

HOPE CHURCH HIGH STREET MERTHYR TYDFIL ROOF SURVEY



AUGUST 2022

Chartered Quantity Surveyor
Construction cost and design consultant

Commercial Drone Pilot

The Old Pharmacy, Monksland Road, Surlage, Gower, Swansea. SA3 1AY. Registration Number 04955206
Tel. 01792 720010 Mobile 0773 049 0346. E-mail: info@robertfisherlimited.co.uk

INTRODUCTION

Robert Fisher Limited were asked to carry out a detailed roof survey as part of a full Quinquennial survey. The Quinquennial Survey is to be carried out later, however, it was necessary for the main church roof to be surveyed as soon as was practical.

It was agreed that Robert Fisher of Robert Fisher limited would visit the church and carry out a detailed drone survey of the roof, taking photographs and videos of all areas of the roof.

The church is a traditionally erected church with a dual pitch roof with some additional feature projections all being covered with natural slates. In the front of the church are two corner towers with multi-faceted roofs over, with two large dormers one on each pitch of the main roof approximately half-way along the roof.

THE SURVEY:

Date: The survey was carried out on Tuesday the 2nd August 2022.

Time: Robert Fisher and his assistant arrived on site at approximately 9.30am.

Present: Mr Robert Fisher, (Director), Mr. Derick Styants (Assistant).

Mr Clive Williams from Hope Church.

MAIN ROOF:

The North Pitch:

Main roof coverings:

The roof was covered in natural slates, there were however quite a few broken slates, some slates had slipped, and a few were missing.

Although the roof generally provided adequate cover it would require attention in the future as some of the nails holding the slates on were seen to be forming holes in slates on top of them. This occurs when the nails holding the slates onto the roof structure become rusted, and the holes in the slates through which the nails pierce become larger, the slates start to move slightly and then, when they vibrate in high winds the slates above hit the nails holding on the slates below, which can eventually form small holes in the slates above. Regular marks on the slates provide evidence that this deterioration is starting to happen. Some of the slates have had sealant placed over the nail positions.

The ridge tiles all required to be re-bedded and re-pointed. Four had previously been replaced and one was broken.

The roof gutters were made of cast iron and required attention as much rust was visible, and the joints should be checked and resealed.

The eastern eaves have a timber barge board and soffit. These were both in need of replacing or redecorating before they start to decay.

Front Parapet

There is a lead flashing at the abutment with the front stone parapet feature. It appeared to be satisfactory.

The stone parapet capping was covered with moss and lichen so was difficult to see the surface of the parapet stones. I could detect small defects in some of the stones and also, that some of the pointing between the stones was showing signs of weathering. However, it was not currently considered to be in a poor condition, but these are items that will require attention in the future.

There appeared to be hairline type cracks in some of the stones, these were small and were not leading to any significant loss of stability or strength, however, these cracks can become worse over a long period of severe weathering and should be checked in the future when roof repairs are being carried out.

The feature stone spires have lichen in various locations and the surface of the stone is weathered. The level of lichen suggests that the stone surface is deteriorating sufficiently to allow the lichen to become established. There is some delamination of the surface of some of the stones making up the spires, but it is not serious but indicates an ongoing deterioration of the stonework.

The pointing is generally in a reasonably good condition however some areas are now showing signs of decay and will require repointing at some time in the future.

Multi-faceted Tower roof:

The multi-faceted roof is on top of the corner tower. It is generally square on plan however the corners are truncated which creates five sides with a central ridge.

The slates are generally acceptable and generally providing a weatherproof covering, but some are broken, and some have slipped. The roof will require attention at some point in the future.

The lead flashing and stepped flashings between the slates and the wall of the church are all intact and provide an adequate joint.

The hips to the roof are covered with a lead covering-flashing. They look intact however the fixings are indicating deterioration and the fixings look as though they are starting to fail and may require attention. Some of the lead fixings have been painted or sealed with a white sealant indicating that this problem was seen previously.

It was difficult to determine what the valley flashing were made of, it may have been lead or roofing felt but I could not determine its composition. It did however provide an adequate covering to the valley gutter.

The ridge tiles were all similar, but they all needed to be repointed and re-bedded. The finial was also intact but required re-bedding.

The gutters were of a cast iron composition and were now in need of repair as they appeared to be very rusty, and the outside paint was now coming off.

Central Dormer:

This is a dual pitch dormer with lead flashings and a stone parapet fronting the side road. The lead valley flashings were in a good condition.

There were several slipped slates and some broken slates, but the roof to the dormer generally looked weathertight.

The ridge tiles were a mixture of two distinct types suggesting the roof has been attended to in the past. The ridge tiles needed re-bedding and repointing.

Three were damaged and should be replaced when the roof is repaired.

The lead flashing between the slates and the front parapet was in an acceptable condition.

The stone parapet was showing signs of weathering. The pointing was failing in some locations. And will require attention at some time in the future.

Rear Lower Main Extension Roof

The roof over the rear extension is generally oblong on plan with the corners truncated, creating a five-sided roof.

The roof is covered in natural slates which all looked generally acceptable. They were covered with lichen and weather stained but acceptable. Although the roof generally provided adequate cover it would require attention in the future as a few of the nails holding the slates on were seen to be forming holes in slates on top of them. This occurs when the nails holding the slates onto the roof structure become rusted and the holes in the slates through which the nails pierce become large, the slates start to move slightly and then, when they vibrate in high winds the slates above hit the nails holding on the slates below, which can eventually form small holes in the slates above. Regular marks on the slates provide evidence that this deterioration is starting to happen. Some of the slates have had sealant placed over the nail positions.

The hip detailing however was generally in a poor condition. Some of the lead flashings covering the hips had slipped, some of the supporting timbers were visible and much use of grey flashing tape had previously been used to make temporary repairs.

At the abutment of the slates and the gable wall there was no lead flashing visible, however a small cement fillet could be seen. If the roof is repaired and the roof coverings replaced new stepped flashings should be introduced.

A gas flue protruded through the roof and had a suitable flashing, and all looked acceptable.

The gutters were in black plastic and looked acceptable.

The rear gable wall exposed between the extension roof and the main roof had several small distinctive cracks and required re-rendering and re-decorating.

MAIN ROOF:**The South Pitch:****Main roof coverings:**

The roof was covered in natural slates, there were however quite a few broken slates, some slates had slipped, and a few were missing. Although the roof generally provided adequate cover it would require attention in the future as many of the nails holding the slates on were seen to be forming holes in slates on top of them. This occurs when the nails holding the slates onto the roof structure become rusted and the holes in the slates through which the nails pierce become large, the slates start to move slightly and then, when they vibrate in high winds the slates above hit the nails holding on the slates below, which can eventually form small holes in the slates above. Regular marks on the slates provide evidence that this deterioration is starting to happen. Some of the slates have had sealant placed over the nail positions.

It would appear this roof has been repaired in the past as there are areas of different shades of slates that do not match the others. It appears that the south side of the roof has in the past been subject to a higher level of weathering due to its orientation and being close to another high building.

The roof gutters were made of plastic and looked acceptable.

Front Parapet

There is a lead flashing over the slates at the abutment with the front stone parapet feature. It appeared to be satisfactory.

The stone parapet capping was covered with moss and lichen so was difficult to see the surface of the parapet stones. I could detect small defects in some of the stones, and also, some of the pointing between the stones was showing signs of weathering. There was some vegetation growth from the joints under the parapet stones that will require removing and treating. However, it was not currently considered to be in a poor condition, but these are items that will require attention in the future.

There appeared to be hairline type cracks in some of the stones, these were small and were not leading to significant loss of stability or strength, however, these cracks can become worse over a long period of severe weathering.

The feature stone spire has lichen in various locations and the surface of the stone is weathered. The level of lichen suggests that the stone surface is deteriorating sufficiently to allow the lichen to become established. There was some vegetation growth from the joints between the stones that will require removing and treating. There is some delamination of the surface of some of the stones making up the spire, but it is not serious but indicates an ongoing deterioration of the stonework.

The pointing is generally in a reasonably good condition however some areas are showing signs of decay and will require repointing at some time in the future.

Multi-faceted Tower roof:

The multi-faceted roof is on top of the corner tower. It is generally square on plan however the corners are truncated which creates five sides with a central ridge.

The slates are generally acceptable providing a weatherproof covering, but some are broken, and some have slipped. Some of the slates have had sealant painted over the nail holes. The roof will require attention at some point in the future.

The lead flashing and stepped flashings between the slates and the wall of the church are intact and provide an adequate join.

The hips to the roof are covered with a lead covering-flashing. They look intact however the fixings are indicating deterioration and the fixings look as though they are starting to fail and may require attention.

It was difficult to determine what the valley flashing was made of it may have been lead or roofing felt, but I could not determine its composition. It did however provide an adequate covering to the valley gutter.

The ridge tiles were all similar, but they all needed to be repointed and re-bedded. The finial was also intact but required re-bedding.

The gutters were of a mixture of plastic and cast-iron composition and were in need of some repairs as the cast iron gutters appeared to be very rusty, and the outside paint was now coming off.

Central Dormer:

This is a dual pitch dormer with lead flashings and a stone parapet fronting the side road. There were several slipped slates and some broken slates, but the roof to the dormer looked weathertight. Some of the slates have had sealant placed over the nail positions. The lead valley flashings on the east side had been replaced or recovered with flashing tape as I could not determine the actual material used. This was in an acceptable condition.

The lead valley flashings on the west side had been partly repaired with flashing tape but generally was in a poor condition. A small piece of slate was wedged in the valley gutter.

The ridge tiles were all the same tiles however they needed re-bedding and repointing. The lead flashing between the slates and the front parapet upstand was in an acceptable condition.

The stone parapet was showing signs of weathering and the pointing was failing in some locations.

There appeared to be hairline type cracks in some of the stones, these were small and were not leading to significant loss of stability or strength, however, these cracks can become worse over a long period of severe weathering.

TWO SMALL ROOFS OVER THE FRONT PROJECTIONS:

The sloping roofs are both covered in lead, they are dual pitched with cast iron gutters and lead flashings with a small projecting parapet wall.

Right hand roof:

The lead roof covering has been repaired in the past and its replacement should be considered in the longer term.

In the lower shorter left-hand junction of the roof covering and the church wall, vegetation had established itself. It is likely the gutter outlet is blocked allowing the accumulation of debris giving rise to vegetation becoming established. The drainpipe should also be checked to ensure it is clear for rainwater.

The cast iron rainwater gutters should be repaired or replaced.

Left hand roof:

The lead roof covering has been repaired in the past and its replacement should be considered in the longer term.

In the lower shorter right-hand junction of the roof covering and the church wall, vegetation had established itself. It is likely the gutter outlet is blocked allowing the

accumulation of debris giving rise to vegetation becoming established. The drainpipe should also be checked to ensure it is clear for rainwater.

The lead flashings have become loose and need to be repaired.

The cast iron rainwater gutters should be repaired or replaced.

Parapets:

The stonework should be repaired as previously mentioned for other areas of stonework.

CONCLUSION:

The natural slate roof coverings are now nearing the end of their working life and signs of deterioration of the slates are prevalent. The roof coverings have probably been repaired several times in the past and this is evident with the different coloured slates and the sealant covering some of the nail holes and fixings. The roof is currently weathertight although some small leaks may occur during prolonged inclement weather.

The gutters on the south side have been replaced with plastic, possibly an indication that this side is subject to the prevailing weather, which is the same side that more slate repairs have occurred, and where more sealant over nail holes and the like can be seen.

The dormer and the multi-faceted tower roof have both suffered from weathering more than the north side and the flashing and slates can be seen to have deteriorated more than the north.

I could not see any deflection in the roof covering across the roof, or the ridge line, so it is likely that the supporting roof timbers are satisfactory. However, as with all things, especially roofs, only by the removal of the existing roof coverings and with close examination will the condition of the supporting timbers be determined.

SOLUTION:

The main roof and the lower extension roof will both need to be recovered in the foreseeable future, possibly five to ten years, or earlier if an extreme weather condition forces the repairs sooner. At the same time the stonework will require to be repaired where necessary, however, the full extent of the repairs or replacement of the stonework can only be truly determined on close examination from a scaffold.

All the lead flashings and supporting timbers etc will also have to be repaired.

During the roof covering and lead work replacement then new Hi-Tec breathable lightweight multi-foil insulation underfelts and more modern high density ridged foam insulation materials can be introduced to reduce heat losses, however this is dependent on the sizes of the structural roof timbers.

During these works the introduction of solar panels should be considered supported with battery storage, however, several specialist Solar Panel Installation consultants should be approached for advice.

If a Solar Panel consultant is approached, then it is worth mentioning that it may be preferable to recess the solar panels which will reduce area of slates to be replaced and may offset the repair costs.

COSTS:

Construction costs are at present rising at alarming rates, but hopefully these may settle down in the coming year. Therefore, the costs given below are only an indicative guide and a likely indication of the sort of costs that you may well encounter if the roof is recovered and the stonework repaired as one contract.

1. Scaffolding.	£20,000.00
2. Recover roof with natural slates, flashings, insulation etc.	£75,000.00
3. Repairs to the stonework. The full extent is currently unknown, therefore, this is only a suggested cost, it may be higher or lower and will only be known when the scaffold is erected.	£25,000.00
4. Possible repairs and replacement of the structural timbers.	£10,000.00
5. Possible road closure notices and appropriate license.	£5,000.00
6. Possible consultants' costs, Building Control, Planning etc. say 8%	£10,800.00

VAT may be applied, if so the additional cost would be: £29,160.00

Total likely costs inclusive of VAT. £174,960.00

I would suggest that a cost of approximately £175,000.00 to £200,000.00 Should be considered as the level of costs for the repairs should be allowed for.

Qualifications to the estimate:

The costs suggested, reflect a broad-brush approach being based on a visual survey carried out by a drone. The costs are indicative and reflect the sort of works that will be required to repair the roof for the longer term. They are suggesting a tender that would most likely be returned at this third quarter in the year and are not seen as actual costs but only as a suggested area of costs to be incurred. It is understood that until the roof coverings are taken off will the underlying roof structure be visible, and only then will the condition of the supporting timbers be revealed. Similarly, when the scaffolding is erected a close examination of the stonework will determine the extent of stone repairs required. It is likely that inflation will increase these costs over the coming year.

Signed.**Dated: 18th August 2022**

**Robert Fisher BSc MRICS
On Behalf of Robert Fisher Limited**

PHOTOGRAPHS

I attach below some typical photographs of areas of the roof. Full details of all the photographs taken are included on the SD card.

Overview of the roof.



View from the front.



Front Parapet.



**HOPE CHURCH, HIGH ST. MERTHYR TYDFIL.
Main Roof North Pitch**

Project:704



Main Roof South Pitch



Rear Lower Roof Over Extension

