MICHAEL GOFF

AGRICULTURAL PLANNING, DESIGN & PROJECT MANAGEMENT
No. 2 Bovey Cottages
Waterrow
Taunton
Somerset
TA4 2BA
Telephone: 07739 279042
Email: mike@bovey2.eclipse.co.uk

STRUCTURAL CONDITION & EXTENT OF WORKS SCHEDULE: Dated 2nd May 2021

Applicants: Mr & Mrs Dan Britten, Britten Farming, Green Farm, Downhead, Shepton Mallet, Somerset, BA4 4LQ

Application: Change of Use of an existing agricultural building to a dwelling under Class Q (a and b)

Location: Land to the west of Slait Hill (nearest postcode BA4 4LQ), at grid reference ST 368579 145772

Introduction:
The proposal relates to a prior determination notification under Class Q Part (a and b) made to Mendip District Council in relation to the change of use of an agricultural building at NGR ST 368579 145772, to the west of Slait Hill, Downhead, Shepton Mallet into a single dwelling.

This report is written with due regard to the published guidance notes relating to building operations allowed under the change to residential use:

Class Q part (b) covers the design and exterior of the building therefore this report does not cover the internal works. These are all deemed to be covered within the legislation which allows necessary works in order for the building to function as a dwelling. The updated guidance, issued in February 2018 confirms that some structural works are allowable and that internal works are not generally development. To quote Planning practice Guidance, Paragraph 105;

“Building works are allowed under the right for permitted agricultural buildings to change to residential use, however the right assumes that the agricultural building is capable of functioning as a dwelling. The right permits building operations which are reasonably necessary to convert the building, which may include those which would affect the external appearance of the building and would otherwise require planning permission. This includes the installation or replacement of windows, doors roofs, exterior walls, water, drainage, electricity, gas or other services to the extent reasonably necessary for the building to function as a dwelling house; and partial demolition to the extent reasonably necessary to carry out these building operations.

It is not the intention of the permitted development right to allow rebuilding work which would go beyond what is reasonably necessary for the conversion of the building to residential use. Therefore it is only where the existing building is already suitable for conversion to residential use that the building would be considered to have the permitted development right.

Internal works are not generally development. For the building to function as a dwelling it may be appropriate to undertake internal structural works, including to allow for a floor, the insertion of a mezzanine or upper floors within the overall residential floor space permitted, or internal walls, which are not prohibited by Class Q.”

This report therefore uses the guidance set out in BRE Digest 366 Part 2 and assesses the condition of the existing buildings and comments on their suitability for future use as a dwelling without the addition of new structural elements to the buildings.

The author of this report has been commissioned to prepare a structural assessment of the buildings and their potential for conversion in accordance with guidance for permitted Development. The objective of the report is to record the condition of the existing building and to make observations on the suitability of the building for conversion.

The inspection does not deal with electrical or concealed services or any elements of the building not visible. As the building has only been used for general agricultural storage is assumed that no hazardous materials or contamination is present. The report is limited to commenting on the structural suitability for conversion only. The barn is considered to be structurally sound and capable for conversion without significant re-building works as identified in this report.

The report is for the sole use of the named applicants and it shall not be disclosed or made use by an third party without prior written consent, as such any no responsibility can be accepted to any third party.

General Description:

The barn is a single storer building constructed as a Dutch Barn and would have been constructed around the 1960's. These types of buildings are included within Historic England's publication AdaptingTraditional Farm Buildings as examples of traditional farm buildings originating in the 1870's.

This is a typical example consisting of a metal frame with an RSA (rolled steel angle) trussed roof with supporting RSJ (rolled steel joist) vertical members and further RSA for support and fixing of the side and roof cladding. Externally the barn is clad with painted corrugated iron cladding to the walls under a corrugated roof. The barn is clad fully on the rear and sides, with some cladding having been previously removed to allow for previous access and use. Any such areas of cladding that had previously been removed, will be replaced with similar materials as part of the works, although a lower panel has been removed from one of the gable ends. The front is open as is traditional for this type of building. There is a part concrete floor. The change of use proposal includes the conversion of the barn to provide a two storey dwelling. This will be achieved within the existing external dimensions of the building.

Construction:

The subject building is constructed with a metal frame divided into two bays. The building takes the form of a typical Dutch barn, with openings for agricultural use. Externally the walls are clad with traditional 3" galvanised painted corrugated cladding under a curved corrugate sheet roof. The building is on two levels with concrete walls and concrete and earth floors. The cladding is secured onto steel RSA purlins and side sheeting rails which are generally in good order, although with some limited surface corrosion, whilst remaining structurally sound. The rainwater goods also consist of galvanised steel. The roof is clad in a similar material which also has some surface corrosion and some minor holes. These can be made good as repair and maintenance to the building. The external cladding is more than capable of being retained as part of the conversion proposals. It is recommended that the roof covering can be painted with a heat resisting "Ruberoid" paint to maintain the sheeting and to provide a waterproof structure.

This is a substantial traditional farm building and the structure is considered to be in good order and is suitable for a change of use to form a new single dwelling in accordance with the Class Q legislation.

This building is typical of many agricultural buildings forming a functional structure. It is generally in good order, structurally sound and adequate for its current purpose. In order to assess the suitability of the structural stability and load bearing capacity of the building with respect to its future use, the design of the proposals are fully assessed as considered below with due reference to the proposal drawings and schedule of works.

Proposed Works:

Design Criteria

The following section of this report determine the condition of the existing building and further comments on the suitability for conversion to a dwelling. It also provides a schedule of the proposed building operations.

The proposed full method of construction will be detailed at the Building Regulations design and approval stage of the project, therefore this report concentrates on the current nature of the building and he suitability for conversion.

The design proposals are in accordance with the legislation, which specifically restricts new building works other than those that are considered reasonably necessary to convert the building into a dwelling. The existing building and structure is strong enough to take the loadings associated with the change to residential use.

Design Philosophy

The proposals are to utilise the existing building frame, fabric and existing external materials and therefore ensure that the building is a conversion and not a new build. The existing structural frame will remain in place and provide the main load-bearing element together with the existing external wall and roof cladding. The existing galvanised steel wall cladding will remain as a rain screen in front of new internal insulated walls and so retain the character and appearance of an agricultural building. The existing frame and purlins will continue to support the existing roof covering, which will be retained in its entirety. It is proposed to paint the existing roof sheets to ensure that these provide a weather tight covering to the building. Insulation will be provided to the underside of the roof structure to comply with the Building Regulations. The proposals aim to provide a conversion with minimal alteration to the building fabric. Window and doors have been designed to be incorporated within the current openings along with the reinstatement or previously removed cladding. New insulated timber framed perimeter walls will be formed between the existing stanchions, behind the cladding, together with internal partitions within the envelope of the building.

Walls: The existing external walls will be upgraded to provide an insulated and water tight structure. The external elevations will retain the existing corrugated galvanised steel sheets which will be cleaned, treated and re-repainted, additional similar cladding will be incorporated where it has been previously removed. The condition of the existing cladding is generally in good order and suitable to be retained. The walls will incorporate insulation where they form the external walls to comply with the requirements of building regulations. The proposals utilise the existing openings which will incorporate the majority of the new glazing and doors openings. The proposals maximise the retention of the current cladding and therefore will retain the current agricultural appearance of the building. The internal walls will consist of 140mm timber framing positioned between the existing RSJ columns, which will be fully insulated with “Rock-wool Flexi" or similar. A further 25mm rigid PIR board will be include internally to form a well insulated and air tight structure.

Floor: The existing floor will be replaced with a new insulated concrete floor. This will be formed with a 100mm concrete slab, 150mm rigid insulation, doc and screed.

Roof: It is proposed to retain the roof structure in its entirety, including the steel rafters and roof cladding. Minor repairs are required to the retained sheets and it is recommend that these are painted both internally and externally with a “Ruberoid" paint finish to ensure that this provides a weather tight structure. Regular inspections and maintenance will be required to maintain the longevity of the cladding, as is normal for any dwelling. Insulation will be incorporated beneath the roof covering with rigid PIR insulation between and under existing purlins to create a warm roof.

Windows & Doors: Glazing will be inserted between the retained frames on the elevations generally as shown. These will be high thermal efficient PPC aluminium frames with double glazed argon filled units.

Structure: The existing steel frames will continue to be the main structural elements and will take the loadings associated with the conversation of the barn into a dwelling which will include the roof and new internal dead and live loads.

The building is deemed to be structurally sound, being in the order of some sixty years old. The frame and roof construction is suitably designed to continue to support the existing roof covering. This is a suitably and robust structure and as there will be no significant increase in loading, the existing roof would be deemed to satisfy Part A of the current Building Regulations.

The existing concrete and hardcore floors will be removed and replaced with a new level concrete slab with insulation to meet the requirements of the Building Regulations.

All internal walls will be constructed in non load bearing timber stud work which will be constructed directly off the floor slabs.

Rainwater goods are to be black Upvc.

It is considered that the proposed design and required works comply with the legislation which actually allow for the replacement of external walls to an extent reasonably necessary for the building to function as a dwelling house. The full extent of the existing external walls will however be retained in order to maximise the retention of the current external materials. Areas of new infill walls/cladding will be included to enclose the building, primarily to replace the open areas of the building and the missing side cladding. These will be self-supporting infill panels only and therefore support their own weight and are not intended to provide additional structural support to the building.

Foul Drainage: The converted dwelling will be serviced by could drainage system that meet the requirements of the Building Regulations and meets the requirements of the current Phosphate Nutrient Neutrality requirements. A package treatment plant (PTP) will be installed, this being typically a “Premier Tech ~ Rewatec (Solido Smart PTP)” unit (see accompanying brochure and Performance Certificate), with a discharge to a suitably design soak away system on land within the applicants ownership. As such this system will be designed such that the phosphorous will be attenuated within the soil profile and there will be no pathway from the source to any receptors. The design of this system will ensure that the threshold limit for insignificant levels of phosphorus discharges to ground is met to further ensure that the conversion of this barn to a dwelling avoids harm to the Somerset levels and Moors Ramsar site.

It should also be noted that the site is within a Flood Zone 1 where there is a low probability of flooding.

CONCLUSION:

The design of the dwelling ensures that the form and structure of the existing building has been utilised in order to create a change of use and a conversion with due regard to the adequacy of the existing structure. It is considered that the building is structurally sound and capable of conversion into a single dwelling and that the proposals seek to integrate the new materials and method of construction to form a harmonised building. Certain works are required in order to comply with the current Building Regulations and to provide weather tightness and insulation values which will need to be detailed in full prior to the commencement of the works on site.

The introduction of internal walls and floors will merely divide the living space and as such are not development. For the avoidance of doubt, they will not be load bearing or necessary to provide structural stability, although they will naturally provide some additional strength to the building.

The are no proposed external works which can be considered as being structural or not reasonably necessary in order to form a change of use to a dwelling, therefore the proposals to convert this building into a dwelling are in accordance with the planning practice guidance with reference to Class Q.

The proposals represent a conversion of an existing agricultural building. It has been calculated that 100% of the original roof covering will be retained. The existing building is clad on four sides, which equates to a minimum of 60% of the building. Of this, all the existing cladding will be retained apart from a minor amount forming four new window openings. It is consider that these building operations do not go beyond that which is permitted under part (b) and therefore the proposals represent a conversion of the existing building. If the percentage of the external materials, including the roof covering and the wall cladding is expressed as a percentage, then 78% of the existing envelope is to be retained. New materials, including windows and doors and infill walling equate to only 22% of the total area of the external envelope. The proposals therefore clearly represent a conversion of the existing building.

The legislation allows the installation or replacement of windows, doors roofs, exterior walls, water, drainage, electricity, gas or other services to the extent reasonably necessary for the building to function as a dwelling house; and partial demolition to the extent reasonably necessary to carry out these building operation. The proposals aim to retain all of the existing external materials, with new windows and walls provided to infill the front and lower side elevations. These represent reasonably necessary works.

With reference to Hibbitt v. SSCLG [2016] EWHC 2853 (Admin) case outlined often referred to by planning authorities, there are three components of significance when considering Class Q permitted development. The first is the assumption that the building must be capable of functioning as a dwelling. Second, that the development include no new structural elements. Third, that the existing building must be sufficiently structurally strong to bear the loading from the external work.

Components 2 and 3 have largely been superseded by the revised 2018 guidance;

“It is not the intention of the permitted development right to allow rebuilding work which would go beyond what is reasonably necessary for the conversion of the building to residential use. Therefore it is only where the existing building is already suitable for conversion to residential use that the building would be considered to have the permitted development right.

Internal works are not generally development. For the building to function as a dwelling it may be appropriate to undertake internal structural works, including to allow for a floor, the insertion of a mezzanine or upper floors within the overall residential floor space permitted, or internal walls, which are not prohibited by Class Q”.

The Hibbitt case did not seek to prescribe an exact threshold after which the nature of the work changes. This remains a matter of judgment based on the available evidence.

The proposals clearly utilise an existing building, which is suitable for a change of use to a dwelling. The proposals retain external roof and wall cladding materials amounting to a total of 74.3% of the external area, therefore new external works are limited. As internal works are permitted development, the proposals are fully in accordance with the legislation and constitute a change of use and conversion of an existing building.