

**Cart Shed
Manor Farm
Great North Road
Torworth**

For

Cannon Developments Ltd

Structural Inspection Report



PC/4970
June 2017

Cart Shed, Manor Farm, Great North Road, Torworth

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1 Introduction

At the request of Mr Cannon of Cannon Developments a structural inspection was undertaken on the cart shed at Manor Farm, Great North Road, Torworth on 13 June 2017 to determine the condition of the loadbearing elements of the building and their suitability for refurbishment to habitable accommodation.

2 Details of the Property

The property consists of a single storey cart shed probably built in the 19th Century with a pitched roof, a stone elevation adjacent to the public highway, brick gable elevations and an open sided elevation with brick piers. The cart shed is used for the storage of straw and timber.

3 Inspection and Recommendations

Roof

The roof structure originally consisted of timber common rafters supported by timber purlins spanning between gable walls and timber king post trusses. The original pantile roof covering has been replaced with asbestos cement sheeting. The common rafters and some of the purlins have been removed and new purlins have been installed [Photograph 1].



Photograph 1

It is assumed that the asbestos cement sheeting will be replaced with a new pantile covering and therefore new common rafters will be required throughout. The newer purlins are undersized and will sag under the weight of the heavier pantile covering and should be removed. The original purlins appear to be of suitable size for the proposed loading but the missing ones will require replacement and it is recommended that a full ridge purlin is installed in order to remove the risk of roof spread.

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The king post trusses appear to be of reasonable size and in reasonable condition and can be retained although diagonal internal timbers are missing from three of the trusses and will require replacement [Photograph 2]. The ends of the trusses are notched over the



Photograph 2

wallplate on the stone highway elevation. The remaining timber is very small and on some of the trusses has split or distorted. The trusses have a noticeable dip from the open fronted elevation down to the highway elevation [Photograph 3]. Therefore it is assumed that for



Photograph 3

aesthetic purposes the trusses will be jacked up to level and the ends of the trusses re-supported off the highway elevation without relying on the notched section. The end of one of the trusses has been strengthened by fixing additional timbers to the side and building a brick pier [Photograph 4]. Although the repair appears to be adequate it is not possible to confirm the condition of the truss rafter and therefore this area will have to be inspected once the roof covering is removed. If the brick pier is to be removed in the refurbishment then further remedial work to the truss will be required.

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Photograph 4

Ground Floor

The ground floor is obscured by straw but is likely to consist of stone and brick without any dpm or insulation and therefore a new floor with adequate damp proofing and insulation will be required.

Walls

The wall adjacent to the highway consists of cavity stone. The wall leans inwards by up to 60mm in a 900mm height but this appears to be old movement and has not affected the overall stability. Remedial work is not required. There has been some erosion of pointing that will require making good with a suitable lime mortar. In addition there are some stones missing from the inside face of the wall that will require making good [Photograph 5].



Photograph 5

There is a 15mm wide vertical gap between the highway elevation and the north gable wall, probably due to a lack of bond. The gap should be strengthened by installing 900mm long horizontal L shaped steel straps fixed to the wall at 450mm vertical centres.

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The gable elevations have some missing bricks that will require replacement and some small areas of frost damage that do not require remedial work unless for aesthetic purposes. Any repointing should be in a suitable lime mortar.

Two of the brick piers to the open sided elevation have suffered from vehicle impact. One of the piers has been repaired but there is still loose brickwork on the other that will require making good [Photograph 6]. The majority of the piers are plumb but two lean outwards by



Photograph 5

up to 40mm in a 900mm height. This may be due to old roof spread or due to settlement of inadequate foundations. The piers do not require rebuilding and the new roof will prevent spread. However it will be necessary to ensure that further settlement does not occur by excavating trial pits to confirm the details of the existing foundations and, if necessary, underpinning the piers. There is some frost damage to the brick piers but remedial work is not required unless for aesthetic purposes. Any repointing should be in a suitable lime mortar.

The highway boundary wall leans inwards but is still structurally stable and remedial work is not required.

Foundations

No trial pits have been excavated on the main walls of the building but there is no evidence of foundation movement and underpinning is not considered to be necessary.

4 Conclusion

The building is structurally suitable for conversion to habitable accommodation provided the repairs described above are undertaken.

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