



**Lane End Farm**  
**Conversion of garage building to dwelling and the installation of office and toilets into the existing barn.**

## **Assessment of Existing Buildings**



**Hurst and Chunal Moor Management Group**  
**Additional Accommodation at Lane End Farm**



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Conversion of garage building to dwelling and the installation of office and  
toilets into the existing barn.**

**Garage Building.**

This building is approximately 13.65m long by 6.4m deep. The east side has a full height opening 11.35m long with a single supporting column approx one third along the length. The roof over this opening is supported by a 350 deep x 225 wide timber beam.

The roof of asbestos cement sheeting is supported on timber purlins which in turn are supported by two timber centre post trusses and the end gable walls.

The trusses are constructed out of 225 x 75 timbers and the purlins are mainly 100 x 100 sections.

The roof as built is sound and strong. It is level and true, its design being adequate for the materials used, its size and exposure.

The walls as existing are over engineered for the size and type of building that it is, the wall thickness being about 0.5m.

None of the foundations were opened up at this time but as the building is level and true and as there are no signs of any cracking or movement anywhere it is assumed that the foundations, whatever they are, are adequate for the building.

The building is difficult to date but in terms of the other buildings on the site it is modern and I would suggest about the middle of the 20<sup>th</sup> century, that is pre the hot summers of 1995 and 1997 when a lot of buildings with shallow foundations suffered extensive movement and cracking.

As stated above there is no such cracking on the building hence the conclusion on the foundations.

The building is set partially into the hill side, there is a change in level of about a meter from front to back, the back wall acting as a retaining wall for the solid floor.

The floor contains a pit as this building seems to have been built as a garage or vehicle maintenance area.

The walls are about half a meter thick, the outer skin is of natural stone 150mm thick. This stone is a mix of regular 150mm coursed rock faced stone blocks between 225 and 450mm in length and square cut stone, 150 x 150 smooth on all faces in lengths from 450mm to 900mm.



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The make up is of a full brick and a half, the internal walls being fair faced brick work and easily seen at the reveals. It is assumed (as the wall was not opened up at this time) that the wall is of a cavity construction, the inner leaf being of 9 inch solid brick.

The west elevation has three windows 1800 long by 1200 high which go to eaves level, between these windows in the middle third positions and two columns, being 480 x 590mm. These take the ends of the roof trusses but again they over engineered for this purpose. They do though give good bracing for the retaining wall.

This wall though is only on three sides of the building, the east side being mainly open with two returns of just over a meter. Other walls are of lightweight timber and they have no structural integrity.

### **Conversion.**

The proposed conversion to a dwelling can be undertaken within the shell of the building, the foundations, walls and existing floor being more than adequate to take the loading of a dwelling and the new proposed roof.

The new design shows a stone flag roof which will be considerably heavier than the asbestos cement roof as existing.

A stone flag roof also has a totally different structure than a stone roof so this element of the building will have to be changed and built new, but in a traditional way.

The two main trusses can be strengthened and up graded (or replaced) as King Post type trusses to take new purlins and rafters for the new roof finish (although the materials may be second hand.)

As stated above the walls are over engineered as existing and this new roof will have no effect on the remaining structure that is more than adequate to take the new loads.

The building is strong and stable and can be converted without any replacements other than the roof.

### **Barn Building.**

The barn building is linked to the existing house and comprises of two elements which I will refer to as the 'front barn' the one in line with and adjacent to the house and the 'back barn' which is the second building abutting and behind (to the north of) the 'front barn'. Although these buildings connect and have a common wall they are structurally independent.

Unlike the garage building the proposed works within these buildings are for administration and business compliance only and are not part of a dwelling.



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In those terms the structural integrity of these buildings is not as critical but of course the buildings have to be safe.

The front barn is the older of the two and could date back to the 19<sup>th</sup> century (if not earlier.) It is constructed of, now rounded grit stone; rock rubble squared walling brought to courses, the course height being small for the size of building. (Most likely the stone left over after the house was built.)

At ground level much larger stones can be seen and it is assumed that this is the foundation for the building. The walls are all 600mm+ thick and again assumed to be traditional rubble filled stone walls. Externally there has been ribbon pointing which is causing a speeding up of general decay. The building should have this pointing removed and a sand grit, lime mortar used to re point it.

Internally all the walls are fair face stone. These walls have not been maintained for sometime. As a matter of general maintenance a full clean down and re point is recommended.

There are some areas of movement adjacent to the large front door, over the right hand end of the steel support and below the beam on the left.

These areas are local and it is believed that the raking out and re pointing of them should stabilise them.

The internal wall between the 'store' and the 'hanging room' which is a mixture of materials should be strengthened and up graded as part of the development and this will buttress the left hand side of the door.

The west gable has a vertical crack between the two windows. This I believe relates to the time these windows were put in, they are not original. The stone in this area is not well laid and the cracking has followed the mortar line. It is likely that this is a one off movement and that pointing will fully stabilise the wall

The cracks in the gable at high level seem to relate to the end cramps to the roof, the cracks follow the points where these cramps have been driven into the wall. The cramps, being iron have rusted and expanded creating the cracking. It is recommended that the cramps be replaced with some stainless steel alternatives.

Removal of the iron cramps and re pointing will stabilise this area.

To the north side the roof extends as a cat slide and this is dealt with by simple timber beams resting on walls and pillars.

Although there are variations and some cracking in these walls they are all structurally secure and no areas will require rebuilding.



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The roof to the front barn is finished in stone flags that are supported on large purlins (100 x 75) on purlins supported at the end gable and two king post trusses. The roof is in good condition and will require no additional work to carry out the proposed development.

Part of the link element to the back barn has an area of asbestos cement roof which will require maintenance or replacement.

The back barn which has animal stalls at ground level and a hay loft above has been extended, created out of an older smaller building. Two of the walls are set into the ground, the north end floor level being a meter below the external ground level. It can be seen that the south ends of the east and west walls of the back barn are of different stone to the rest of the building which is of squared stone and some ashlar elements that look like left over's from another project, similar to the stone of the garage.

Although there are some pointing issues this stone work is in good condition, no work is required for the building to be used for storage.

The internal stalls may be removed if required as these are none structural. Some internal pillars hold the first floor storage area, this was not accessed.

The roof to this barn is of asbestos cement sheets, the roof being fair and true. There were no signs of water ingress internally.

Between the two barns there is an integral gutter. At the time of inspection this had sprouting grass and needed cleaning.

### **In Conclusion.**

All three buildings inspected are structurally sound.

The garage can easily be converted though the introduction of a stone roof will require a new/strengthened roof structure.

The other two barns are structurally satisfactory requiring only pointing, this is not essential to maintain structural stability at least for a number of years.

The proposed use will not effect the building structurally or it's all round appearance.

These proposals represent a sound economic use of what are only partially used buildings that are in a sound and stable condition.