

Caversham Park, Reading, RG4 8TZ

Structural Impact Assessment Statement

Glanville were asked by Beechcroft to carry out a high-level structural impact assessment for the proposed conversion works of the Main House at Caversham Park, Reading. Glanville has reviewed the architectural proposals and carried out a site walkover to assess the full extent of the works and understand the size and nature of the building. Glanville visited site on Monday 27th November 2023. Following review of the information and the site visit our assessment is as follows.

The proposals include new mezzanine structures constructed off the ground floor level some of which will be located over the existing basement, and others over the existing ground bearing structure. The mezzanines will be placed within a single unit, double height space to create a new level for residential use. We foresee the mezzanine structures to be demountable, independent structures which will only require fixing into the floor and not into any existing walls. They will also be constructed in lightweight materials. Therefore, construction of the mezzanines should involve minimal intrusion to the building fabric and minimal impact on the existing structure in terms of loading. Imposed loading prior to the 1920s tended to be very high since there was little, if any research done during that time. Based on this it is very likely that the imposed loads the original structure was designed for were higher than loads that will be imposed by the new mezzanine. For instance, in 1909 category A (Domestic/Residential loading) was 3.5 kN/m². The equivalent category at present is much lower at 1.5kN/m². Recently, some of the rooms have been used as office space which has an imposed load of 2.5kN/m², again higher than the proposed imposed load usage, and no signs of distress to the existing structure was evident. An assessment of the existing floor structure above the basement would be required prior to construction to determine if it can support the additional loads, but as mentioned it is expected to have minimal impact due to the imposed loading very likely to be significantly lower than what the original structure was designed for. If it is found that the existing structure is not capable of supporting additional loads, a minimally invasive solution would be to either strengthen the existing floor structure or bring the mezzanine columns down to basement floor level. Currently there are masonry piers located at basement level which support the floor above, and any additional structure can be designed and installed in keeping with the existing.

Proposals also include some other minor alterations which we do not believe will have a significant impact on the existing structure or building fabric. For instance, infilling of stair openings and removal/construction of non-load bearing partitions. A limited number of new openings are also required in the existing floor structure to accommodate new lifts and stairs. Again, we foresee this to be minimally invasive and involve trimming out the new openings within structural bays and without alteration to load bearing walls, with new structural trimming beams and fixing the new structure back to the existing structure. If any strengthening is required, we would expect this to be minimal. It is also proposed that there is partial demolition of a set of existing stairs and a new room created. The structure to create the new room will likely be supported by the existing solid masonry walls and should not have a big impact structurally as load paths and magnitudes would be very similar. Any point load applied to the existing masonry walls will be spread via new padstones.

In conclusion, upon review of the proposals and after conducting a site visit it is our opinion that the alterations proposed are sympathetic to the buildings fabric by being minimally intrusive and having minimal structural impact. Any new imposed loading is highly likely to be less than the loads the building was originally designed for and any alterations involving support of new structure by existing is expected to have minimal impact, with minimal strengthening of existing structure expected.