



Steve Gilman Design Ltd

Consulting Structural & Civil Engineers

Mr W Fletcher
Broadgate Nurseries
Gedney Broadgate
Spalding
Lincolnshire
PE12 0DG.

BY EMAIL

19th December 2022

Dear Mr Fletcher

Project No. 8467b – STEEL FRAMED BARN

Ref: Structural Inspection of Steel Framed Barn at Broadgate Nurseries, Gedney Broadgate, Spalding

Further to your recent instructions received via James Lambert at Brown and Co, we confirm having visited this site on Tuesday 6th December 2022.

The purpose of our visit was to undertake a structural assessment of a steel framed barn at Broadgate Nurseries and to subsequently prepare a letter type report to comment on its “fitness for conversion” and will form part of a Class Q application only.

General Description

Broadgate Nurseries is located on Bullock’s Short Gate to the south of the village of Gedney near Spalding in Lincolnshire.



Pic 1 – Site Location

Registered Office: Lych Gate Barn, Church Lane, Carlton Le Moorland, Lincoln, LN5 9HS
Tel: 01522 788000 - **Email:** mail@stevegilmansdesign.co.uk - **Web:** www.stevegilmansdesign.co.uk
Directors: S.Gilman B.Eng, C.Eng, M.I.Struct.E. A.M.Foottit I.Eng, A.M.I.Struct.E.
Company Secretary: H.L.Gilman B.A.(Hons).
Registered in England. Registration Number: 5337463 V.A.T. Registration Number: 852 7676 88



The **Institution
of Structural
Engineers**



Steel Framed Barn

Pic 2 – Location of Steel Framed Barn on the Site

The steel framed barn measures some 27.4m long x 12m wide approx. and is a single-storey building (being some 4.8m to eaves level) with a pitched roof. It is structured from steel portal frames spanning the 12m direction and spaced at approx. 4.56m c/c (6 bays). 2 of the bays at the western end of the building have been used for grain storage in the past.

From record drawings, we understand it was built circa 1979 and is therefore approx. 43 years old. The building is located at eastern end of the site and is orientated so that its ridge line runs in a NW-SE direction.

Limitations

This report does not constitute a full structural survey of the building and should not be relied upon by others except for the purposes that it is intended and as noted above. The report is based on visual observations only taken during a single visit. No opening up works have been inspected, nor stored items moved during our inspection – as such we are only able to comment on the areas of structure visible at that time.



External Observations

South-west facing wall (side) Elevation



Pic 3 - South-west facing wall (side) Elevation

- The upper part of the south-west facing wall is clad in grey corrugated sheeting.
- At the left-hand end of the elevation, the first 2 bays of this elevation are formed from galvanised steel grain walling spanning vertically. This shows some signs of surface corrosion.
- Towards the right-hand end of the elevation, the lower part of the wall is formed from red common brickwork.
- This side of the building is also punctuated by 2 full height sliding steel doors.
- The steel stanchions are partly exposed and there is some mild corrosion especially close to ground level.



South-east facing wall (gable) Elevation



Pic 4 - South-east facing wall (gable) Elevation

- The upper part of this gable wall is clad with grey corrugated sheeting and the lower 2.4m in common brickwork masonry.
- The masonry is in good condition.
- The steel stanchions are also partly exposed and there is some mild corrosion especially close to ground level.
- There are two large downpipes attached to this elevation serving the eaves guttering.



North-east facing wall (side) Elevation



Pic 5 - North-east facing wall (side) Elevation

- The upper part of this wall is clad with grey corrugated sheeting, a small area of which is slightly damaged.
- The lower 2.4m is formed from a combination of common brickwork masonry (4 bays) with 2 bays of corroded galvanised steel grain walling at the right-hand end.
- The masonry is in good condition.
- The steel stanchions are partly exposed and there is some mild corrosion especially close to ground level.



North-west facing wall (gable) Elevation



Pic 6 - North-west facing wall (gable) Elevation

- The upper part of this wall is clad with grey corrugated sheeting.
- The lower 2.4m is formed from galvanised steel grain-walling.
- Some corrosion was noted on the surface of the grain-walling.
- The steel stanchions are partly exposed with some mild corrosion, especially close to ground level.



Roof

- The roof is clad in grey corrugated sheeting and includes proprietary roof lights (one per bay) centrally within each roof slope.
- The roof has good alignment both along the ridge line and within its own plane and is served by ½ round gutters.

Internal Observations

- The ground floor area is essentially one large open space.
- The steel framing is exposed and comprises a combination of 254 and 305 deep U.B. columns supporting 254mm deep U.B. rafters with eaves haunches.
- Some of the steelwork shows signs of mild surface corrosion.
- The roof sheeting is supported on a series of cold formed steel purlins (believed to be a “Wards” profile). No anti-sag rods are present.
- The roof contains some steel cross bracing.
- The sheeting to the upper part of the walls is fixed to timber side rails spanning between steel columns.
- The internal face of the masonry walls and the grain walling is also exposed.
- The concrete floor slab is flat and generally in good order



Pic 7 – General internal view of Steel Framed Barn



General Comments

With the exception of some steel corrosion, this building is in very good condition bearing in mind its current use and age.

For conversion to a dwelling, potentially heavier roof coverings will be specified, and insulations and internal finishes introduced. As such, the roof purlins and steel rafters may need to be slightly enhanced to accommodate the new load regime.

The proposal to convert the barn into a dwelling will no doubt mean that internal walls will be constructed, and we assume a first floor will be introduced. These elements will help to enhance stability of the building and therefore help to demonstrate compliance with part A of the building regs.

In addition, new window and door openings will no doubt be required in the external envelope of the building. As such, additional framing/trimming will be required to ensure adequacy.

At this stage, no assessment of the building foundations, floor slabs or subsoils has been undertaken and this should be carried out as part of a building regulations assessment etc.

Conclusions

Apart from a few relatively minor defects noted, the majority of the building fabric forming this barn is in good condition bearing in mind its age and in our view is structurally “fit for conversion”.

To achieve technical approval under the building regulations, some further assessment and a modicum of strengthening work will be required but the base structure represents a good starting point.

It can be concluded that from the visual inspection of this barn that the structure is suitable for conversion into living accommodation as seen in examples elsewhere in the district.

We trust you find the above self-explanatory and satisfactory for your present purposes, but should you require any further information, clarification or assistance please do not hesitate to call.

Yours sincerely

Steve Gilman
For and on behalf of Steve Gilman Design Ltd