32 It is normal that remedial works of the various types discussed in this report would require some painting and redecoration work at completion. Such making good of decorations is often included as part the main remedial work itself.
- 1.33 The extent of this type of work likely to be necessary would be largely dependent on the extent of making good, and the standard of protection of other completed works during the remedial works.
- 1.34 **Fixtures and fittings**
- 1.35 The extent of the problems under this heading is not clear to but, as described, they appear to result from an illogical sequence of working and/or a lack of protection of completed work, both of which issues would be for Gee to control.
- 1.36 **Drainage**
- 1.37 In my opinion, it is probable that the numerous defects in the below ground drainage installation were all or almost all a result of poor workmanship on Gee's sub-contractors' part and/or of poor site management by Gee that allowed damage to be caused to completed work.
- 1.38 If Atkins did instruct tests of the below ground drainage (other than in the general terms set out in the contract specification) and then did not witness such tests, nor direct the CoW to witness the tests and then check with the CoW on the results of those tests, as appears to have been the case, I consider that it was also at fault and that it did not meet the requirements of its Appointment.
- 1.39 It appears that the CoW also failed to witness any tests of the below ground drainage, but I consider that the duty to instruct and the primary duty to witness these tests lay with the

architect. The architect might have chosen to delegate to the CoW the job of witnessing some tests, but if that was his intention he would have had to make it clear both to the CoW and to Gee. Atkins should, in any case, have witnessed some tests in order to establish the standard expected, and should have sought test results from Gee and the CoW.

1.40 **Concrete**

1.41 The Scott Schedule lists three types of defects in/remedial works to the concrete:

1.41.1 Two of these issues are a consequence of the work to gullies and drains and addressed elsewhere.

1.41.2 The third issue relates to reinforcement not being correctly positioned within (and in some cases entirely outside) the pool surround slab. In my opinion, either the architect, the structural engineer and the CoW all might have had the opportunity to notice the defect before the concrete was placed. I have not, however, seen any record of such a defect having been recorded. Neither have I seen any claim that a loss arose from this defect, other than in relation to the cost of investigation works.