



Dear Hayley

In response to your instructions I have now inspected the above building and the following is a brief outline of my opinion regarding its present condition.

The building is a proprietary component structure which would have been purchased and installed to a standard size, of approximately 9 m x 13 m. The enclosing walls to the building comprise of pre-cast concrete columns with concrete panels slotted into them. The building is covered by a shallow pitched steel trussed roof clad with corrugated asbestos sheeting. The underside of the asbestos sheets were originally lined with a prefinished fibreboard supported on an extruded aluminium grid which is now underlined with a suspended ceiling of similar panels set in an exposed metal grid.

The inner face of the walls are clad with a prefinished fibre board, which provides a limited level of insulation which will not resist heat loss to any degree.

The building has been set on a brick constructed base, which varies in height to accommodate the change in levels across the site. There is a brick built set of access steps to one end of the building and it is entered via, what I understand to be, a replacement uPVC door to the rear. The original double leafed timber panel doors to the head of the access steps, I understand, are now used only for a means of escape. I would assume however, that if there are large items delivered that these are also brought in via these doors. The doors themselves I believe have been more recently repaired where the weather bar had rotted due to water running over them, dripping down from the eaves cover at the ridge of the building.

My external inspection revealed that the concrete posts to the car park side have in the past cracked along their length and corners, particularly, have broken away and the underlying reinforcement is exposed which is corroded (*Photos 1 and 2*). It is apparent that at some time somebody has treated these posts with a liquid applied material, presumably in an attempt to arrest the deterioration of them. The concrete remains cracked and I expect this coating has had a limited impact on the continued deterioration of the concrete of the encased steel reinforcement. The cracking of the columns has been caused by what is known as carbonisation, where there is insufficient concrete cover of the underlying metal reinforcement which then corrodes causing it to expand and crack the concrete.

The posts to the front of the building are not as affected, however those to the other long side also exhibit similar cracks, some full height (*Photos 3 & 6*). The posts to the rear will also exhibit similar deterioration but not as pronounced. I would mention here that there is ivy now growing up this wall and this should be removed immediately as the growth of it can cause deterioration to the material over which it grows (*Photo 5*).

In order to repair or arrest the deterioration in these posts, particularly those where they have been worst affected, will require remedial work using proprietary materials and by a contractor who has experience in this type of work. The materials to be used are quite costly and being a time consuming type of operation the labour costs are also proportionately quite high.

It is my view however, that the structural integrity of these posts has not yet been compromised and the repair suggested will reinstate them, but at a cost.

The asbestos cladding to the roof, I understand, has already proved to be problematic and recently areas have been treated with a liquid applied material, which I expect will have a short life expectancy. Therefore anticipating its failure, I would suggest that a more effective coating is applied as the asbestos panels from underside look to be sound at present although obviously the material does represent a health hazard (*Photo 7*).

The water tightness of the asbestos cladding can be compromised in a number of ways including the enlargement of the holes through which the fixings are secured. The movement in the sheets and therefore fixings, during high winds can cause abrasion of the original holes drilled so are they enlarged. In addition, due to the shallow pitch of the roof, the lapped joints between the individual panels and ridge capping will be susceptible to ingress from wind driven rain. The application of the suggested liquid applied material will remedy these points of water ingress.

I expect that when the building is in use, during colder weather, that the underside of the asbestos panels will be substantially affected by condensation which will be dripping down onto the internal lining causing it to deteriorate and explains why these are now bowing (*Photo 7*), within their support and where exposed, have pulled from position. This will also be affecting in time, if not now, the tiles of the suspended ceiling.

I would anticipate that if you removed a number of the suspended ceiling tiles, it will be found that more of the 'lining' tiles have also deteriorated to the point of failure.

The application of the liquid applied roof coating will not remedy the problem with condensation, which can only be achieved by the introduction of insulation and possibly ventilation, depending on where the insulation material is placed. If a system can be found that could be used to overclad the roof, which in turn would then be weathered with another form of corrugated sheeting, then the insulative value of the roof will be increased.

However to install insulation and cladding may overload the existing steel trusses so this will need to be checked. It may be possible to introduce insulation beneath the roof cladding, perhaps supported on a different type of suspended ceiling grid however, the void created above would then need to be ventilated. This system would also require the formation of a vapour barrier beneath the insulation to resist the moist air entering into the void and again creating condensation.

The introduction of insulation and vapour barrier will again add load to the roof supports although this will be less than over-cladding the roof and therefore more likely to be supported.

In order to improve on the general insulation of the building it would be possible to line the walls with a plaster-board backed insulation applied to the inner face of them. This work would obviously require a certain amount of enabling works adding to the cost however carrying these out would make the building more functional.

The brickwork of the access steps to the end of the building are substantially spalled (*Photo 6*), a deterioration which will accelerate during the winter months and in time the bricks will break down entirely. It would be possible to renovate these steps by rendering the face of the bricks, which in turn would be painted to seal its surface. This would delay the deterioration of the bricks, although then the render and paint work would require continuous maintenance over the years. An alternative perhaps would be to remove them entirely and introduce a new steel staircase which would, I expect, have a much longer life expectancy.

It would be possible to phase these different elements of work and I would suggest you consider the coating of the roof as a first step in conjunction with repairing the posts around the building at the same time. The repair of the steps should also be considered for the early phase.

Therefore in summary, the concrete posts to the building should be repaired, using a proprietary concrete repair kit and by a contractor who is fully conversant with this type of work and are able to give you a guarantee on completion. In addition the roof should be, as a minimum, coated with a proprietary material such as Proteus and by one of their approved contractors, so you are able to get a warranty for 10-15 years.

It will be possible to introduce insulation to this roof by overcladding it but I would suspect that the additional load would not be supported on the existing structures. Therefore, you can consider introducing insulation laid over a new suspended ceiling, the existing and original lining board to be removed. I would also suggest that whilst the asbestos cladding is exposed that the underside of it is treated to seal the surface and prevent any fibres breaking away in the future. A new suspended ceiling should then be introduced to support a bespoke vapour barrier and a quilt insulation. This detail would have to be discussed with the contractor who installs the suspended ceiling as it is not strictly a 'standard' one.

I have also recommended that the interior face of the external walls are clad with an insulation backed plasterboard to improve generally on the insulative value of the building. In addition the steps from the building to the front will need to be either repaired with the use of render, or possibly replaced entirely with a steel staircase which would have a longer life expectancy.

If you wish I can discuss the above with one of my maintenance contractors, who although are based in South London, do work all around the country for a national

chain of shops as they would be able to undertake the concrete repairs and coat the roof as they are an approved contractor.

I hope the above is sufficient for you to consider the repair of this building and with thought in a phased way to assist in funding what is required.

If you have any queries then please do not hesitate to contact me.

Yours,
Tony

A R Harrison FRICS

