

# **Structural Appraisal**

**of**

## **Fair Oak Barn**

**for**

**John West**

**Ref: A18**

**March 2024**

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**Structural Appraisal  
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	Written By:	Checked By:	Date:
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## **1. Introduction**

The barn at Fair Oak that is the subject of this report is Grade II Listed and dates from the eighteenth century. It comprises a threshing barn with a lean-to extension at the rear.

## **2. Inspection**

The building was inspected on 18<sup>th</sup> March 2024 by Charles Blackett-Ord. It was a bright day between showers. There were some young stock in the rear extension and the main barn housed two old cars and the usual clutter found in farm buildings.

## **3. General Description**

The building is constructed of random rubble walling with sandstone dressings. The roof of the main barn is carried on five collar braced trusses, which are probably original, with three purlins to each slope. The rear outshut has a single central truss and two purlins. The roof covering is sandstone flags on the front (east) elevation and slate on the rear, where the main roof runs onto the extension at-slide without a break.

The front elevation has a cart entrance with a dressed stone arch and two blocked doorways. The south elevation has two blocked doorways and a modern central cart entrance with steel lintels over.

The ground around the rear of the building is saturated.

## **4. Structural Defects**

### **4.1 Foundations**

The foundations have not been exposed or inspected, but some subsidence has occurred on the north-west corner of the main barn. The ground is very wet in this area, which could be the cause of the problem. The area should be drained and allowed to dry out. Steel ties should be introduced as mentioned below.

### **4.2 Walls**

The south-east corner of the main barn has been damaged by vehicles. The collapsed area should be rebuilt, and a kerb introduced to keep vehicles away from the wall at this point.

Both of the main walls of the barn are leaning to the east. The east wall by up to 100mm, and the west wall by 150mm adjacent to the opening to the rear extension. This movement has opened up the junction between the rear extension and the west barn wall, which is not bonded in.

The arch over the cart entrance is missing a voussoir stone, and the masonry above has dropped as a result. The inner half of the wall over the opening is carried on a curved timber beam.

#### **4.3 Roof**

The roof of the main barn is carried on five collared and tie trusses. The two at the south end have had their ties reinforced with additional timber. The central truss has a rotten tie beam where its west end bears on the wall. The second truss from the north has wet rot at its apex, affecting the principals, and the adjacent ridge pieces. The north end ridge too has been affected by wet rot. Otherwise, the purlins appear to be sound, but this can only be confirmed after the slating has been stripped and the tops of the purlins can be inspected.

The truss in the outshut is suffering from rot and the tie beam has deflected excessively.

### **5. Structural Repair Recommendations**

The proposed repairs are shown on Drawing No. A18/01.

#### **5.1 Walls**

The south-east corner of the main barn should be re-built, and a kerb introduced to keep vehicles away from the corner.

The cracking in the north wall should be pointed up and steels introduced across the gable wall to prevent further movement.

The rear extension should be tied on to the west wall as shown on the drawing. The entrance arch should have its missing voussoir replaced.

#### **5.2 Roof**

The two roof trusses that need repairing are shown on the drawings. In addition, two ridge pieces should be like for like replaced.

The truss in the extension should be replaced.

#### **5.3 Drainage**

The area around the west and north sides of the barn should be drained.

**6. List of Photos**

Photo 1: Main Cart Entrance

Photo 2: Cart Entrance to Rear Outshut

Photo 3: Roof Looking South

Photo 4: Roof of Outshut

Photo 5: Central Truss End Failure

Photo 6: Truss No. 4 - Apex Timber Rot

Photo 7: South Gable Wall

Photo 8: Collapsed South-East Corner

Photo 9: North Gable Wall



Photo 1: Main Cart Entrance



Photo 2: Cart Entrance to Rear Outshut



Photo 3: Roof Looking South



Photo 4: Roof of Outshut



Photo 5: Central Truss End Failure



Photo 6: Truss No. 4 - Apex Timber Rot





Photo 7: South Gable Wall



Photo 8: Collapsed South-East Corner



Photo 9: North Gable Wall

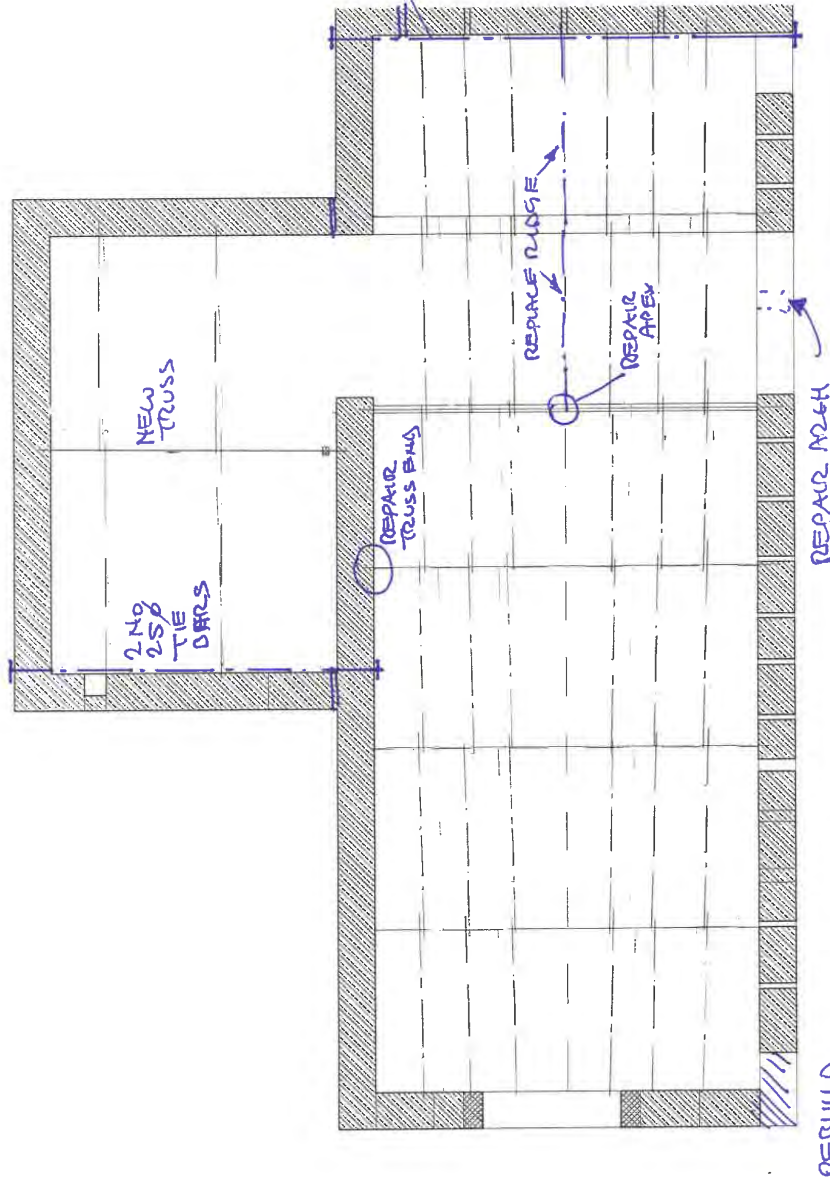
**7. List of Drawings**

A18/01 Structural Repairs – Plan

A18/02 Timber Repairs

A18/03 Masonry Tying

NORTH 



A18/01

BARN AT FAIR OAK FARM  
STRUCTURAL REPAIRS - PLAN

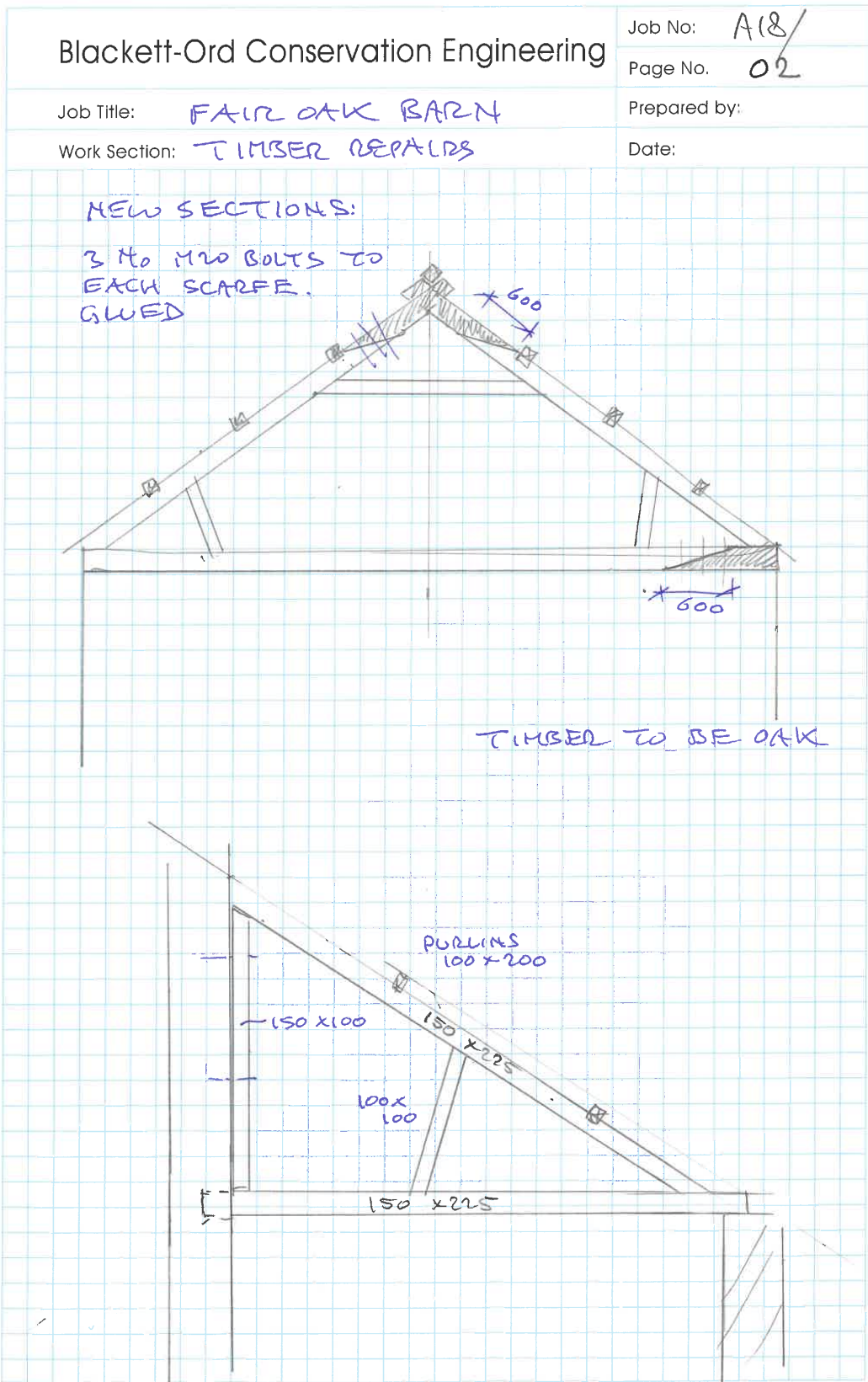
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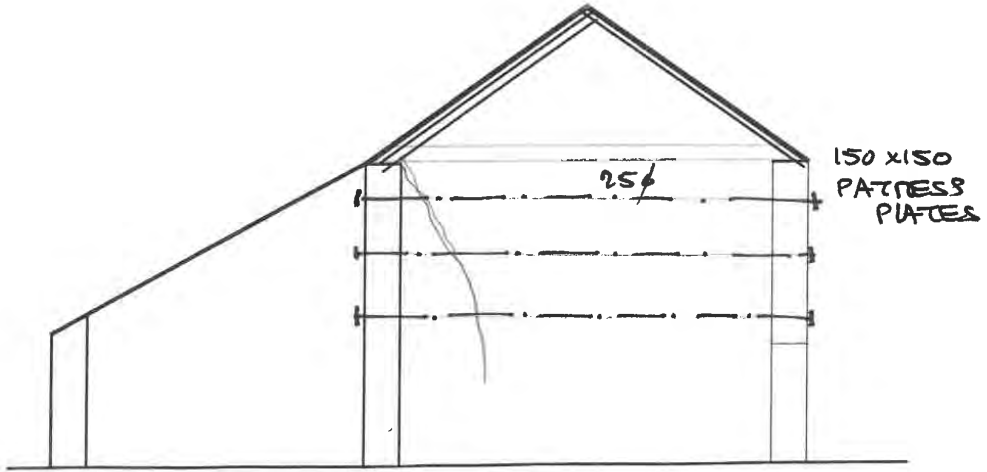
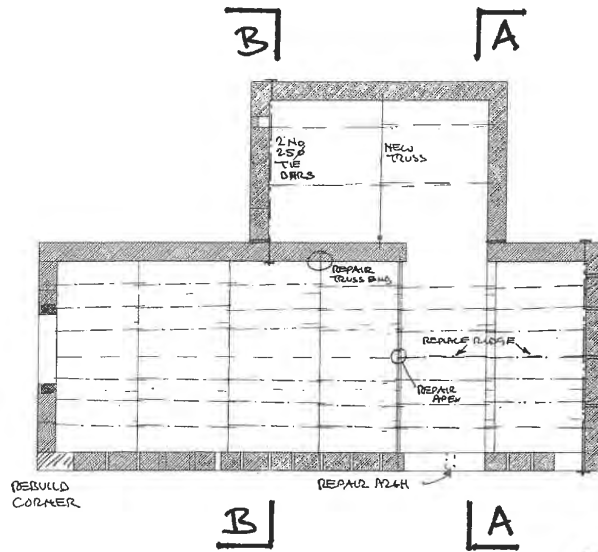
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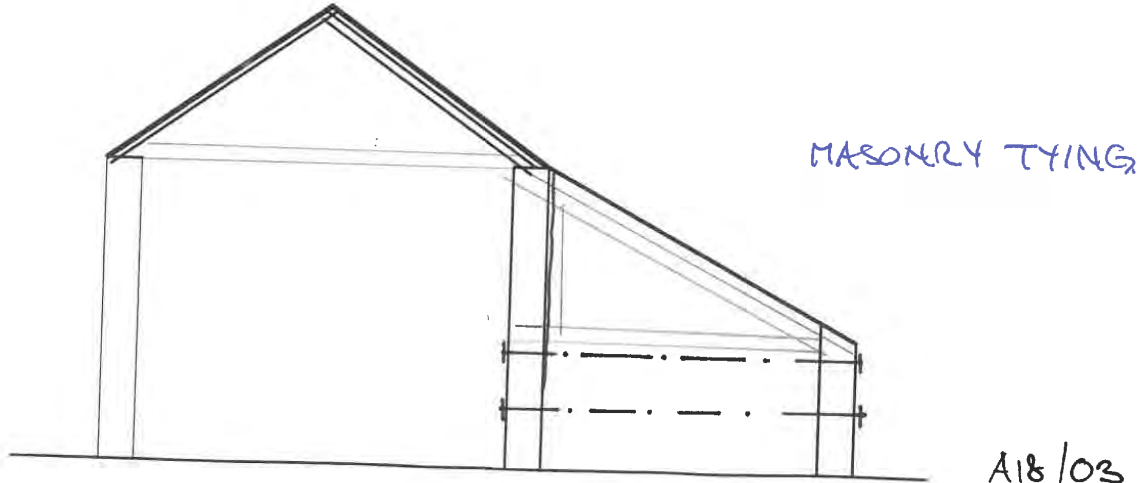
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SECTION AA



SECTION BB

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