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**APPRAISAL OF BUILDING**

for

**PROPOSED CHANGE OF USE AND CONVERSION**

of

**THE COLD STORES  
BUTLERS FARM  
HORSESHOES LANE  
LANGLEY  
ME17 3JY**

17<sup>th</sup> November 2022

NPB/EMB

OFFICES AT: Paddock Wood, Cranbrook, Hythe and Wadhurst  
LAMBERT & FOSTER LTD is a Limited Company registered in England and Wales, No. 10574225  
Registered Office: 77 Commercial Road, Paddock Wood, Kent TN12 6DS





## THE COLD STORES, BUTLERS FARM, HORSESHOES LANE, LANGLEY ME17 3JY

1. In accordance with your instructions, we have been asked to comment on the condition of the above building with specific regard to the potential for a change of use. This report is to focus on the principle of whether or not the existing structure is capable of conversion. This will take into consideration the detailed proposed drawings and particularly reflect on the key policy within the Maidstone Borough Council Local Plan which refers to conversion of buildings being “*permanent, substantial and sound construction and capable of conversion without major or complete reconstruction*”.
2. I confirm inspection of the building was carried out with the attendance of Malcolm MacLaren of Roughton MacLaren Structural Engineers on Tuesday 11<sup>th</sup> October. The inspection was to assess the building in the light of Officer’s comments relative to a previous application reference 18/501751/PNQCLA. Within that Officer’s report there was specific comment related to the Structural Appraisal which was submitted with the application in that “the Barn was found to be stable and suitable for conversion”. However there was comment that the “existing roof trusses may require reinforcement or supplementing” and, more importantly, “the construction of the external dividing walls will need to be confirmed to allow their suitability to support the proposed first floor to be assessed”. In addition, the submitted Structural Appraisal stated that a “separate load bearing studwork wall may be required to support the first floor”. The Structural Appraisal further states that “it is likely that deeper trench filled foundations will be needed. This will require underpinning and that it is to be recommended that raised plinth walls be introduced to lift the structure above the DPC level to reduce the risk of timber decay and damp in the future”.
3. In summary the Officer’s report concluded the extent of work identified as potentially needful could not be carried out within the scope of works permitted under Class Q, Part 3, Schedule 2 of the GPDO.
4. This report addresses a different proposal. In this respect it is confirmed the design has been significantly altered. In this respect we refer to Bloomfields’ Drawings No P.2798.06.A which identifies a single storey detached dwelling. There is no first floor or sub-division between multiple units.
5. Given the information available further to inspection, the subject building is a simple traditionally constructed oblong building on a east/west axis incorporating a lean-to addition along the north-east side. The building is accessed off a private drive that leads directly from Horseshoes Lane. This driveway also serves peripheral buildings and leads to a substantial hardstanding to the southern side of the building with all of the surrounding area within the applicant’s control.



6. In terms of assessing the capability of such a structure to function for an alternative use which would be proposed for residential purposes, it is needful to rehearse the basic requirements of any such structure, where permanence and enclosure are the key determinants. This is particularly relevant when considering the suitability of a building for an alternative use. The criterion adopted is that of the basic principle in assessing the functionality of any structure.
7. A complete building is created from a founding base upward. In turn the superstructure creates the envelope to achieve a suitable space within the shell of the building for the intended occupational use. This superstructure is appropriately covered to create the waterproof interior. The framework in turn has also to transmit the loading imposed on the enclosure through to the founding substrate in an appropriate manner. Similarly, the envelope has to be capable of carrying not only the loading on the enclosure, but also loads transmitted in various weather conditions being imposed on the overall structure.
8. This building, which was constructed under the direction and guidance of the applicant in the mid 1980's, is of a simple format providing a specific agricultural storage function. The building was constructed as a cold store for the controlled atmosphere storage of top fruit. The construction is that of a mass concrete deep trench foundation to the periphery of the building which in turn supports a timber frame oblong enclosure with a central division wall. This in turn supports a double pitched roof incorporating trussed rafters. There is a solid reinforced concrete floor throughout the building and the building is enclosed with a specialist form of "sandwich" construction with galvanised metal internally, insulation within the studwork and heavy duty metal profile sheeting externally. That is to form the load bearing wall which in turn supports a simple fibre cement sheeted roof. There are access doors for loading as well as access to the roof. There is a single monopitched small projecting portion to the north side of similar construction which is the housing for the machinery to control the internal atmosphere.
9. As identified above, we have set out the principle of any structure in terms of serving the function of weatherproof enclosure. Accordingly we must start by emphasising this building, which is probably over 40 years old, which has functioned perfectly adequately for agricultural storage purposes, is completely sound, true and robust. There is no indication of any distortion, settlement, undue movement, cracking or failure within the structure. There is clear evidence of lack of maintenance which in turn has resulted in some deterioration. This is particularly relevant to some of the roof sheeting, rainwater guttering, doors and minor area of external sheeting. This is all due to lack of maintenance, particularly in the recent past when the building has not been utilised for anything other than surplus agricultural storage.



This does not indicate any failure within the basic function of the structure. The building has functioned perfectly adequately in sustaining imposed loading from external weather, deadloading from the fabric of the structure and most particularly, the imposed deadloading which itself would be substantial of the loading of top fruit in wooden bins throughout the structure which would have been imposing a load in the region of between 330 and 390 kg per bin. It has to be taken into consideration each bin is approximately 1.5m<sup>2</sup> and this building would have been loaded a minimum of 5 bins high.

- 10.** Given the existing conditions and the context of the existing use, the imposed and deadloading of the proposed change of use and the change to the fabric of the structure, is to be the context with which this building should be assessed for a potential change of use.
  
- 11.** With reference to the stability of the existing building, we refer to the comments set out on the Maclaren Roughton site visit report which is attached, Appendix A. From their inspection they conclude the building is in “sound structural condition”. They also prepare a loading assessment clarifying the proposed use will introduce a floor loading less than the previous fruit storage use.
  
- 12.** First of all, with reference to the proposal, we confirm in the attached photographs, the evidence of the existing trench fill concrete foundations which are to a depth of approximately 1m below floor level. We also confirm the exposure of the footings identified an enlarged edge beam to the concrete floor. Finally, we confirm the applicant clarified the floor is made up of reinforced concrete. This is self-evident given the imposed loading but it merits confirmation which could be substantiated, if needful, with a statutory declaration. We would emphasise there is no movement or distortion within any of the floor other than movement cracking between the main floor slab and peripheral concrete to the yardage, all of which is minor and attributable to a differential movement between these elements. This is clarified in the attached site visit report prepared by Maclaren Roughton.
  
- 13.** With reference to the proposals within the change of use, it is to be considered as to whether the building is capable of the introduction of an alternative roof sheeting, internal finishings and a new suspended ceiling. There is the principle of benefitting from distribution of these loads with the introduction of internal cross wall partitioning. Assuming an imposed load of the ceiling in the region of 25KN/m<sup>2</sup> imposed load from the ceiling and given the insulation would be upgraded and therefore would only be a replacement as well as internal dry lining would only be a replacement for the existing metal lining, there is no structural justification of presuming this building cannot support the variation within the loading characteristics from a change of use. In terms of the imposed load internally, a loading for a domestic use will be substantially less than that of the existing use.

14. The foundations are considered adequate for the sandy clay soil substratum which is of medium shrinkability. There are no nearby trees of significance or surrounding vegetation which is all grass which would introduce fibrous roots which would have an influence upon the existing foundations. Accordingly there is no evidence to indicate any impact on the ground-bearing capacity or the structural form of the building which would be impaired or impacted brought about by a change of use.
15. The final element is that of the weatherproofing including the introduction of a damp-proof course. There is an existing damp-proof course which obviously has inhibited the transmission of dampness through the surrounding vegetation and the solid concrete floor into the base plate of the timber frame. This can be upgraded utilising modern restoration techniques if needful. Similarly, the damp-proofing characteristics can be improved with the introduction of a floating floor on insulation and a damp-proof membrane which will probably be needful within the change of use. This is not, however, a structural feature.
16. To illustrate the principal of that which will be introduced with a change of use as to how this building can be adapted is detailed in Appendix B.
17. In conclusion, we find this building, in whole or in part, could be capable of reuse without requiring complete reconstruction. These observations are based on the inspection and supplementary details that have been provided of the existing and proposed. We have applied a general understanding as to how loadings are distributed through such an existing framework. All such matters would have to be addressed in detail to satisfy Building Regulations as well as appropriate CDM compliance.
18. It is considered this building can be adapted to an alternative use for potential residential purposes without the need for major or complete reconstruction as the existing structure is permanent, substantial and of sound construction. Such works will be subject to appropriate compliance with relative regulatory controls. This building will form the basis of a straightforward project for adaptation and an alternative future use.

Yours sincerely



**N P BRANDRETH BSc FRICS**  
**On behalf of Lambert & Foster Ltd**



## **APPENDIX A**

### **MACLAREN ROUGHTON REPORT**

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REPORT ON:	The Cold Store, Butlers Farm, Horseshoes Lane, Langley Heath, Maidstone, Kent ME17 3JY	PROJECT NO:	2223
INSPECTOR:	M McLaren	SHEET:	1 of 8
		DATE:	11 10 2022 (11.00am)

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Rev A

**Introduction**

An inspection visit was made jointly with Mr N Brandreth of Lambert & Foster of the Cold Store Building at Butlers Farm on 11 October 2022. The purpose of the inspection was to advise on the present condition of the building and its conversion to a single one storey dwelling.

Left and right are defined either when facing the building from the front, or a specific part of the building being inspected. Where dimensions are provided these are approximate.

**General**

It is not intended that the building is to be changed structurally from how it exists today, rather the purpose of the inspection was to examine its present condition and consider the intended future use as a single storey dwelling.

The inspection was carried out on foot externally from ground level and internally from the floor level. No inspection was made of the pitched roof space above the ceiling in the high level building.

Photographs were taken during the inspection, several of which are included in this report.

**Internal inspection**

The following observations were made:

- 1) The floor slab understood to be approximately 200mm thick appears to be in good condition and it may have a concrete screed finish (photos 07 & 10). The level appeared uniform with no signs of structural movement. There were no internal partition walls and no stored items.
- 2) The external walls have an apparent metal sheet cladding that is stained or greased but are generally in good condition (photo 07).
- 3) The ceiling is at eaves level and covered with panels like those used on the walls. From floor level they appeared generally to be in good condition and level with some age-related staining. There is an access hatch in the ceiling but without a long enough ladder no inspection of the roof space was possible (photo 09).
- 4) Harvested apples and pears would have been stored in timber rectangular bins over the ground floor area stacked in columns of 5 bins high as was demonstrated (photo 08).

**External inspection**

Visually the building was in an acceptable condition with the vertical profiled steel sheet walls showing no obvious structural deformations, only some local surface damage. There are 2No large openings with sliding doors in the front wall that have afforded vehicular access. No openings exist in the side walls and the rear wall.

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REPORT ON:	The Cold Store, Butlers Farm, Horseshoes Lane, Langley Heath, Maidstone, Kent ME17 3JY	PROJECT NO:	2223
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Rev A

Vegetation at the site consists of a fruit orchard at a short distance from the rear of the building (photos 02 & 03).

A trial pit was dug near the right hand rear corner to determine the depth of the foundation to the steel stanchion at the corner. This was measured as 950mm below the grass surface. The ground at this depth was a stone head clay material (photos 04,05 & 06).


### Conclusions and recommendations

Based on the evidence gathered from the visual inspection it is concluded that the store building is basically in a sound structural condition.

From the overall shape of the building, it appeared that the framework behind the cladding has performed well since it was built. The lack of any noticeable deformation in the walls internally is also evidence of the soundness of the building.

Regarding the ground slab the previous use of the building as a fruit store would have imposed higher loads on the ground floor than will be applied by the intended future use of the building as a single storey dwelling. This is demonstrated by a calculation, page 01 rev B, submitted with this report.

The condition of any existing drains serving the building is not known and if any drain is to be retained in the conversion, then it will need to be examined and tested.



M MACLAREN BSc(Eng) CEng MICE MIStructE  
11 November 2022



REPORT ON: The Cold Store, Butlers Farm, Horseshoes Lane,  
Langley Heath, Maidstone, Kent ME17 3JY

PROJECT NO: 2223

INSPECTOR: M Maclaren

SHEET: 3 of 8  
DATE: 11 10 2022  
(11.00am)

Rev A



Frame No: 01  
Location: The Cold Store, Butlers Farm, Horseshoes Lane, Maidstone, Kent ME17 3JY  
Description: Front elevation of the farm building, which has 2No storey height sliding doors  
Date: 11/10/22



Frame No: 02  
Location: The Cold Store, Butlers Farm, Horseshoes Lane, Maidstone, Kent ME17 3JY  
Description: Angled view of the building with a fruit orchard to the rear that extends around on the left and right  
Date: 11/10/22

REPORT ON: The Cold Store, Butlers Farm, Horseshoes Lane,  
Langley Heath, Maidstone, Kent ME17 3JY

PROJECT NO: 2223

INSPECTOR: M Maclaren

SHEET: 4 of 8  
DATE: 11 10 2022  
(11.00am)

Rev A



Frame No: 03  
Location: The Cold Store, Butlers Farm, Horseshoes Lane, Maidstone, Kent ME17 3JY  
Description: A view of the right end of the building with the fruit tree orchard curving round from the rear

Date: 11/10/22



Frame No: 04  
Location: The Cold Store, Butlers Farm, Horseshoes Lane, Maidstone, Kent ME17 3JY  
Description: A trial pit dug to reveal the foundation at the right hand end of the building with the angled tape measure showing an approximate depth of 950mm  
Date: 11/10/22



REPORT ON: The Cold Store, Butlers Farm, Horseshoes Lane,  
Langley Heath, Maidstone, Kent ME17 3JY

PROJECT NO: 2223

INSPECTOR: M McLaren

SHEET: 5 of 8  
DATE: 11 10 2022  
(11.00am)

Rev A



Frame No: 05  
Location: The Cold Store, Butlers Farm, Horseshoes Lane, Maidstone, Kent ME17 3JY  
Description: The material from the trial pit in photo 4, a stone clay head material  
Date: 11/10/22



Frame No: 06  
Location: The Cold Store, Butlers Farm, Horseshoes Lane, Maidstone, Kent ME17 3JY  
Description: A drain manhole cover adjacent to the rear right hand corner of the building and near the trial pit in photo 04  
Date: 11/10/22



REPORT ON: The Cold Store, Butlers Farm, Horseshoes Lane,  
Langley Heath, Maidstone, Kent ME17 3JY

PROJECT NO: 2223

INSPECTOR: M Maclaren

SHEET: 6 of 8  
DATE: 11 10 2022  
(11.00am)

Rev A



Frame No: 07  
Location: The Cold Store, Butlers Farm, Horseshoes Lane, Maidstone, Kent ME17 3JY  
Description: A view inside the Store of the rear right hand corner from floor to ceiling with metal faced wall panels

Date: 11/10/22

REPORT ON: The Cold Store, Butlers Farm, Horseshoes Lane,  
Langley Heath, Maidstone, Kent ME17 3JY

PROJECT NO: 2223

INSPECTOR: M McLaren

SHEET: 7 of 8  
DATE: 11 10 2022  
(11.00am)

Rev A



Frame No: 08  
Location: The Cold Store, Butlers Farm, Horseshoes Lane, Maidstone, Kent ME17 3JY  
Description: The same corner as in photo 07 showing how the timber bins would be stacked filled with fruit  
Date: 11/10/22



REPORT ON: The Cold Store, Butlers Farm, Horseshoes Lane,  
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PROJECT NO: 2223

INSPECTOR: M Maclaren

SHEET: 8 of 8  
DATE: 11 10 2022  
(11.00am)

Rev A



Frame No: 09

Location: The Cold Store, Butlers Farm, Horseshoes Lane, Maidstone, Kent ME17 3JY

Description: View of the access panel in the flat ceiling giving access to the roof loft space

Date: 11/10/22



Frame No: 10

Location: The Cold Store, Butlers Farm, Horseshoes Lane, Maidstone, Kent ME17 3JY

Description: A closer view of the concrete floor slab, as in photo 07 with a dense float finished surface

Date: 11/10/22

REV A AS SHOWN 15/11/22  
 REV B AS SHOWN 16/11/22

BUTLERS FARM, LANGLEY  
CONVERSION OF BARN

CONSIDER FLOOR LOADINGS

DURING PREVIOUS/EXISTING USE AS A FRUIT STORE  
 (APPLES & PEARS) IN TIMBER FRUIT BINS.

LOADING FOR COLUMNS OF BINS

B | 
$$= 5\text{m} \times 390\text{kg} \times \frac{10}{1000} \div (1.22\text{m} \times 1.06\text{m}) = \underline{15.1 \text{ kN/m}^2} \text{ (1)}$$

BIN AREA

FUTURE LOADING FOR CONVERSION OF A BARN TO A  
 DWELLING:

FLOOR FINISHES -

BOARDING, INSULATION, DPM/DPC - SAY  $0.30 \text{ kN/m}^2$   
 ADD FLOOR TIMING, SAY  $0.30$

LIGHTWEIGHT PARTITIONS - ALLOW  $1.20 \text{ kN/m}^2$

FLOOR IMPOSED LOAD - DOMESTIC  $1.50 \text{ kN/m}^2$

CEILING - ALLOW  $1.00 \text{ kN/m}^2$

$$\underline{4.30 \text{ kN/m}^2} \text{ (2)}$$

NEW USE DWELLING FLOOR LOAD

IS LESS THAN PREVIOUS FRUIT STORE LOAD

B | IE (2) < (1) ;  $4.30 \text{ kN/m}^2 < 15.1 \text{ kN/m}^2$

∴ ASSUME ACCEPTABLE

REV A TOTAL CORRECTED, FROM 3.30 TO 4.30 kN/m<sup>2</sup>  
 REV B - FRUIT BINS REDUCED TO 5.0

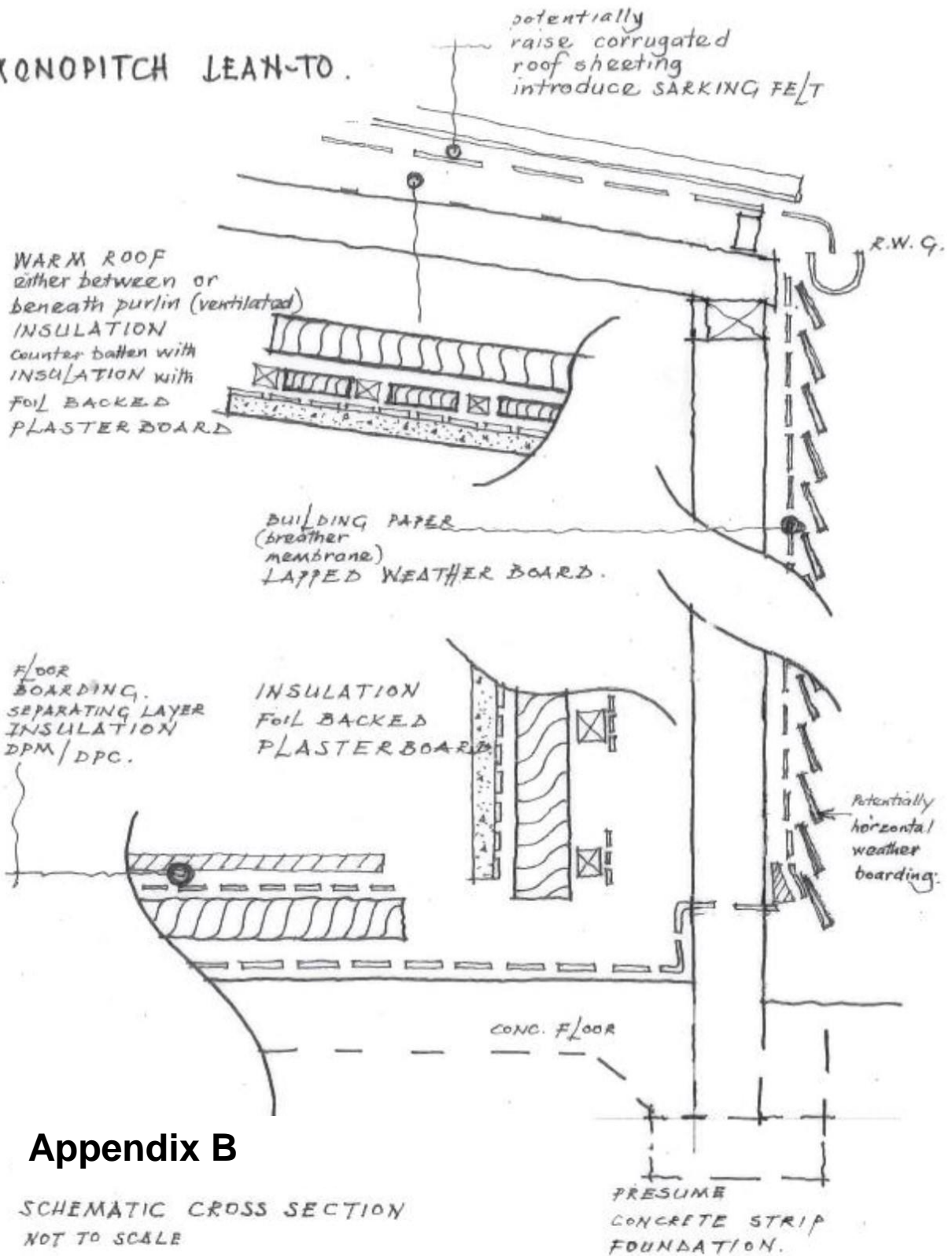


## **APPENDIX B**

### **SCHEMATIC CROSS SECTION**



# MONOPITCH LEAN-TO.



## Appendix B

SCHMATIC CROSS SECTION  
 NOT TO SCALE  
 FOR INDICATIVE PURPOSES  
 subject to building control approval.