

Appendix VI

Report on Roof Defects (Village Hall)

Preamble

We were asked to examine the defective roofs, parapet walls and surface water drainage system and report upon their condition. For obvious reasons the address of the property is fictional.

Roof Defects: The Village Hall, Hall Lane, Blankton, Kent

1.0 INTRODUCTION

1.1 *Background*

Further to our meeting on (insert date) and in accordance with your instructions contained in your letter dated (insert date) we have examined the following portions of the above property in order to advise you as to their condition:

- (a) Main slate roof.
- (b) Roof trusses and other supports internally.
- (c) Small asphalt flat roofs to the north and south sides of the hall.
- (d) Gutters and rainwater pipes.
- (e) Parapet walls and copings to all roofs.
- (f) Surface water drainage system.

As authorised in your letter, we have obtained the services of a builder to provide attendance to enable us to gain access to the roofs and to test the drainage system.

1.2 *Description*

The hall consists of a single storey brick structure built about 1895. The main roof to the hall is slated and there are two brick gable walls to the north and south ends of the hall finished with brick parapets and stone copings. There are two small asphalt covered flat roofs at the north and south ends of the building.

2.0 ROOF DEFECTS

2.1 *Main roof (internally)*

There are four timber roof trusses supporting the purlins and rafters. Access to each truss was obtained by ladder. The sizes of the truss members and purlins are adequate for the span of the roof and the general condition of the timbers is sound having regard to the age and character of the building. The rafters are lined internally with tongued and grooved matchboarding. It was, therefore, impossible to examine the rafters internally. However, a close inspection of the boarded slopes internally revealed three small damp stains. The problem is no doubt due to damp penetration in the past caused by some defective slates. The boarding was dry at the time of our inspection, but the condition will no doubt deteriorate unless the slate problem is dealt with (see item 2.2 below).

2.2 *Main roof (externally)*

The main roof is covered with Welsh slates. Both slopes were closely examined from roof ladders. In accordance with our agreement four small areas of slating were removed to enable the battens and rafters to be examined. The areas uncovered coincided with the damp stains on the inner face of the boarding. The general condition of the slates is not satisfactory. The following defects were noted:

- (a) The slates are principally affected around the nail holes. This indicates 'nail sickness' and means that a large number of fixing nails have failed. This was confirmed by the large number of slates supported by zinc clips.
- (b) Some of the slates near the ridge were soft as a result of atmospheric pollution causing a breakdown of the bond between the laminated layers.
- (c) There have been extensive renewals carried out to isolated slates. Where this has occurred the slates are in reasonable condition.
- (d) Several slates to both slopes are cracked and chipped. This is often caused by high winds lifting the slates without dislodging the nails.

Due to the condition of the slates the battens show signs of wet rot in several places and it will be necessary to renew them in order to provide a firm fixing. As far as could be ascertained the rafters and boarding have not been affected, the minor penetration having been contained in the battens. The small damp stains visible on the boarding internally have not seriously affected the boarding or rafters and can be dealt with during normal redecoration internally. You will, of course, appreciate that the examination was of a small localised nature and would not have facilitated a complete examination of all the rafters and boarding. The ridge is covered with angular ridge tiles fixed with iron nails. Apart from three or four loose tiles the general condition is satisfactory.

The joints between the roof slopes and parapet walls are formed with cement fillets. The fillets have shrunk and cracked and small pieces have broken away in several places.

Due to the random disrepair as stated above and because of the evidence of damp penetration it is our opinion that total recovering of the two roof slopes including new battens should be carried out as soon as possible. To prevent a recurrence of damp penetration in the roof timbers we recommend the use of roofing felt laid over the rafters. We also recommend the provision of zinc flashings in lieu of cement fillets. Flashings are more efficient than the fillets and have a longer life. They also allow for the slight movement that may take place in the timber roof structure.

With regard to the Welsh slates we recommend that consideration be given to recovering the west slope with new Welsh slates and the east slope be recovered with good salvaged slate, i.e. the best taken from both slopes and the residue cleared away. The existing angular ridge tiles can be refixed.

Having stripped both slopes the opportunity would arise for the timber structure to be inspected before the coverings are reinstated. It would also be our recommendation to include a provisional sum in any future specification. This would allow for any timber repairs it is not possible to anticipate at this survey stage. All obvious repairs will be included in the estimated figure shown in the summary.

2.3 Small asphalt flat roofs to north and south elevations

We are unable to give a report on the structural timbers to the flat roof on the north side as no means of access is provided and inspection is not possible without removing the plaster ceiling below. We understand that you are not agreeable to carrying out such work and to bearing the cost involved. However, 'soundings' were taken at various points on the ceilings and we were able to establish that the supporting structure consisted of timber joists. We were able to calculate the depth of the joists and test for vibration. This investigation revealed that the capacity for roof loading is adequate.

With regard to the structural timbers to the flat roof above the entrance (south side) our builder was able to remove one of the insulation board panels without causing damage. The roof consists of boarding laid on 180 × 50 mm timber joists. The joists and boarding are satisfactory having regard to the age and character of the building. There was no evidence of damp penetration. Calculation of the size of the joists compared with the span is adequate.

We understand that the two asphalt roofs were renewed about 10 years ago and apart from the two minor faults described below the asphalt is generally in good condition.

Ladders appear to have been used for maintenance work or window cleaning to both flat roofs. The ladder feet have caused small depressions in the asphalt but have not caused any serious deterioration of the surface. This defect is fairly common in asphalt roofs. The asphalt upstands to the parapets of both roofs were examined and in both cases a length about 1 m has slightly sagged no doubt due to differential thermal movement. The defects are not serious and can be easily made good. However, this type of roofing repair is usually carried out by a specialist. The falls to the gutters are satisfactory and a metal drip to direct the rainwater into the gutter has been provided in accordance with standard practice.

Two criticisms of a general nature might be made concerning the asphalt. If regular maintenance traffic is anticipated it would be advisable to provide duck boards. This would allow means of access and avoid damage to the roofing material. Secondly, the surface of a flat roof being fully exposed will gain heat by solar radiation. With an existing roof the use of solar reflective paint is generally beneficial. This could be done at a moderate cost and we would be pleased to supply details of a suitable treatment.

2.4 Parapet walls

The brick parapet walls to the main roof and asphalt roofs were closely examined. No damp course had been provided below the coping stones, but there was no evidence of damp penetration. The brickwork and coping stones are in a satisfactory condition. The condition of the brickwork and coping stones at present does not justify the insertion of a damp course, but you must be advised of the possibility arising in the future. Small areas of loose pointing to the joints in the coping stones and the inside faces of the brick parapets require some attention.

2.5 Gutters and rainwater pipes

The gutters and rainwater pipes are of cast iron and are probably the original. They were examined from ladders and found to be in poor condition. The supporting gutter brackets were badly corroded and there is evidence of leakages from the joints. The gutter interiors show signs of corrosion. This was particularly noticeable in the gutters serving the main roof. Several lengths of gutter are out of alignment, mainly due to the defective brackets. Rainwater seepage from the gutters has affected the fascia board and there was evidence of wet rot. All the soffit boards were satisfactory, but require repainting.

The rainwater pipes were not properly jointed and in some cases the backs of the pipes were split due to corrosion. This is not an unusual problem where pipes are close to the wall. Access for painting is obviously restricted. There were clear signs that rainwater percolates through the back of the pipes and runs down the walls. Accordingly, we advise the following replacements as a matter of urgency:

- (a) That all rainwater gutters are replaced with 125 mm half round PVC system. All gutter outlets to be fitted with plastic balloons to prevent possible blocking by leaves and other debris.
- (b) That all rainwater pipes are replaced with 76 mm diameter PVC pipes with all necessary offsets and fixing clips.
- (c) The softwood fascia board to both sides of the main roof to be replaced and treated with a preservative before fixing.

Plastic rainwater fittings are relatively trouble free and require little, if any, maintenance.

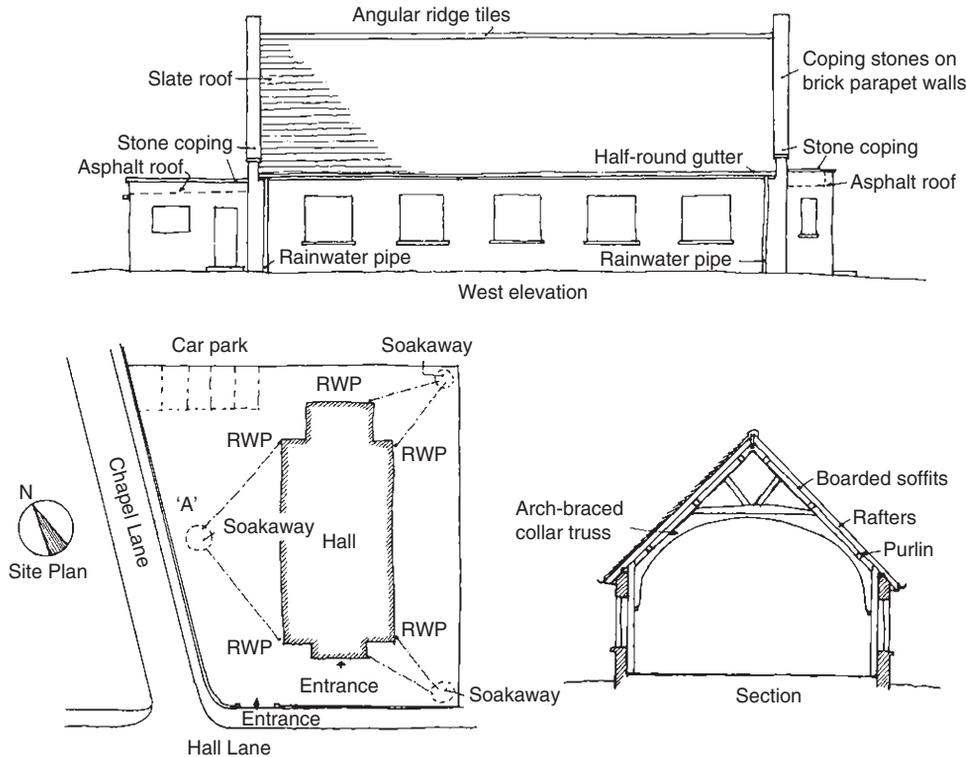


Figure AVI Details of roof and surface water drainage system referred to in Appendix VI

2.6 Surface water drains and soakaways

As with many cases of soakaway drainage, the rainwater pipes have been connected direct to the drain with no access. This method has several disadvantages as the condition of the drain is unknown and having no clearing access the silt will gradually build up in the drain and rainwater pipe. This defect is not usually noticed until the rainwater overflows from the next pipe joint up the wall. The usual signs are damp patches on the external wall surfaces. Unfortunately this defect has occurred in three of the rainwater pipes. As agreed the builder exposed the lower section of three of the rainwater pipes and a portion of the drain on the west and east sides of the building. In all cases the drains were completely blocked and out of alignment. The jointing material to the drain pipes has shrunk and cracked and in some places has completely broken away.

We located the approximate position of the soakaways and judging by the subsidence in the ground in that area the soakaways are now ineffective. We removed the top soil to the soakaway marked 'A' on the attached plan and it was found to be in a very poor condition and completely silted up. Experience has shown that any soakaway constructed over 50 years ago is either (a) silted up, (b) collapsed, or

(c) defective due to root penetration. Taking into consideration the age of the system and defects already found it would seem that the whole of the surface water system is in the same deplorable condition. We, therefore, advise that a completely new surface water system be installed. The system we propose will consist of the following:

- a) PVC rainwater shoe fitted with a metal sealing plate for access at the foot of each rainwater pipe. The rainwater pipe being connected to a vertical back inlet.
- b) New 100 mm diameter drains will be required and it is suggested that PVC is used in long lengths to minimise the number of joints (this will reduce labour costs).
- c) Replace the soakaways. It will be necessary to contact the local authority regarding the method of construction and siting in relation to the building.

3.0 Summary

We trust the foregoing descriptions are clear. As you will have observed there are a number of faults in the roofing and drainage system which require attention as soon as possible. To carry out the roof recovering work, repairs to asphalt, repointing parapet, renewal of rainwater systems, renewing fascia boards and surface water drainage indicated within this report would necessitate a budget in the region of £..... This figure is approximate and does not include VAT or professional charges. As agreed we have included a provisional sum of £..... to cover any unforeseen works to the main roof timbers. This sum would be expended in whole or in part during the course of the works (see item 2.2 above).

In terms of programming the works it is suggested that upon receipt of your instructions to proceed a period of approximately 5 weeks would elapse for preparation of a specification, tendering and for analysing the results and submitting a report.

We will now await your further instructions. Should you wish to discuss this matter further, please make an appointment to see the writer.

Signed:.....(Surveyor)