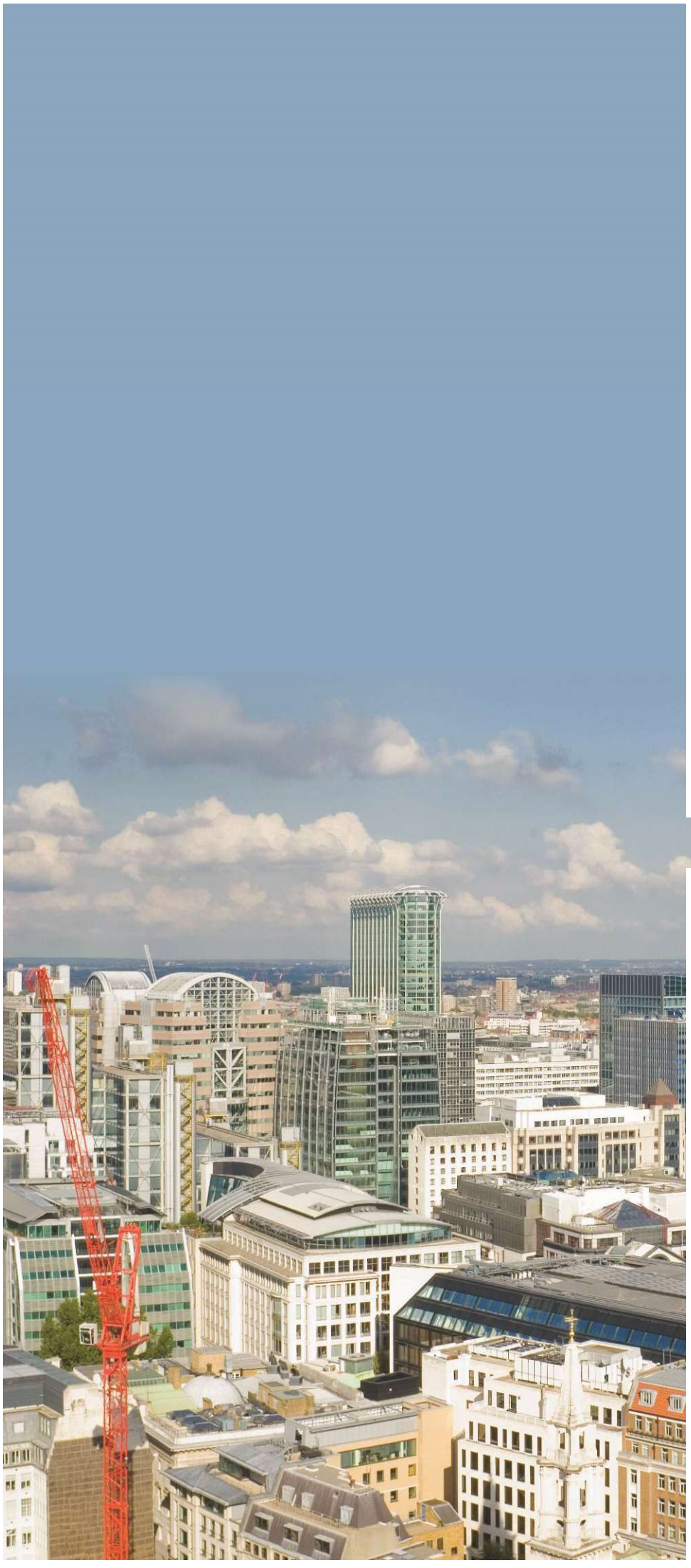

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Piper Lane
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Welbeck Estates
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Interim Structural Condition Report

P21-00134
April 2021
Version 1

Professional, **I**nnovative,
Practical Solutions

Version Record

Version Record **Report Ref: P21-00134**					
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Introduction

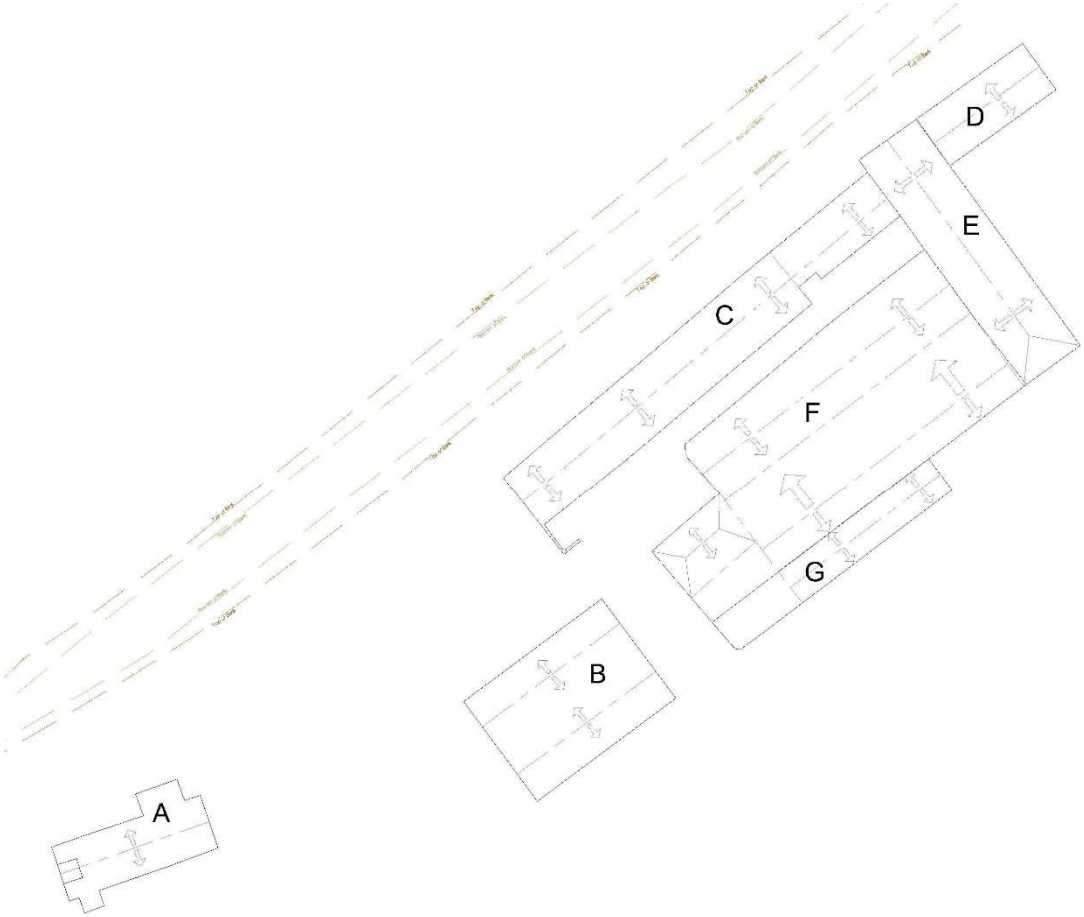
This report should be regarded as interim and will be updated following the results of trial pits to determine the nature and depth of foundations and any comments particularly related to the proposals for development.

At the request of Welbeck Estates Ltd, MET Engineers undertook a visual inspection of the properties at Manor Farm Carburton. The properties comprise a main house and two ranges of barns and outbuildings known as the East Barns and the West Barns. The house is currently occupied and some of the outbuildings are in use for garaging and storage but most are semi derelict.

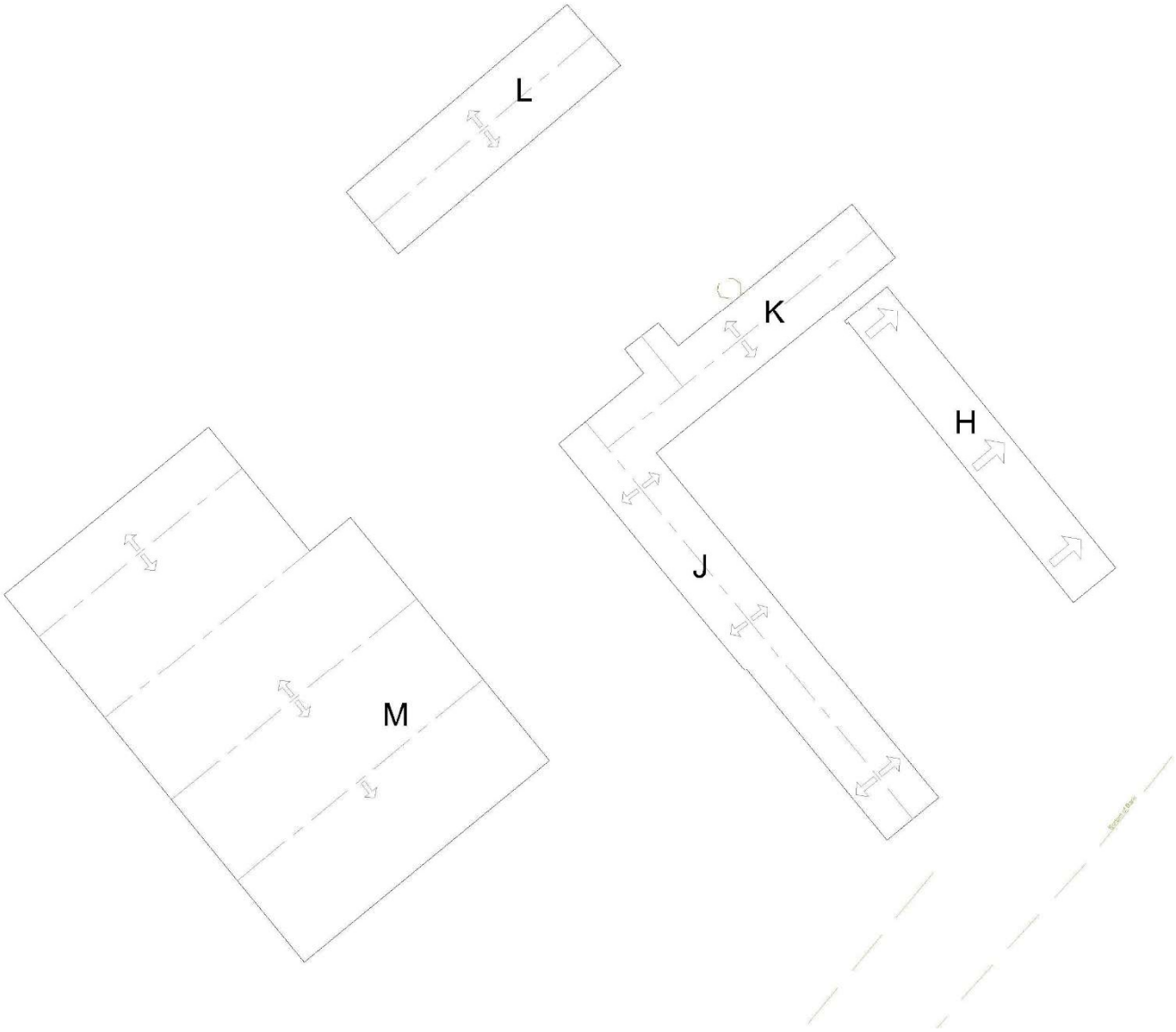
It is proposed that following repair and alterations, the properties will form a hotel and that the disused, de-consecrated 'St Giles' church may be included in the development. We have been advised that in some areas, lowering the existing ground floor will be required. The depth to the existing foundations is not known and it is intended that trial pitting will be undertaken, at which time, this report can be updated to confirm whether underpinning will be necessary.

For the purposes of the report, the buildings have been noted as the diagram below:-

Church, House and East Barns



West Barns



Inspections – East Side

Building A – St Giles Church

The church, now de-consecrated, is constructed of masonry walling supporting a low-pitched timber roof with a sheet covering. There is a bell tower to the west gable and a small vestry to the north elevation.

The roof structure appears to be in reasonable condition.

It is evident that erosion of the stonework has been severe in some areas and in places, render has been applied to prevent complete deterioration. It is considered that close inspection of the external walls will be required to discover any areas of loose render and stonework, which has become too weak to support the structure above.

General attention to the roof covering, flashings and rainwater goods will be required.

Building B – The Main House

The house is three storeys with a slated, timber framed 2-bay duo pitched roof supported by masonry walls. A brief inspection was carried out and in general, the building is in reasonable condition and shows signs of previous repair and maintenance.

To the front elevation, a porch type structure has been added, infilling the original recessed form of the building. It is understood that this is to be removed which will expose the original main stair window detail.

The roof is complicated in shape and attention to the covering and particularly the flashings and valley gutter is required. This in conjunction with repairs and/or replacement of rainwater goods should render the roof weather tight.

From a structural viewpoint, the external walls are generally sound. Some areas of distress were noted, particularly at high level to the east gable elevation where some minor tying works are required and to the east corner of the south elevation. In addition, some stone lintels will require repair/replacement.

The floors are a mixture of timber construction and ‘lime ash’ flooring and appear to be sound. It should be noted that for the proposed use, a significant number of penetrations will be required and whilst this is easily accomplished with timber joist flooring, care must be taken with lime ash floors to ensure that the integrity of the floor is maintained.

In due course, the loading capability of the floor will have to be assessed when the weight of any additional soundproofing or fire resistance material requirements are known.

General repairs will be required to the external walls.

Building C

This brick walled building is part single storey at the west end with the main part of the building being two storey. The roof has an asbestos cement sheet covering which is to be replaced.

The ground floor is approximately 1.2 – 1.3m below the external ground level on the north elevation and acts as a retaining wall to the track and flood channel. No significant movement was noted at the time and it is concluded that the wall is adequate for that purpose. However, given the proposed use, tanking will be required.

The first floor appears to be of 'lime ash' type construction and displays significant unevenness and cracking in places. It is supported in some part by steelwork and an internal masonry wall. However, overall the floor structure appears to be reasonably sound.

Nevertheless, for the proposed use, a significant number of penetrations will be required and the floor possibly made level. Given the age of the floor and the likelihood of further cracking over the medium term, it would be worth considering replacing the floor as part of this development. If this is the case, the existing internal wall could be removed as part of these works.

Building D

Barns D and E form an 'L' shape with D being a lower bay than E. Of similar brickwork construction and in reasonable condition.

Building E

This is a high bay single storey barn with brick walls supporting a timber framed roof with an asbestos cement sheet cladding.

In general, the barn appears to be in good condition and well founded. However, it is split by a brickwork cross wall. There is a significant vertical crack at the junction of this wall and the north external wall indicating separation of the two and it will be necessary to tie them together. There are a number of ways of achieving this albeit, from a structural point of view, other than through ties, the best method is to use a long steel flat section resin anchored to the cross wall with a threaded rod welded to it and drilled through the external wall with a substantial washer plate on the outside. This would look similar to the through ties found in some older buildings. The outside plate can be any shape – round being common.

The floor level to the south of the cross wall is much lower than the main part but could be built up with sleeper walls and precast concrete flooring leaving a void below which would require venting. This floor would then be above the external ground level to the south but could be extended to form a raised external patio with steps back down to ground level.

Building F

Timber posts support the composite timber/iron roof structure, which is clad with asbestos cement sheeting.

There are signs of significant rotting of the posts and roof timbers. However, we understand that this area is to be demolished and thus a detailed inspection was not undertaken.

Building G

A much lower building of brickwork walls, timber framed and sheeted as the other barns. In general in fair condition.
However, at the south-west corner, the wall has settled possibly as the result of tree influence. This corner should be taken down, the foundations inspected and remedial work undertaken prior to rebuilding.

East Barns General Comment

Overall, the buildings are in fair condition given their age. The walls appear to be adequately founded with the exception of the south-west corner of G.

The roofs of the barns are clad in asbestos cement sheeting and this is to be replaced together with new flashings and rainwater goods.

The walls require a substantial amount of repointing work and although not strictly necessary, it may be considered from an aesthetic point a view that re-pointing all of the walls is undertaken.

As part of the proposed development, new openings will be required, particularly to building E where a large opening is required to the south gable. This opening, dependent of the final sizing may require a steel 'goal post' frame to be installed to provide compensatory lateral support to the side walls.

The overall site falls from north to south by approximately 2.7m albeit the north-west wall retains about 1.3m. In terms of ground floor levels, this results in a difference of 1.4m. As a result, ground floor levels may become an issue in relation to access and the level changes in open areas.

The depth to foundations is not known but it is intended that trial pits will be excavated to determine the nature and depth of the foundations. At that time, it may be possible to consider lowering some of the existing ground floor construction. From a development point of view, this may be beneficial even if it was limited to new ground floor construction allowing for damp proofing and insulation.

It is recommended that if not already carried out that timber infestation surveys are undertaken by specialist particularly in relation to the church and the main house. With regard to the other buildings, it would be prudent to survey the roof timbers particularly at truss bearings. Although from ground level the roof structures appear sound, if there is any rot it could be expensive to repair.

Inspections – West Side

Building H

A single storey open fronted stable block with masonry walls and monopitch roof.

The open front is supported by cast iron columns propping the timber roof structure, which has an asbestos cement sheet covering.

Overall, the building is in good condition and no serious defects were noted at the time.

With regard to the development, it would be prudent to consider extending the roof out over the columns, which would simplify the detailing of the new front elevation and protect the columns themselves.

Building J - K

J and K form a narrow 'L' shaped two storey building with brickwork walls supporting a timber first floor and timber framed roof which is clay tiled.

As with most of the other buildings, they are in reasonable condition and seem to be well founded.

Within K, there are a number of secondary steel beams under but not supporting the first floor possibly used for lifting purposes. It would appear that these could be removed without detriment to the main structure.

The first floor is at two different levels. Whilst the lower floor at the southern end of J provides headroom at first floor, the ties of the king post trusses to the northern end are probably just too low to give sufficient headroom, particularly when any sound proofing and floor covering is taken into account. From a structural viewpoint, it would be possible to check up into the ties locally – say at doorways albeit some steel compensatory strapping would be required.

Again, it is assumed that roof repair and rainwater goods repair / replacement will be undertaken.

Building L

This is an open fronted barn albeit the east end has been enclosed as a garage / workshop / store.

The building generally appears to be sound and following re-roofing replacing rainwater goods and general repointing works will form a solid shell for development.

In similar fashion to block H, enclosing the columns within the front elevation would be worth considering.

Building M

This barn is to be demolished and, as such, was not inspected in detail.

West Barns General Comment

Overall, the buildings are in fair condition given their age. The walls appear to be adequately founded.

The roofs of the barns are clad in either asbestos cement sheeting (H and L) which is to be replaced, or clay tiles (J and K) which are to be retained and repaired. The replacement of rainwater goods is also to be undertaken.

The walls require some repointing work and although perhaps not strictly necessary, it may be considered from an aesthetic point a view that re-pointing all of the walls is undertaken.

As with the east barns, the overall site falls from north to south by approximately 2.6m albeit over a much longer distance. As a result, existing ground floor levels should be acceptable.

The depth to foundations is not known but it is intended that trial pits will be excavated to determine the nature and depth of the foundations. At that time, it may be possible to consider lowering some of the existing ground floor construction. From a development point of view, this may be beneficial even if it was limited to new ground floor construction allowing for better damp proofing and insulation.

It is recommended that if not already carried out that timber infestation surveys are undertaken by specialist, as it would be prudent to survey the roof timbers particularly at truss bearings. Although from ground level the roof structures appear sound, if there is any rot it could be expensive to repair.