APL Engineers Report

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Mr S Parle
2 Willowbank Court
570 Parrswood Road
Manchester
M20 5QT

Dear Steve

The Parsonage, Stenner Lane, Didsbury

Further to our recent correspondence I am pleased to advise that we have completed our structural analysis and design of the first floor construction and I would discuss our findings as follows.

We partially exposed the construction of the raised floors in the two first floor rooms to the front centre and front left of the building. The partial removal of the floor boarding revealed the presence of new timber joists and steel beams comprising back to back channel sections and these have clearly been installed to provide a new structural floor arrangement. I suspect that the original floors were found to be springy and concern was probably raised that these were not capable of providing adequate support for the proposed usage of these floors and the decision therefore must have been made to strengthen the floors by providing a new independent structural arrangement above. The strengthening works to both these areas appear to be similar comprising back to back steel channel beams spanning left to right and spaced at third points front to rear across the rooms with timber joists spanning front to rear between these and the front and rear walls. To avoid causing any major disruption we only viewed the floor construction in a couple of areas in each room but from the information we have gained the indications are that the steel beams are capable of supporting normal office loading but that the timber joists will be slight overstressed for office loading (2.5kN/sq.m) although they will be suitable for conventional residential loading (1.5kN/sq.m).

I assume both these rooms have been used for office loading prior to your occupation and therefore I think it unlikely there will be any legal requirement for you to strengthen the floors and I am sure that the floors in their present arrangement will safely provide support to the usual relatively lightweight office loading. However if it is your preference that the floors be theoretically strong enough then some enhancement of the timber joists would probably be necessary, probably by the introduction of additional joists between the existing which should not be too onerous.

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With regard to the four post supports that have been provided to strengthen the floor to the right hand side at the centre front of the property, again we partially exposed some of the floor in this area and the two downstand beams in the ceiling spanning left to right are of timber, 20mm deep x 175mm wide. These are notched at various points along their length to accept the secondary joists spanning front to rear and our initial assessment of their structural capabilities suggest that they are not theoretically capable of providing adequate support to office or possibly even residential loading without overstressing and excessive deflection. I suspect these posts were again installed to reduce previous springiness that would have been present within the floor above.

The primary front to rear beam that supports the substantial weight of the wall above together with the left ends of these two secondary beams was not exposed due to restricted access although we gained the impression they were two or three RSJ's of no greater than 150mm in depth and these are therefore unlikely to be of adequate strength to provide proper support to the significant weight of the superstructure above which includes the wall itself, the first floor construction and some of the roof.

Strengthening of these beams will therefore be necessary if the desire is to remove the existing posts and our attached sketch no SK01 illustrates the requirements. The simple solution would be to purely install new beams beneath the existing ones although I appreciate this may excessively reduce the clear headroom within the room. For the primary beam we have specified the use of 200 deep but heavier universal column sections to keep the extra depth of construction to a minimum although this still may be excessive. The alternative of course is to install the new beams in place of the existing, although this would entail significant extra work.

It is possible that the existing secondary timber beams that are presently supported mid span by posts may be structurally suitable but this can only be determined once their full extent has been exposed. Therefore once your lease has been agreed and we have the opportunity of exposing more of the existing superstructure without upsetting Manchester City Council, I suggest that these be fully exposed and assessed. A decision can then be made as to the form of strengthening or replacement that may be required to these particular beams.

As discussed in my previous correspondence it is now appropriate to begin to develop a full specification and schedule for the work and to seek competitive tenders from suitable contractors. Please feel free to contact me and discuss this in more detail at the appropriate stage or of course if you have any further queries.

I look forward to hearing from you. In the meantime I enclose our further account relating to the structural investigations and design etc.

Yours sincerely

[redacted]

J.H. BALDWIN