



DISUSED WHALING STATIONS

Grytviken Harbour Gazetteer

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Gazetteer, July 2011

This gazetteer is prepared in conjunction with a general report into the condition of the disused whaling stations. This report was prepared following a series of inspections in late October and early November 2010. The report was prepared for the Government of South Georgia and the South Sandwich Islands (GSGSSI) who have original copies of the main report and the various gazetteers.

The gazetteers are not intended to be a comprehensive survey of the buildings and structures, but they do represent a snapshot of the condition of the sites at a particular moment. Additional photographs are available and have been deposited with the GSGSSI.

The survey team consisted of:

Pat Lurcock – Government Officer, GSGSSI
Dave Peck – Clerk of Works, GSGSSI
Tommy Moore – Thames Laboratories
Michael Morrison – Purcell Miller Tritton LLP

The surveys at each site were necessarily very brief and were intended to make a general assessment of the overall condition of the site and a specific assessment of the asbestos hazard. Thames Laboratories have reported specifically on the asbestos and their report is also lodged with GSGSSI.

The timetable for the visits was:

Grytviken – 29 October, 5/6 November 2010
Husvik – 30 October 2010
Stromness – 31 October, 4 November 2010
Leith – 1/2 November 2010
Prince Olaf – 3 November 2010

Generally the visits were made between 0800 and 1700 hours and the weather was uniformly good.

Please note that throughout the report the use of north, east, west and south should only be taken as approximate to indicate the side of the structure that has been photographed. This is to avoid the cumbersome usage of northwest, west northwest etc. Northwest, southwest etc., are only used when there would be confusion over which face of the structure is being referred to.

Please note that attached as an appendix to this gazetteer is a report on the work carried out to the Whalers' Church during the 1990s. This report has been prepared by Robert Burton, formerly the Director of the South Georgia Museum and the photographs have been provided by him.



This location plan is taken from the appendices of the book 'The Shore Whaling Stations of South Georgia' published by Novus Press, 15 September 2004 (ISBN-10: 8270993948) by Bjorn L Basberg. The numbering system for all the structures and the names all replicate those in the book for easy identification and comparison.

- | | |
|---|---|
| 1..... Flensing platform | 49..... Gunpowder Magazine |
| 2..... Plant | 50..... Pump House |
| 201..... Meat plant | 51..... Watchroom |
| 209..... Bone Cookery | 52..... The Dias - sealing vessel |
| 215,216... Guano Factory | 53..... The Albatros - sealing vessel, former |
| 220,221... Guano Store | catchel boat |
| 222..... Boiler house | 54..... The Petrel- catcher boat |
| 3..... Blubber cookery and Boiler House | 55..... The Louise - Barque |
| 4..... Separator and Power Plant | 56..... Motorboat |
| 5..... Glue-water Plant | 57..... Motorboat |
| 6..... Carpenter's and Pattern-maker's | 58..... Harpoon Jetty |
| workshop | 59..... Tijuca Jetty |
| 7..... Store and Laboratory | 60..... Floating Dock - sunken |
| 8..... Catcher Provisions Store | 61..... Catcher slip |
| 9..... Catcher Rope Store | 62..... Cemetery |
| 10..... Magasinet: Main Store | 63..... Dam |
| 11..... Engineering Workshop, Smithy and | 64..... Soccer Field |
| Foundry | 65..... Skijump |
| 12..... Paint Store | 66-74..... Bridges |
| 13..... Plating Shop | 75..... Dam, lower |
| 14..... Winch House | 76..... Dam, upper |
| 15..... Pump House | 78..... Jetty |
| 16..... Store for Mechanical Workshop | 79..... Pump House |
| 18..... Foundry Store | 80-117.... Tanks |
| 19..... Pigsty | |
| 20..... Henhouse | |
| 21..... Freezer | |
| 22..... Teatersalen: former barracks | |
| 23..... Hydro-Electricity Power Plant | |
| 24..... Radio, Asdic and Radar Workshop | |
| 25..... Radio Station | |
| 26..... Slaughterhouse | |
| 27..... New Barracks and Mess | |
| 28..... Long Barracks: former barracks | |
| 29..... Barracks - former | |
| 30..... Barracks | |
| 31..... Russebrakka: barracks and laundry | |
| 32..... Bath House | |
| 33..... Cinema | |
| 34..... Church | |
| 35..... Hospital | |
| 36..... Villa: Manager's House | |
| 37..... Foremen's Barracks | |
| 38..... Foremen's Barracks - former | |
| 39..... Provisions Store No. 1 | |
| 40..... Provisions Store No. 2 | |
| 41..... Provisions Store No. 3 | |
| 42..... Potato Store | |
| 43..... Bakery | |
| 44..... Cold Store | |
| 45..... Coffee Roasting House | |
| 46..... Slop Chest | |
| 47..... Bakery and Barracks | |
| 48..... Salt Store | |

1 The Plan

All the timber decking has been removed from the Plan, with only a small area remaining near Building No.3. This remaining section is in poor condition. There is a good deal of splintered timber lying about.

The Plan area is now covered in rough stone with grass growing through it. There is a motor launch lying in the middle of the area and a large amount of chain, of which some is heaped up in the centre of the Plan. The metal slipway remains where the whales would have been pulled in but Jetty No.59 (Tijvca Jetty) has disappeared.

Several winches remain in place on the north side; in the northeast corner an electric windless; immediately east of the Building No.3 a winch level with the main blubber boilers of Building No.3. There are then six winches across the top of the Plan along the west side, the southernmost of which is probably associated with Building No.2. There is a further winch on the south side at the extreme east end of Building No. 2 (again possibly originally inside it) and a winch at the southeast corner by the sea.



1.1 One of the winches at the top (west) side of the Plan



1.2 General view across the Plan looking east towards King Edward Point



1.3 General view looking southeast



1.5 Motorboat in the centre of the Flensing Platform



1.4 The slipway for hauling whales onto the Flensing Platform



1.6 The steel ramp up to the platform over the Meat Cookery in Building No. 2



1.7 General view of the Flensing Platform looking east

2 The Meat & Bone Cookery and The Guano Plant

This was the main processing area of the station. The building (or more properly the collection of different buildings making up Area 2) has been entirely taken down with only the supporting framework for the machinery of the main eastern arm and small area at the extreme northwest corner remaining. The framework of the three levels of the main eastern arm remain in position together with a steel ramp up to an upper deck for cutting up material to drop into the rotating ovens beneath.

A variety of machinery remains in place and the main deck covered in timber has steel sheeting underneath it. The steelwork all remains in reasonable condition. Considering that this has now been exposed for six years most of the machinery is also still in fair order, as far as can be ascertained from a visual inspection, that is to say there is only surface corrosion and little that looks loose or unsafe.

To the south of the main remaining structure are four rotating cookers complete with a pair of bagging stations and screens at the extreme south side of the building. At the north end of the rotating cookers various conveyors and hoppers remain in place. Boilers and bucket lifts feeding material into the cookers remain in place.



2.1 Remaining support structure of the Meat Cookery northwest end



2.2 The rotary guano cookers on the south side of Building No. 2



2.3 Meat Cookery looking northeast

At the end of the northern wing of the building a further rotating cooker remains and then four rows of eight vertical cylindrical boilers. These stand on metal feet which in turn rest on timber boards. The timber boards are rotting in places and some fourteen of the boilers now lie on their sides where they have been removed from the bases. The bases themselves still remain in position.

The extreme southwest range of the building has also been demolished with only the concrete walls of the footings remaining in place. The area is now being used to store miscellaneous bits of equipment – four centrifuges, a pressure set, a grab, some bollards, grindstones, mobile conveyor, a number of dollies for railways, some grabs for diggers, etc.

Standing between the arms of Building No.2 are a number of structures: three large tanks, approximately 4m high. These remain in position and appear reasonably solid although one has a sizeable dent in one of its sheets. These tanks do not appear to be on particularly good footings, (loose rock is all that can be seen) and at least one of the tanks appears to have shifted.

In between the tanks was Building No. 50, a pump house. All that remains of this is a concrete base.



2.6 Openings to meat cookers below platform



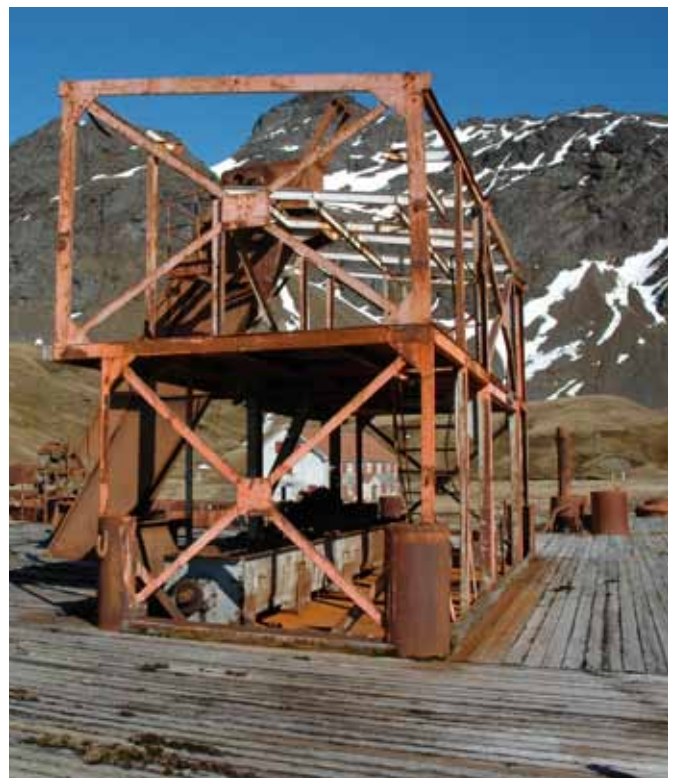
2.7 Winches on south side of platform



2.4 General view of rotary guano cookers



2.5 North end of rotary guano cookers



2.8 Central structure above platform



2.9 Steel ramp up to the meat cooker platform



2.12 Bone cookery (viewed from Glue Water Building No.4) looking east



2.10 General view of the platform looking west



2.13 Bone cookers



2.11 Remains of Bone Cookery seen from the platform over the Meat Cookery



2.14 Northern part of bone cooker (seen from Glue Water Building No. 4)



2.15 General view of the platform over Meat Cookery looking east



2.16 Floor immediately under the open deck of the Meat Cookery with ovens still in place



2.18 The storage tanks enclosed by the northwest arm of Building No. 2 and the Bone Cookery



2.17 Ground floor of Meat Cookery under the remaining ovens



2.19 The remaining outline of the northwest wing of Building No. 2 looking southwards

3 Boiler House and Blubber Cookery

This building has also been taken down with only the floor slab and the concrete walls and the plant base plates remaining in position. To the north side three boilers with brick walls: the brick walls are falling away and brickwork on the top level is loose and probably likely to blow off in the wind. These three boilers are all fitted with oil burners.

Immediately east of these are two large boilers which appear still to be fitted for burning solid fuel. The boilers are on different bases: that to the north is on steel cradles and looks secure; that to the south has a brick cradle which is decaying with a good deal of it fallen away and little remaining other than wedges. This boiler is going to need some attention relatively soon. Between boilers is a pump.

To the northwest there are two rectangular tanks for diesel.

To the east of the boiler house is an area of plant, presumably part of the blubber cookery.



3.1 Blubber cookers west side



3.2 General view of the remains of the Blubber Cookery

To the south of the boiler house is the blubber cookery itself with twelve tall vertical cookers. These are supported individually, each on four steel legs set into concrete.

The supporting framework for the distribution system remains in place, together with a steel and timber deck at the top of the vertical cylinders. This would appear to give a fair amount of bracing to the cylinders themselves. Some of the pipe work and controls in the central area remain in position.

To the south of the boilers is a large pumping engine and a belt driving the conveyor taking the blubber up to the upper distribution point. The conveyor remains in place as does the support structure and the platform at its top with the distribution chutes to the various blubber cookers.



3.5 Blubber cookers and remains of hoist system looking northwest



3.3 Southwest corner of the boilers



3.6 West end of boilers



3.4 Detail of top of boilers showing very loose brickwork



3.7 Second row of boilers looking northwards



3.8 Plant at the east end of the Blubber Cookery



3.9 North side of second row of boilers



3.10 Tanks at the east end of the Boiler House area

4 Separator and Power Plant

The building has been entirely taken down with only the concrete bases remaining indicating the wall positions. There are seven diesel electric generator sets in here, all manufactured by Blackstone, all rusting but still very apparent what they were and how they worked.

The separator plant appears to consist of eight vertical tanks within the building and eight centrifuges. Tanks remain either side of the building; seven cylindrical tanks to the south (originally eight but one has been removed) and five cylindrical tanks and four rectangular tanks to the north side of the building. These sit on brick bases within a concrete bun and appear to be in fair order. Those to the south sit on a raised steel frame made out of RSJs.

Running through the centre of the building is one of the streams; how this was floored over when the building was in use is not clear.



4.1 General view of Separator and Power Plant looking northeast



4.2 Detail of centrifuge



4.3 Cylindrical tanks to south of the building



4.4 General view of the generator sets



4.5 Detail of generator set



4.6 Tanks and centrifuges

5 Glue Water Plant

The Glue Water Plant has been entirely taken down with only the concrete base remaining. The plant and steel supporting structure remain in place and again all appears to be reasonably solid at the moment given its degree of exposure.

Immediately to the east of the glue water plant is a pylon supporting (?) a pressure vessel. This appears to have had a ladder up to a platform but this has been removed.



5.1 West side of Glue Water Plant



5.2 Detail of boilers



5.3 General view of the Glue Water Plant looking northeast

6 Carpenters and Pattern Makers Workshop

The Carpenters and Pattern Makers Workshop has disappeared entirely with no visible remains.

7 Store and Laboratory

Nothing remains of this building other than part of the concrete foundation wall.



7.1 Foundation of the Building No. 7 Laboratory and Store

8 Catcher Provision Store

Nothing remains of this building at all.

9 Catcher Rope Store

The catcher rope store has also disappeared completely.

10 Main Store

The Main Store remains in position. This is a two-storey timber framed, clad in corrugated iron, built off a concrete base. All doors and windows are now covered over with new corrugated iron sheeting. There has been a small amount of patching to the roof and some new (non-matching) corrugated sheet has been used at the west end on the north side. The same sort of repair has been carried out on the west side. This new sheeting has a different pitch to the original sheeting and this makes for an uncomfortable junction as well as spoiling the appearance of the building. The roof on the south side generally appears to be okay with one small disturbed area at the southwest corner. There is some mechanical damage to the bargeboard and corrugated sheeting in two or three places, presumably this occurred whilst the demolition work of adjacent buildings was being carried out.

The lean-to on the south side of the main store building would appear to be a later building which has been added to the side of the main outer wall. Built from lightweight timber framing supporting a wall plate with rafters, approx 100 sq at 1.2m. A wall plate has been tacked onto the side of the existing building with props approx 200 x 100mm deep running back to prop the main rafters. Purlins approximately at 1m centred support the corrugated iron sheets of the roof. Neither the walls nor the roof have any internal cladding. The



10.1 East elevation



10.2 South and east elevations



10.3 North and east elevations

floor is of concrete. This space is, at present, being used to store timber, gabions, reinforcing mesh etc. Apart from some boxes of rivets there do not appear to be any old artefacts in here. There have been doors at the east end but these are no longer there and this space is now fitted with modern pressed metal sheeting. There were three windows on the south side of the lean-to which are fitted with bars. These remain in place but have been blocked externally.

The main store is timber framed, approx 150 sq timber posts, 2m centres. There are simple sheeting rails at approx 1.2m centres, supporting the external corrugated iron. There is no internal cladding. Some bracing timbers have been added. There is a wall plate at first floor level supporting timber joists at 900mm centres. The joists being approx 75 x 125mm. These are sitting on 150mm square main timbers which are themselves propped at 4m centres with posts with angle braces.

The walls have been boarded internally in storage areas and are fully fitted with shelving which runs up from the floor up to 2.4m high and with posts braced up to the floor above. There is still a large amount of storage in

here ranging from sack barrows to large spanners to old telephones and large numbers of nuts, bolts, split pins and rings. There is also a certain amount of modern equipment stored in here, ladders, plastic sheeting. The first floor is timber boarded on substantial timber joists. A stair at the east end leads up to the first floor. This is effectively in the roof space. The props at ground floor level extend up to prop the purlins. Common rafters sit on this purlin with the rafters being halved at their heads as opposed to a ridge piece. There are purlins at approx 1.2m centres, supporting the external corrugated iron sheeting. There is no internal cladding.

The south side of the first floor is fitted out with shelving as down below and there are two enclosed rooms, one at this level and one at a lower level in the northeast corner. In the lower office is the cardex file used by the store keepers. This is now in poor condition with a number of drawers and quite a lot of the cards missing. It would be worth salvaging at least some of this before further deterioration occurs. There are a number of small holes visible in the corrugated iron roof but generally it appears to be in reasonable condition.



10.4 West elevation showing the extent of the repair in modern sheeting of the wrong profile

11 Engineering Workshop, Smithy and Foundry

The two wings to the east and west have been truncated with only the concrete bases remaining in position. The main part of the building all remains though the windows have been blocked over with steel sheeting. Internally the building has steel columns supporting RSJ main beams running north/south with cross-beams at approximate 1m centres with a timber floor above. The staircase remains in position and a small amount of timber framing separating off a store area. If there was more framing in here it has been removed and it is now one large open space used for garaging. Some pulleys and belts remaining in position at high level and some pieces of machinery are still in place around the edges of the space.

Workshop

The corrugated iron roof is supported on relatively lightweight steel trusses consisting of a pair of 100mm angles as principal rafters with 60 x 60mm angles as the tie members of the truss. The corrugated iron sheeting is supported by timber purlins at approx 1m centres, the purlins being 75 x 150mm approx.

The corrugated iron of the roofs has a significant number of holes in it. There are many more that are apparent in the north end wall. These are generally regular punctured holes and it seems likely that this is the result of the army firing at the building. The holes in the roof may also be from this.



11.1 North and east elevations



11.2 Interior ground floor of the main space now used for garaging



11.3 South and east elevations

In the northeast corner, there are two rooms on the first floor: a work room with a sink and a room that is either an office or a bedroom. The boarded first floor is fitted out with the shelving over part of the space. In the central area there is a surprisingly large amount of heavy metal machinery stored and on the west side towards the north end, some steel tubular racking storing a good deal of pipework. All this is heavy, hardly ideal to be stored up at this level. There is a single flight of timber stairs with an iron handrail from the ground floor.

There are windows on both east and west sides of the building and along the north side. All these have been blocked in.

A partition divides off the south side where there are further store rooms and what may have been a pump or plant room as there is some remaining switchgear in this area.

The walls are in brick or concrete up to cill level and then boarded above internally. The main doors into the building (now the only doors) are on the north side. There have been doors in the south wall but these are now blocked as well as doors into the new demolished wings.

Apart from the minor holes in the corrugated iron and some minor corrosion on the steelwork this building appears solid and no cause for concern. In the longer term removing some of the weight from the upper floor would be desirable.



11.4 West elevation showing the location of the demolished Workshop

12 The Paint Store

This has entirely disappeared.

13 The Plating Shop

A rough concrete outline remains to show the location of the Plating Shop. The rolling machine, large press, forge and blower all still remain in position, but little else remains. It would appear that this building was probably dropping into the sea, before it was taken down. A good deal of old metal used as fill, harpoons, metal off-cuts, old chains, etc is exposed on the seaward side.



13.1 Rolling machine



13.2 The site of the Plating Shop looking southeast



13.3 Anvil



13.4 The ground made up with harpoon heads and other scrap metal



13.5 Grindstone

14 Winch House

This building has been entirely removed although a large winch and an electric motor remain in position.



14.1 Detail of the remaining winch and engine



14.2 The site of the Winch House looking southwest with the Pump House behind

15 The Pump House

This building also has been taken down with only the concrete floor and the west wall and a short south return wall remaining. Six pumps remain in position, together with two electric motors and a large cylindrical tank at the north end of the building.



15.1 Remaining pump and motor



15.2 Site of the Pump House looking southwest with storage tanks behind

16 Store

This store has been taken down and no trace remains of this.

17 Store for Mechanical Workshop

This store has been taken down and nothing of it remains. A good deal of material has been pushed or dumped in the area previously occupied by Buildings Nos.16 and 17 and this may cover remaining floor slabs.

18 The Foundry Store

This has been taken down and no trace of this remains.

19 Pig Sty

The Pig Sties have disappeared more or less completely with only a flat area of ground indicating where they stood.

21 The Freezer House

The Freezer House has disappeared. The concrete base remains for this building and some small sections of wall on the west side, together with four compressors and four electric motors and five cylinders.



21.1 General view of the floor of the Freezer House looking down from the hill to the southwest



21.2 Remains of the Freezer House looking south



21.3 Detail of remaining Chiller Plant

22 The Former Barracks

There is no trace of these and the roadway has been made up to the dam through this area.

23 Hydro Electricity Power Plant

The base of this remains although the building has entirely disappeared. There are three turbines, all with the name 'Ing.A.Riva & Co Milano' on them. These are generator sets with the turbines, all of which remain in position, although two of them lost their outer coverings. One set would appear to be of an earlier date than the other two, with a much more substantial casing. The name plate from this set has been removed, although it appears very similar to the other two adjacent to this. Immediately to the west are two large diesel electric generators. Both diesel engines have 'Mirrlees' name plates on them. Instructions cast into the castings are in English, suggesting an English manufactured machine. The generator sets are by 'Brush'.

Immediately south of the building and outside it, there is a cylindrical tank held on two brackets, presumably a fuel tank. Two larger cylindrical tanks have been tumbled in the stream bed below the position of the building. They probably stood in the empty space to the north of the older of the turbines sets.



23.1 Hydro electric set with covering still in place on the generator



23.2 Hydro electric sets



23.3 Diesel electric generator set



23.4 Fuel tanks tumbled into the stream bed below the site of the generator plant



23.5 Remaining concrete floor of the hydro power plant looking south

24 Modern Hydro Plant

This is the modern hydro electricity generator house. This building was opened in 2009 and it is clad in plastic coated pressed metal, both for the walls and the roof. It was not accessed but all appears to be in good order.



24.1 North and west elevations

25 Radio Station

Little remains of this building. The concrete base is still visible, together with some rotted timbers, which were once the floor of the building.

One small radio mast remains in position on the hillside to the southeast of the radio station. Two much larger masts are now lying on the floor. These are both steel, approximately 250mm diameter and 25m tall. Some of the staying wires are also still lying in the Tussock grass.



25.1 The remnants of the Radio Station



25.2 The remaining standing smaller mast on the hill above the station



25.3 One of the two steel masts lying on the ground

26 The Slaughter House

Only the concrete base remains together with a row of five concrete wash tubs and two pieces of machinery.



26.1 A corner of the concrete tub and one of the pieces of machinery



26.2 The remaining base of the Slaughter House with the storage tanks to the south of them

27 The New Barracks and The Mess

The Mess Building has been demolished completely with only a concrete base and the concrete foundation wall remaining. The kitchen has also been taken down, and only some base walls, the quarry tiled floor and the large stove remain in place. The stove has GW Linnekogel & Son, Oslo, No.215 cast into the oven front.

For details of the Nybrakka building see the separate notes at the end of this appendix.



27.1 Oven front 'GW Linnekogel & Son, Oslo, No. 215'



27.2 Base of the refectory area looking southwards



27.3 The stove remains in position

27 Nybrakka - The New Barracks

The building known as Nybrakka is the remaining west wing of an 'L' shaped building. The east wing, which is demolished, holding a kitchen and mess, the building was put up in the 1950s to provide 'new' barrack accommodation. The building is a simple rectangular design with a concrete built base, the top of which is some 1500mm above the ground level at the east end and 600mm at the west end. The building is of two main storeys with a basement and an attic. The entrance is through a porch with double doors on the north side and is arranged in seven bays. The windows have all been covered over with a pressed metal sheet. The construction is of a timber frame clad with a feather edge boarding.

Externally, the boarding being fixed directly to the main elements to the frame, over a building paper. The internal surface of the walls is all made up of wood wool slabs. Generally, the feather edge boarding is in reasonable condition, except for a small damaged area on the north side, immediately west of the porch. To the east of porch is a stairway down into the basement which currently has around 250mm of water standing in it. The door was previously covered by a hatch but this has now fallen away. There is a further stair at the east end, going down to give access to the basement and up to give access to the ground floor. This would have been covered and the outline of the roof can be made out where boarding has been replaced, all that remains of this are the concrete walls, everything else having been removed. There are escape ladders from the attic floor, a continuous one at the west end and a split one at the east end, presumably there was previously a platform on the roof of the link building.



27.1 South elevation



27.2 North and east elevations



27.3 North elevation

The walls, generally, appear to be very good and there is no sign of any significant movement. The building has hold down wires: three double wires on the north side; three hold down points, one double wire and two quadruple wires on the south side. There is some minor damage to the eaves and a loose barge board and capping piece at the east end. The roof is covered in corrugated iron and this has been patched on the north side where two rooflights have been covered over. One chimney remains on the south side. The corrugated iron is all reasonably well fixed, although re-fitting the missing section of the barge board on the east end would be desirable.

At the lower level of the west end wall the featheredge boarding is missing and has been replaced with pressed metal sheeting. The featheredge boarding above this is in reasonable order, although the corner capping piece is missing from the southwest corner and should be replaced.

The pitched roof has principal rafters which are tied by the attic floor and by collars at roughly the mid span which form the floor of the upper loft. The rafters support purlins that carry the corrugated iron roof deck.

The attic floor is in a poor state and should not be accessed. The floor has been ripped up on the east side, perhaps 50 percent of it missing. The ceiling is lined with either a hardboard or softboard held up on timber battens. There is a small attic space or loft space with an access hatch which is boarded out in the apex of the pitched roof. The central space of the main attic is one large open space, possibly a recreation area as there are no signs of partitions having been removed. There are three rooms at either end of the attic, i.e. the east and west ends, all of which have windows in the gable end, large window in the middle room and small ones at the sides. The central door is present on the west side, but the other doors are missing. The central space was originally lit by four rooflights. The northern two have been leaking, rotting the floor beneath. These have now been sealed.

The floorboarding in the attic is the same narrow timber boarding as elsewhere. Possibly the floor was rotted as a result of rain getting in through the skylights, or perhaps it was simply taken up for firewood. The main floor joists are substantial at 65 x 225mm. The balustrading around the staircase has disappeared, perhaps the void was covered previously with a trap door. A number of bunk bed frames remain here, some with springs and some with steel suspension bands.

The first floor plan is simple enough with seven rooms on the south side and six rooms and the stair on the north side. The successive flights of stairs run from ground to first floor and from first floor to attic with the stairs down to the basement underneath the lower flight. The structure is simple enough with two central corridor walls, which the floor joists land on. The corridor walls are made of 100mm thick woodwool slab which are used structurally. Throughout the floor there are simple timber skirtings and plain flat architraves. All the doors have been removed. The rooms are all fitted out with four bunk beds and four cupboards on the opposite wall. There is a space left at the end of the cupboards which doesn't seem to be big enough for a further bunk, possibly a desk was fitted at this point or some other piece of furniture. A fifth cupboard or hanging area is fitted at the end of the bunks. Each room has a three-light window with fixed sides and a central side hung opening casement. The majority of the casement frames are still there, but little of the glass remains, although many have been covered with polythene internally. The cross walls dividing the space are also made of woodwool slab. They have been perforated at low level where heating pipes have passed through them. No heating pipes or radiators remain in any of these spaces.

The first floor ceiling is of hardboard fixed onto the (?) original wider boarding. This hardboard is falling away below the roof light. The floors are made of narrow strip boarding which has been stained a dark brown, although this has worn off in places and in some areas has been over-painted with lino paint. There is some damage to the main floor timbers immediately below the skylight which is in the room to the east of staircase. There is some lesser damage in the room to the west of the staircase. The handrail to the timber stairs has been removed on both levels, although the fixing brackets remain.

The ground floor is a suspended timber floor. On the north side the double entrance doors give onto the bottom of the stair hall. To the east of this are two long rooms with one wall running east/west between the two rooms remaining in place. If there was ever another, this has been removed or replaced with a beam supported on two cylindrical columns. This main space occupies three bays of the ground floor. To the west of this there is a central corridor with four rooms on the south side and three on the north side, all identical to the rooms above.

The woodwool wall slabs have been covered with a thin slurry of render, then have been papered over using a Norwegian newspaper. There are various dates in April and May 1949.

The basement walls are all in mass concrete and there is a substantial concrete floor slab. At the time of inspection there was around 250mm water standing in the basement. There have been timber frames and doors, but the doors have been removed. The basement had small windows at high level, lighting and ventilating the space. These are now covered over externally. The basement walls have been rendered out and have been painted. The ceiling has a thin skim of render, which is falling away in places. There is a single iron column at the point where the basement stair descends and where the floor slab has been cut away. At this point the concrete floor slab would appear to be some 300mm thick.

Nybrakka seems solid enough. To be sure about its structural condition one would need to take up some further elements of the floor to make a more detailed inspection of the main timbers. Certainly some floor timbers would need replacing in the areas where the wet rot has occurred. Getting the basement dry would seem to be something that should be done as soon as possible, if this building is to be saved. The possibility of timber plates in the bottom of the concrete wall in the basement seems highly unlikely. The structure round the base of the south corridor wall at the east end of the first floor also needs to be looked at. Given the offset of the ground floor it is not entirely clear what this is sitting on.

To bring Nybrakka back into a usable state would require a great deal of work. Even with a reasonably solid structure there would need to be re-roofing, insulation, new windows, a complete internal refit, as well as entirely new services. The scale of the work (and the cost of it) would be comparable to a new building cost.



West elevation

28 The Long Barracks

These have disappeared entirely, with no visible traces remaining.

29 The Former Barracks

The concrete bases, presumably cast in barrels, remain in place but that is the only trace of the building.



29.1 Concrete bases

30 The Barracks

Only the concrete footings and spine walls still remain and all the superstructure has been removed.



30.1 Remnants of the Barracks footings

31 Russebrakka Barracks and Laundry

A small amount of concrete floor and upstand walls remain together with pieces of laundry equipment and heated ironing machine.



31.1 The remnants of the Russebrakka Barracks looking eastwards with the Glue Water Plant (No. 4) in the background

32 Bath House

Only the concrete base remains.



32.1 The concrete base of the Bath House in the foreground looking south to the Nybrakka

33 The Cinema

Only the concrete base remains.



33.1 A metal covering to an underground chamber adjacent to the Cinema



33.2 The remaining concrete base of the Cinema looking northwest

34 The Church

The church is a simple timber framed timber clad building. It consists of a main nave with an east porch and a sanctuary in an apsed west end. The nave has a gallery at the east end approached by a timber stair. At the west end there is a small vestry and priest's entrance on the north side, and on the south side an entrance porch with a library in a separate wing. The church building was completely prefabricated in Norway and was erected in Grytviken in 1913. The design is said to be typical of a small Norwegian country church.

The Porch

The porch at the east end can be approached from either side up seven steps, the bottom six being concrete and the top being part of the timber deck outside the double doors into the church. The porch has a boat hull shaped roof, covered in felt fixed with timber battens. There are gutters at either side of the porch roof, but no downpipes. There would appear to have been downpipes in the past, given the scooped out pieces of timber. The water falling from here makes the bottom of the timber columns and the cill piece vulnerable to rot. This has been substantially filled in the past and needs to be kept well painted if it is not to start wet rot. The timber steps have been repaired in concrete and some further repair is going to be needed in the near future. The steps are painted in red lino paint as is the brick plinth right around the church. There is some minor rusting from the tie rods across the top of the two openings into the porch; again, this needs repainting on a regular basis.



34.1 Southwest corner



34.2 The west elevation



34.3 The south elevation

The Church Exterior

The main body of the church is raised on a brick plinth wall, which is approximately 900mm high in the southeast corner, diminishing to nothing at the west side. The church has an apse at the west end and the church being set in a directly opposite manor to the normal east/west alignment. In the southwest corner there is a projecting building where you might expect the vestry. This is a substantial building which is used as a library and appears to be have been built for this purpose. It is hipped into the end of the nave roof on the east side and hipped in to the apse roof on the west side.

There are three ways in to the church. The main east doors for the congregation. There is a west door which gives access to the lobby outside the library and from there into the southwest corner of the nave. There is also a door in the north wall at the west end, which gives access to a small porch with doors both into the chancel area and into the nave, although the latter is blocked. This space was most probably used as a vestry and a priest's entrance. It is now used for storage. At the west end of the church, is the short tower and steeple.

The brick wall around the base of the church is now continuous but looking at the bonding it seems likely that originally there were brick piers and the continuous infill is a later addition.

Externally, the walls are clad in timber vertical boarding, set on in a 'hit and miss' pattern, with a double timber sill at the bottom of the wall. There are three double side hung casement windows on the north and south sides of the nave with bullseye windows at either end; all five windows having hood moulds over the casements. All the windows have been repaired with metal corner plates and none would be capable of being opened. They look as though they have been painted shut for a long time. The bullseyes appear to have been fixed from the outset. In the east end, there is a 'Venetian window' lighting the gallery space, each being three-light with a curved head of the centre piece being filled in a single piece of glass. There is a decorated head piece over the Venetian window, with an applied timber cross on top of it, now painted yellow (possibly originally gilded). Either side of the porch are further oculus windows with hood mouldings. On the south side, the west end oculus is missing as the library is attached at this point. The library has a three-light side hinged casement window on the south side, again plated and fixed shut, with a two-light side hung casement window, two over three, on the north side. One of the frames appears to be a later replacement and the other is the original frame and hinges, again



34.4 The north side of the spire



34.5 Typical window

with reinforcing plates of three different vintages in the corner. The north door has canted corners at the head, a lower panel and three over three glazed lights. One corner of the hood moulding to the door is damaged. The concrete slab step to this north door appears to be a replacement.

The apse has three windows of the same pattern as in the side walls, but a curved head and pairs of side hung openings; the side windows being narrower than the central west end window. A small window into the northwest porch matches that into the library. The northwest door has been blocked in with horizontal boarding but the hood mould remains in position. The step here is substantially disturbed tipping any rainwater back to the building and it would be desirable to reset this to let water fall away from the building.

Generally the condition of the wall boarding all around the church is all good with paintwork generally in good order and only some tiny spots of rusting from the nails and one split area of boarding at the eaves on the west side of the library.

The Roof and Tower

All the roofs are pitched and all are covered in mineral felt. The felt is generally black in colour, however some green coloured felt has been used on the spire. The only area which is not felt is in the valley gutter where the library roof is hipped into the main roof. This still has sheets of either lead (or possibly zinc in the gutter). The roof has been re-felted comparatively recently and generally the condition of the mineral felt looks to be good. The fixing battens were originally painted black, although the black paint has generally now fallen away.

The tower has two bells hanging in the belfry, immediately above the ridge level of the main roof. This has louvres on the north and south sides; above this curved corbels fitted underneath the eaves of the spire. The spire structure takes straight off from the top of the belfry but the corbels allow the bottom to be flared out to give a more interesting shape. The spire felt is held on by timber battens, which run up the corners, matching the slope of the spire and vertically in between the corners. At the top of the spire is a metal cross, also painted a yellow. The only area of disturbed roofing felt on the building is on the west face of the spire. There are five metal rungs up near the top of the spire, probably put there originally as climbing rungs to allow access to the cross. The battening has been stopped short at the bottom rung and the felt beneath the climbing rungs looks satisfactory but there is a patch of felt immediately below this area which now looks loose. This should be kept under observation.



34.6 The east elevation



34.7 The porch and steps

The flashing between the main body of the nave west wall and the northwest porch is a sheet of copper. Two of the nails have worked out of this and the copper is bending up. Refixing this would be desirable

The Church Interior

The roof trusses are exposed and have wall posts which are the main framing of the walls, with hammer beams at wall plate level. The principals run up to the ridge where they are held together with collars at high level and bracing pieces between the wall post hammer beam and to the principal immediately below the collar. The trusses have tie rods set in immediately below the hammer beams. The trusses have been strengthened with filler pieces bolted on to the sides of the hammer beams and to the top of the wall posts and with additional pieces of timber bolted to the sides of the bottom of the principal rafters and metal plates being fitted either side of these strengthened areas. This is not a particularly elegant repair, but it has certainly stiffened the structure. The tie rods may be original or may have been added at this point. Given that they are joined together with forged couplings in the centre, it seems likely that they are original.

The walls around the nave and the apse sanctuary have vertical hit and miss boarding with moulded edges up to a moulded timber dado. Above this dado the boarding is horizontal on the northeast and south walls, but is, curiously, vertical on the west wall, although it is horizontal again on the walls of the apse. Horizontal boarding is also used in the gallery, although this is wider than the horizontal boarding used on the west end of the church. There seems no particular reason why this has been done, possibly simply that with the apse and the two doorways either side, there would have been a lot of short sections of boarding which might have looked messy or possibly just for design. There is no indication that this boarding is a later replacement.

The floor is simple untreated pine boards running east/west throughout and on these boards are set plain, pine pews with solid ends and open work backs, no kneelers or shelves for prayer books. The pews are loose and as currently set out there are 12 on the south side of the nave aisle and 11 on the north side with three surplus pews stacked close together under the gallery area.

At the back (east end) of the nave there is the staircase up to the gallery in the southeast corner and the cast iron stove on the north side, immediately by the gallery. The stove chimney has been removed and it is not clear where this would have exited. There is no obvious sign of any repair in the wall where a stove pipe has been removed. The iron plate on the floor suggests that this is probably the original position of the stove.



34.8 The blocked north door



34.9 Typical oculus window

The roof is boarded out with boards running horizontally up to the ridge between the principal rafters. Four of the principal rafters have been further stiffened with timbers bolted on either side at high level and this is the pair of timbers over the gallery, one on the north side, one truss away from the gallery and one on the south side, two trusses away from the gallery. There are certainly some substantial shakes in the original timbers. Many of the open joints can now be seen between the replacement timbers and the original work. This probably is simply the way these timbers were fitted which must have been a difficult job. There is some movement in the boarding of the roof itself. Open joints are apparent and one or two boards appear to have dropped slightly. Keeping an eye on these joints for any further signs of movement would clearly be sensible and the boards may act as something of a tell tale. The general impression, however, is that this building is solid and in no immediate danger.

The apse has the horizontal boarding as does the rest of the church and a boarded ceiling which is flat over the sanctuary area. Out of the sanctuary are four steps up to a simple timber pulpit. There are two hymn boards, either side of the opening to the sanctuary. These are in Norwegian. There is a harmonium to the south of the sanctuary. There are a number of plaques around the walls and one bust to C A Larson, noting that he had the church built and it was consecrated on Christmas Day 1913. The bust was placed in the church on the 75th anniversary of its consecration on the 25th December 1988 by the Captain C A Larson Memorial Foundation of Norway.

The Library

A door in the southwest corner of the nave leads to a small porch lined out with the same vertical boarded dado with horizontal boarding all round and above. The porch has a small cornice and a timber boarded ceiling. The walls are lined with various tributes to Shackleton. To the south is the library, a rectangular room panelled out with a low oak dado with painted horizontal boarding above. This room is fitted out with a counter of painted timber and book shelves on the walls. Other than in the northwest corner, the timber book cases are fitted to the walls. The earliest ones are those on the east wall. There has been a stove in the northeast corner of the room, and metal plates to the ceiling and floor remain in position. The floor, at this point, has sunk and the failure of the floor joists has allowed the timber shelving to tip out slightly. The floor here should be taken up and repaired.



34.10 The bell hanging in the tower below the spire



34.11 Remnants of the old electrical system (now disconnected)

Services

The church has been wired for electricity at some point in the past. Some of the coiled wire and switches remain in position. There is currently no electricity in this space and no heating. There are signs that electricity is used on occasions, presumably from a temporary generator.

The church has a couple of fire extinguishers, both of the water filled type. Whether these would work must be a matter of doubt; if the label is to be believed, they were last serviced in 1999. Presumably in winter they would be likely to be frozen solid. Some more appropriate (low temperature) extinguishers that are annually serviced would be a good idea.



34.12 The Library counter and north and east walls



34.13 View of the Church from the balcony



34.14 Bookshelves on the east wall tipping where the floor is sinking



34.15 Cracking in the principal beams



34.16 The balcony at the east end of the Church



34.18 The north wall of the Library entrance



34.17 Detail of the pews



34.19 Steel plates installed to strengthen the roof trusses



34.20 The sanctuary in the apse at the west end

35 Hospital

Only the base remains.



35.1 The remaining base of the Hospital looking northeast

36 The Manager's House (now the Museum)

This building is now used to house the Museum and its offices. It has been thoroughly overhauled and repaired in the last few years. The external boarding has been repaired and repainted, the roof covering has been completely renewed and all the windows have been replaced.

Internally there does not appear to have been much alteration to the basic layout of the villa. The ground floor is almost entirely taken up with the Museum display and the Shop. The first floor contains the offices and storage.

This building was not looked at in any detail as it is clearly well looked after. Whilst it is good to see the building in a good state of repair and being well used one or two of the previous decisions might be questioned. It seems to be a pity that the original window patterns could not have been accurately reproduced and one wonders why the entrance stair into the porch was moved through 90°.



36.1 The south and west elevations



36.2 The east and south elevations

37 The Foremen's Barracks

At the time of inspection these were undergoing a major internal refit to provide some additional staff living accommodation. This building has previously been repaired externally and, like the Manager's Villa, has a new pressed metal roof, new windows and repaired and repainted boarding to the walls. This building was used as the dwelling of the previous Museum Manager.

The present fit-out is to make it suitable for living accommodation for visiting staff (as opposed to a family house). The refit involves moving internal walls, repairing floors, renewing floorboards, creating new bathrooms and kitchen, rewiring and redecorating. All this seems to be sensible and a pragmatic way of using this space. The external appearance of the building hardly alters (it is understood an additional first floor window is proposed). It is not clear whether the layout and condition of the building was fully recorded before work started.



37.1 The west elevation



37.2 The south elevation



37.3 The south and east elevations

38 The Former Foremen's Barracks

This has been removed and nothing remains.

39 Provisions Store No. 1

The original Provisions Store has been removed and a new building has been erected in its place in the last few years. The new building occupies the same site as the old provisions store but has little in common with it. The new building houses offices, post office, visitors WCs and an exhibition space which is currently occupied by the replica of the James Caird. The building is clearly modern with no attempt to mimic the original buildings. Walls are covered in white plastic coated pressed metal and the shallow pitched roof in a red version of the material. An access balcony runs around the north and west sides.

This new building was not inspected.



39.1 The west elevation



39.2 The east elevation



39.3 The north and west elevations

40 Provisions Store No. 2

This has been demolished and the base is now being used for storing scaffolding.



40.1 The base of the Provisions Store in the foreground with the Slop Chest (Building No. 46) in the background

41 Provisions Store No. 3

This is built in brick, rendered both inside and out. The store has an upper timber floor with joists which have been propped. The upper floor is not in use at present. The lower area is currently being used for storing drums of Kerosene and also houses a large oil tank for the heating system for The Museum building. The building has a corrugated iron porch on its south side, with a timber ledged and braced door. The building walls are surrounded by earth (presumably for insulation) and the building is raised slightly out of the ground and is accessed by a timber platform and three timber steps. This building is in solid condition and needs no immediate attention.



41.1 The entrance in the south elevation



41.2 The west elevation with rock piled up against the walls

42 Potato Store

The walls are built in roughly shuttered concrete and the space is currently being used for general storage, partly by the builders and partly by residents. It is a 'muddle' in here. There is a loft of timber beams, partly reinforced with metal plates and old railway line used upside down. This has been used as storage space.

The walls have been rendered out inside and the floor is of concrete. There is a six panelled timber door which has been rather spoilt by a large packer fitted to mount a modern bolt.

The store has a pitched roof running roughly north/south framed up out of timber and covered in rusting corrugated iron. This looks reasonably sound at present.



42.2 The door spoiled by the modern bolt and fixing block



42.1 The west elevation partially below ground



42.3 The south elevation with the entrance door

43 The Bakery

This building has disappeared with only the concrete base remaining.



43.1 The base of the Bakery

44 The Cold Store

This building has been demolished with only a small amount of concrete wall remaining in position.



44.1 The remaining base of the Cold Store

45 The Coffee Roasting House

A small brick building, sitting on a concrete plinth. It has been extended northeastwards with corrugated iron walls and a more modern door. The flue for the 'coffee roasting' appears to be through this section of the building, so possibly the original use was for something else. The floor is raised up three steps and the building has a pitched roof in corrugated iron, now painted bright red. The building is currently used for storing the rubbish bins for the Museum.



45.1 The northwest elevation



45.2 The west corner of the building



45.3 The southeast elevation; the later extension to the northeast can be clearly seen

46 The Slop Chest

This has been built into two distinct phases, the earlier building being the area to the east. This has a timber attic which is usable for storage. The wider more modern section to the northwest has inserted steels and metal posts which support the floor and support the framing of the roof. The whole building is clad in corrugated iron, the more modern section having no internal lining in the upper level and no lining above the concrete walls in the lower level. These concrete walls in the newer section extend to approx. 1800mm high.

There is a timber straight flight of stairs in the newer section which leads to the upper level. This first floor is built of substantial joists, presumably to allow for a significant amount of storage in this area. The walls of the older section are boarded out internally, with tongue and grooved boards used both horizontally and vertically. There are windows in the north and south walls of the older section which are now glazed in plastic. The floor through the whole area is of concrete which is raised by four steps above the ground level at the east end. This space is currently used as a workshop and storage area.



46.1 The entrance to the Slop Chest



46.2 The Slop Chest entrance in the east elevation. The later taller extension can be seen in the background.



46.3 The west elevation

47 Bakery and Barracks



This building has been taken down.

48 Salt Store



This building has been taken down.

49 Gunpowder Magazine

It is not entirely clear where this building would have been. There is a hut made out of an old iron boiler which may indeed be the gunpowder store. The area around here is much disturbed by mechanical plant and if there was another building it no longer exists.



49.1 The store made from an old boiler

51 The Watch Room

This does not exist any longer.

52/53 The Dias and Albatros

These two vessels have been securely 'beached' with their stems firmly embedded in the bank and only the rear of the vessels still in the water. No access is permitted to either vessel by any visitor. It is known that there is a good deal of asbestos left sealed in the engine compartment of each vessel.

The two boats make a very evocative part of the general scene at Grytviken even if access is not available. Both boats are in poor condition with much corrosion on the exposed surfaces that are visible. One presumes that a good deal of corrosion is going on inside the hulls as the water is flooding in and out of here.

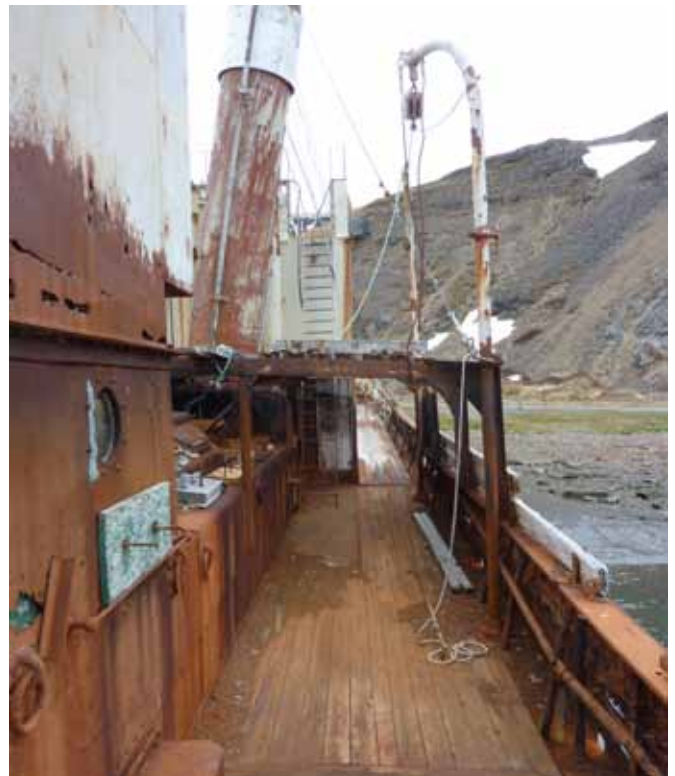
Corrosion is affecting the decks, the bulwarks and the side and top of the wheelhouse and engine compartments. Dias was accessed (in the company of Dave Peck) specifically to look at the chimney stack. This funnel had been stayed in the past with wire rope; however it had begun to lean to the northeast. There was some urgency about making a decision as to what to do with the funnel – if it needed to be lifted down the big Volvo Caterpillar tractor was only available for a few weeks until it was removed.

The base of the funnel had corroded to the point where it has started to collapse in on itself. The steel sheet of the surrounding deck was also seriously corroded. The conclusion of the inspection was that there was not sufficient sound material left to enable a temporary repair solution and that the funnel should be removed as a safety measure – hopefully with the possibility of it being replaced at some point in the future.

One obvious reason for the removal is the unlikely chance that the falling funnel could injure someone. The rather more likely concern, however, is that in falling the funnel would most probably tear a good sized hole in the deck and expose the asbestos in the engine compartment.



52.1 Dias to the left (north) and Albatros to the right (south)



52.2 The starboard deck of the Dias showing the lean on the funnel



53.1 The Albatros



52.3 The starboard deck of the Dias looking towards the stern

Apart from considering the problem of the funnel neither boat was closely inspected; however it was apparent that some decisions will be needed about these vessels in the immediate future. The engine compartments were sealed to encapsulate the asbestos (presumably when the general asbestos clearance was done). This sealing is now damaged in places and needs redoing.

If these two boats are to have a long-term future then some much more major work is going to be needed. Asbestos clearance is one obvious requirement so that access to the interior is possible. Significant repairs and a repainting programme are needed to all external services. Whilst the beaching of these two vessels secures them in the short-term, this is not a satisfactory long-term solution.



52.5 The corrosion allowing the funnel to collapse and tip over



52.4 The corrosion of the bulwarks of the Dias



52.6 The foredeck of the Dias



53.2 The bridge of the Albatros

54 The Petrel

This old catcher boat is now completely beached. The boat genuinely looks reasonably secure. The whole of the hull and the superstructure is corroding quite badly but it would not appear to be in any immediate danger of collapse. The main funnel has been stayed with wire rope although these stays are relatively loose. The top of the funnel has been capped off with plastic sheet. A small mast to the rear also reasonably well stayed.

At the front of the Petrel the harpoon gun remains in position as well as the main mast complete with the lookout's barrel and access ladder.

The Petrel (along with Dias and Albatros) is a significant feature of Grytviken and an important way of setting the scene for visitors. Whilst there may be no immediate threat to the boat, in the medium term this is going to need a good deal of expensive conservation work if it is to be retained.



54.1 Petrel north side



54.2 Petrel south side

55 The Barque Louise

The Louise is burnt out pretty much down to the waterline. What little remains is beyond any sensible repair. One iron mast lies propped up against the side of the vessel with its top in the water. There is an iron barge lying on its side against the east side of the Louise. On the shoreward side there are two old steel barges lying upside down, both much rusted.



55.1 West side of the Barque Louise



55.2 The bow of the ship looking northeast and showing the very poor condition of the hull

56 Timber Built Motor Boat

This is of timber carved construction on oak ribs. The motor, the drive shaft and the propeller are all missing. The hull has been covered in a canvas and thin steel plating, much of this has disappeared but a little remains. There is also rather more substantial metal edging around the gunnel with a metal pipe above that. The keel and stern are both covered in metal sheeting. The boat is currently propped up on a number of timber stays. These are in poor condition and could do with some immediate attention if the boat is not to fall over.

Immediately adjacent to it on the west side of the motor boat is a large anchor.



56.1 The rather slender cradle supporting the motor boat



56.2 Motor boat by the Barque Louise with the Modern Generator House in the distance

58 The Harpoon Jetty

Three sections of this jetty remain but all are in poor order. The jetty is not attached to the shore in any position, although this may have been deliberately dismantled. It would require a great deal of work to repair it. A small hut sits on the outer section of the jetty, built in corrugated iron. There are various iron bollards and other fittings which are now in danger of falling through and into the water.



58.1 The north side adjacent to the Albatros



58.2 The south side - no longer attached to land



58.3 General view of the Harpoon Jetty

59 Tijuca Jetty

Only a small section of the original jetty remains. Part of it has been rebuilt to provide a modern jetty for landings, the remainder has disintegrated.



59.1 The south end of the Jetty where it abuts the modern landing platform



59.2 The north end of the Jetty

60 The Floating Dock

This is off the end of the catcher jetty with its upper part still visible. The floating dock would appear to have sunk and is currently sitting on the bottom.



60.1 The floating dock



60.2 Showing the extent to which it is submerged

61 Catcher Slipway

Nothing remains of this slipway.

62 Graveyard

Approximately 25m square and surrounded by a simple wooden fence painted white with gates on the north side. The graveyard contains 62 burials in addition to that of Sir Ernest Shackleton. The burials are generally simple, a white painted concrete outline filled with gravel. Some have the additional cross on the memorial but most are a simple slab marking the name and date of death of the person buried. The great majority of people buried here are Norwegian.



62.1 General view of the west side of the Graveyard from the entrance gate



62.2 Sir Ernest Shackleton's grave



62.3 General view of the east side of the Graveyard

64 Football Pitch



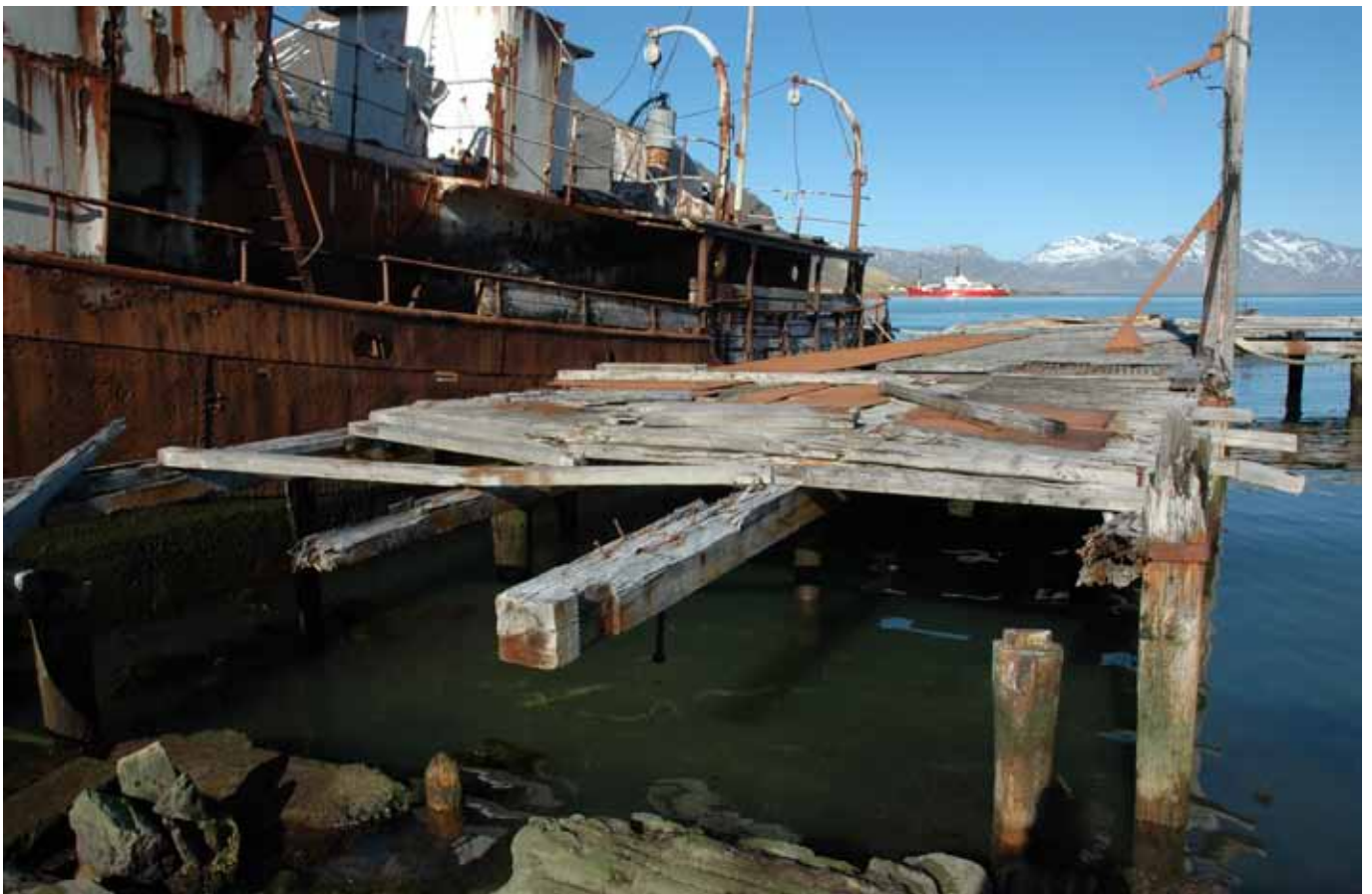
64.1 The Football Pitch looking northwest

79 Pump House

A pump house with two tanks attached is still discernible although the structure has been taken down. A timber base plate and the pumps themselves together with the two tanks remain in position.

78 Pier

This is in a very poor condition. Unusable and no longer attached to land. It would require extensive repairs if it were to be put back in working order.



78.1 The pier adjacent to Petrel which no longer joins the land

Oil Tanks

There are eleven large oil tanks sited to the west of Building No.15, the Pump House. All the tanks are cylindrical made of relatively thin sheet metal. They are set on bases made of brick, stone and concrete with an outer perimeter wall and internal sleeper walls in the bases supporting the floor of the tanks.

All the tanks had shallow domed roofs which were supported on steel braces from the side walls supporting tubular steel or angle purlins. The large tanks also seem to have had a central post propping the roof.

The tanks are all still present and all have been emptied. Three of the tanks are in a state of partial collapse (that at the northeast corner and one in from the northeast end of the central room) where the roof has fallen in and this has collapsed the tank walls.

Two of the tanks have moved off their original bases. This would appear to be mechanical damage as they were pushed out of the way by mechanical digger when access was needed for draining the tanks in the centre of the group (this is according to a verbal report by Dave Peck).

The bases generally are in poor order with supporting walls collapsing. There is also a good deal of corrosion around the edge of the roof where standing water can collect. It is likely that more roofs will collapse in the next few years.



78.1 Tank displaced off its base by the salvage work



78.2 The typical way a Tank collapses once the roof falls in



78.3 General view of the north side of the Tanks

The Restoration of the Whalers' Church, Grytviken

By Robert Burton. Formerly Director, South Georgia Museum.

The situation

The Whalers' Church was prefabricated at Strømmen, Norway, and erected by the whalers in time for consecration on Christmas Day, 1913. From the early 1990s it has been used by cruise ships, especially at Christmas. For instance, five services were held in the 1995-96 summer with two candlelit services held on Christmas Eve by cruise ships and another service was held on the morning of Christmas Day for the garrison at King Edward Point and the crew of HMS *Endurance*. The church was now being used for services more frequently than it had been during whaling years, except for the few years a Norwegian pastor was in residence.

The fabric of the church was now showing signs of major deterioration. Some repairs had been made in the 1970s by BAS personnel, including replacing sections of roofing felt and repairing the windows. When the South Georgia Museum was established in 1991, Bob Kluzniak spent some time working on the church. Then, following temporary repairs by the Royal Engineers in February 1994, the roof sustained severe damage on the night of 15/16 November. A hurricane removed large areas of roofing felt, shifted the porch 4 inches relative to the body of the church, and damaged the righthand door. The resident RE detachment, from 48 Field Squadron, covered the exposed area of the roof with nylon tarpaulin as a temporary measure.

During his visit to South Georgia in summer 1993-94, the Commissioner, Mr David Tatham, asked Tim and Pauline Carr, resident curators, to carry out repairs that would render the church waterproof and prevent collapse. To achieve this, Tim originally proposed to repair and strengthen rotten timbers, clad the roof with plywood sheets (which had the added benefit of imparting rigidity) and cover the roof with roofing felt. This basic plan was later extended to include repair of the windows, securing the porch, repairing the ceiling and painting inside and out, as well as other tasks. So the final result would be a complete restoration. Tim's plan for the repair of the roof was approved by the Commissioner and he discussed details by fax with Bob Burton, the Museum Director, who sought advice on details from a number of sources in the U.K. One of the problems for planning and equipping the project was that the extent of damage to the fabric would be fully revealed only when it was stripped for repair.

It should be noted that the aim was to repair rather than conserve in the strict sense. There was not the time to record details of the original structure and the changes made to it, nor to replace 'like-with-like', as the UK Antarctic Heritage Trust had been able to achieve in the meticulous restoration of the old British base at Port Lockroy.

Most importantly, advice was given on the replacement of roofing felt. The recommendation was to secure two layers of roofing felt with battens rather than stick them with bitumen. Bitumen would be difficult to spread at low temperatures and a rigid fixing would later cause the felt to split as the underlying timbers moved in the wind and temperature changes. A blue-tinged felt was chosen to reduce warming in sunshine and so slow degradation. The recommendation was to use stainless steel screws to hold the battens but these would be very expensive and too time-consuming to insert. In the event, 3-inch sheradised ringshank nails were used (which may prove a problem to remove when the felt is replaced!). It was suggested that the felt would last about 15 years.

It was already known that the roof was in a very poor state. Pieces were being ripped off in gales and parts were beginning to sag. During the course of repair work, it became clear that it was only a matter of time before the church would have started to collapse. Most obviously, the walls were beginning to lean, as shown by the north wall parting company with the brick wall behind the stove, while the amount of shaking in the structure made work impossible during high winds. The supporting pillars for the steeple also showed signs of displacement. Extensive rot was discovered in a number of places especially in and around the windows and in some of the roof trusses. The worst rot was in the south-west corner which is believed to have been caused by leakage around the chimney of the library stove.

The work

Winter 1995 Tim repaired snow damage to the roof and secured the porch with the aid of a Spanish windlass and clamps to bring it back into shape.

Summer 1995-96 The first phase of restoration was the repair of the steeple. Materials and equipment were procured and shipped down from the U.K. and Stanley. Equipment included a heavy-duty drill, bench saw and plane for preparing large timbers. Work started with a helicopter from HMS *Endurance* removing the wrought-iron cross from the spire (which was later prepared and painted by Kenn Back). Tim rigged a bosun's chair from the top of the spire and stripped off the old felt. He replaced 21 rotten boards and strengthened the apex of the spire with a rigid plywood box. Loose timbers were renailed and glued with epoxy resin. The result was to greatly strengthen the structure of the spire. Finally, two layers of roofing felt were laid and secured with battens. Working single-handed, with Pauline helping to lift materials from the ground, Tim accomplished this work in six weeks, assisted by a prolonged spell of fine weather.

A consignment of large timbers – oak, beech, pitch and parana pines – was obtained from Stromness. Tim and Bob visited the station on HMS *Endurance* and, with the aid of a work party and a helicopter, the timbers were collected and taken on board, then airlifted ashore at Grytviken. This readily-available, and free, supply of large quantities of heavy timber contributed enormously to the viability of the project.

Winter 1996 Tim turned his attention to the repair of the main roof trusses. This marked a significant departure from the original plan. Tim had first proposed that a building team spend two summers at Grytviken. Starting at one end of the nave, they would strip the roof in sections, replacing rotten timbers and laying plywood sheets and new felt. The drawback to this plan was that the structure would be weakened while work was in progress, and wind would be able to get in and damage or even destroy the roof. Tim's new plan was to start by repairing the main roof trusses from inside the church. The structure would then be strong enough to withstand gales when the roof was being stripped. (In the event, the roofing team stripped two bays at a time. This made the task easier but it did leave the roof vulnerable in bad weather.)

Tim would repair the roof trusses by working alone, with assistance from Pauline, through the winter. Then, without the need to work on the trusses, the building team would hopefully be able to replace the roof in a single summer. Sufficient scaffolding was obtained from the garrison supply at KEP to make a tower for Tim to work on each truss in turn.

At each junction between truss and wall pillar, Tim sistered timbers to each side of the existing timber and then bolted on steel plates, prepared by Mike Butcher in Stanley, to make a rigid joint.

This work gave the necessary strength to the frame of the church to prevent collapse. Tim is to be congratulated for achieving this by working single-handed with heavy materials in arduous conditions. The timber for the trusses had to be milled in the workshop and sledged 400 metres to the church. There was a problem with the portable generator, which had never been satisfactory. Despite an overhaul and the attention of visiting mechanics, it never delivered full power. The situation was saved by a 500-metre reel of electric cable (released by BAS) recovered from Stromness by Tim with the help of Sarah Lurcock, members of the garrison and the crew of RFA *Grey Rover*. Two lengths of cable were laid over deep snow by Tim and Pauline between the main museum generator and the church to deliver enough power for a heavy drill.

By spring Tim had finished the truss joints. He now replaced the rotten framework of the south-west corner and began preparing for the arrival of the summer team. This included milling timber for purlins and battens, with the assistance of Kenn Back. The steeple was completed by a helicopter from HMS *Montrose* replacing the cross.

Summer 1996-97 Crucial to the work of the building team was the acquisition of a complete set of cuplock tower scaffolding. The set from KEP provided no more than a small tower. Bob had been unable to obtain a decision from the military authorities to lend the set at MPA, Falkland Islands. Then, almost at the 11th hour, Pauline's tea and cake obtained the intervention of Commodore Sandy Backus R.N., Commander British Forces Falkland Islands. The scaffolding arrived from MPA on HMS *Lancaster* on 5 November. There was now enough scaffolding to line both sides of the exterior as well as provide a tower to reach the ceiling inside. Once erected, the team could work with maximum efficiency, switching to tasks inside when the weather was too bad to go on the roof.

The roof team arrived on 22 November 1996. It consisted of John 'Golly' Gallsworthy, Ben Hodges (both ex-BAS builders), Dennis Carter (a carpentry instructor from Nottingham), with Kenn Back (ex-BAS) and George Brown (a former radio operator at KEP) as assistants. David Peck (a carpenter from Stanley) arrived later with Bob Burton on m/s *Explorer*. The team was billeted in Larsen House and messed with the garrison.

On 6 December, HMS *Endurance's* helicopter unloaded large quantities of plywood, roofing felt, nails, paints, tools, a generator and other necessities, which had been brought down from Portsmouth. The facility of a helicopter delivering large quantities of material was a huge bonus. The barrack next to the Kino was used as a store so the church could be kept clear. A replacement generator, obtained from BAS, was set up in the passage leading to the library. Later, on 17 December, HMS *Leeds Castle* delivered a consignment of boards from Stanley, while other ships brought down items such as extra nails and creosote that had been overlooked in the planning stage.

Once the building team had erected the scaffolding, they started work on the roof. Flexibility was the key to obtaining the best results. Golly, Ben, David and Kenn made up the main roof team. They usually worked in two pairs but, depending on the current task, one or more would be allocated to other jobs, from preparing timbers to painting. Dennis worked on jobs of preparation and repair at ground level, as well as doing a number of useful jobs elsewhere

around the station. George contributed a great deal of painting. Tim prepared timber, repaired windows and gave expert advice. Bob gave encouragement.

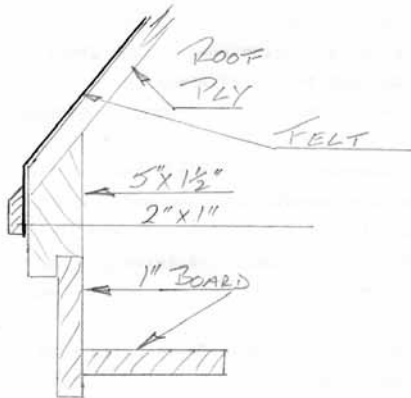
The following details of the roof repairs have been provided by John Gallsworthy, the team leader. Work started around the valley where the south roof of the nave meets the south transept (library). Stripping the felt and the sheet iron of the valley revealed considerable rot in the matchboarding and the lower purlins. These were replaced and work continued along the nave towards the steeple.

Plastic sheeting was used to cover exposed areas overnight and during wet weather. The rotten lower purlins were progressively removed and replaced with new 5x5 inch timbers. Replacing purlins proved more difficult than had been foreseen because it became evident that, at some time in the past, the roof had been stripped and extra purlins added to take out a sag, amounting to about 6 cm in the centre of the roof. (Purlins were drilled with 1 inch holes to a depth of 2 inches and pilot holes were then drilled to take 6 inch nails. All nails in the retained purlins were punched home.)

To keep the roof flat, fillets were fixed to the purlins. Where the purlins did not need replacing, the matchboarding was left intact and covered with 18mm plywood. New purlins were covered with matchboard at 1 ft centres to strengthen and level the base for the plywood. The entire south side was then covered with two layers of polyester-based roofing felt - a base layer and a cap sheet, and fixed with battens down the overlaps and the centres of the felt sheets. The battens were primed, undercoated and glossed, and another top coat added after fixing.

Parts of the north side of the nave had been repaired two years earlier by the Royal Engineers but it was decided to completely strip and repair this side because the work was essentially an emergency repair. The entire side was stripped of felt and matchboarding at the start and many of the purlins replaced. As the matchboarding was removed, extra purlins and noggins were added to support the plywood sheets. Two of the trusses at the steeple end were found to have rotten patches, which were chopped out and new timber spliced in. The entire side was covered with plywood and felt, as on the south side. At the ridge each run of felt was taken over 8 inches to give four thicknesses and a ridge piece of felt fixed that lapped 9 inches on each side.

The fascias and soffits were in a very poor state and were completely replaced. New bargeboards and weatherproofing around the base of the steeple completed the nave roof. The new fascia used 5 x 1½ inch boards for the top section and 6 x 1 inch for the lower. This enabled the felt to be well fixed where it turned down to the fascia. A 2 x 1 inch batten, with a sloped top edge, was also nailed along the edge of the felt. Due to the shortage of timber the soffit was replaced with timber on the south side but ¾ inch plywood on the north.



Section showing the fascia

Repair of the nave roof, the main objective of the summer's work, had taken 50 working days from 22 November to 15 January. The plywood sheets had been laid by 9 January, the underfelt by 11 January and the roof completed except for the soffits by 15 January. On 16 February the last nail was hammered in and the roof teams's job was complete on 19 February.

Progress had been rapid enough to give time to reroof the chancel and the west side (back) of the library. (The east side had been done at the same time as the valley.). As with the nave, the lower three purlins were rotten and had to be replaced. Extra pieces were put in to strengthen hip areas. New plywood had been used up, so sheets from the army's repairs of the north side of the nave were used. Waterproofing the join of the nave to the gable end of the nave proved a major problem because the old metal flashing had rusted away. The vertical boards of the gable had to be carefully eased off. (There was no material to replace them so this was achieved with a sigh of relief!) A weatherproof membrane was placed under the gable boarding, both layers of felt on the chancel roof turned up the gable and new flashing fixed over it. Rotten fascias and soffits were replaced.

Once the south side of the nave had been made watertight, the building team was able to work inside on wet days, which became more frequent in this period. When the purlins had been removed, the internal tongue-and-groove ceiling boards nailed to their undersides had to be released. This was done as carefully as possible to minimise damage and, where possible, boards were left fixed to the top purlins and supported by temporary beams at the bottom. Rotten and damaged boards on the south side were replaced by boards taken from the north side, which were replaced with new boarding. The job was completed apart from a few sections that were left to give Tim access to the main trusses. It had been a close-run thing with timber running out. Existing material had to be carefully saved and recycled and other timbers scrounged from the whaling station.

The opportunity was taken to paint the ceiling while the internal scaffolding was in place. This is a task that would be impossible with ladders. After the others had left for home, Kenn continued painting and applied one or more coats to vast areas inside and out.

While the building team was working on the roof, Tim had continued to prepare timber for their use and then turned to repairing the windows. These were in a very poor condition with obvious signs of rot caused by rainwater leaking in. When the windows were removed, it was found that the rot had spread to the adjacent frame of the walls. Repairs proved very time-consuming as both windows and their frames required major 'surgery'. The intricate joinery had to be replaced either with new timber or epoxy filler. Rotten parts of the wall frame were chiselled out and replaced with timber and filler.

In spite of the weather and the limited labour for this season, all the structural repairs to the church were completed to schedule, although the windows were an ongoing project. The successful completion was possible through generous provision of tools and material which prevented delays, longer working hours than planned and the employment of an extra tradesman, David Peck.

Summer 1997-98 Tim Carr bolted the porch to the main body of the church with tie-rods and completed repairs to one rotten pillar of the porch by replacing it with new wood. He built up the two steeple support pillars within the church with new timber and doubled the roof rafters in this area. During this job Tim had to go below the floor of the church and he found that all the floor bearers and supports were in sound condition.

David Peck returned to Grytviken and repaired parts of the rotten wall plate on the north side, replaced tongue-and-groove boarding in the areas of repair, erected scaffolding up the east face of the church, completely renewed the porch roof and recovered it with two layers of felt and battens. He also repaired the windows above the porch and the rotten ceiling in the northern vestry. Kenn Back painted the north and east faces of the church, the porch and brick footings. He repainted the doors outside and some of the windows. Inside the church he repainted the entire balcony area, the library, vestry and many other areas left from the previous season. He almost completed the interior of the church, with the exception of some of the areas that need access by scaffolding.

In the succeeding summers, 1998-99 and 1999-2000, Harald and Hedel Voss completed the restoration by repairing the last of the windows and doors and finishing the painting.

Finally, Tim Carr rebuilt the frame for the bells and rehung them.

The Assistant Bishop of Tønsberg reconsecrated the church in January 1999 in the presence of the Commissioner for SGSSI, Mr Richard Ralph, and members of Øyas Venner (Friends of the Island).

Funding

The cost of restoring the church was originally estimated at £40,000 and was underwritten by Government of South Georgia. However, a number of generous donations, especially from Norway, allowed the scope of the project to be broadened without the constraint of funding limitations. Norwegian donations include sums from the Compañía Argentina de Pesca Provident Fund and from Solveig Jacobsen, granddaughter of CA Larsen, who was baptised in the church on the day of its consecration.

The Church of Norway	£9330
The Bishop of Tønsberg	£5675
Riksantikvaren (Directorate for Cultural Heritage)	£15000
Kaplan Foundation	\$1000
Zegrahm Expeditions	\$2250
Passengers of <i>World Discoverer</i>	\$3785
Mr Peter Harrison	\$7800
Individual cruise passengers	\$850

Jotun Paints provided paint free of charge. Mackays of Cambridge gave a hefty discount on equipment and material. Lister-Petter gave a discount on generator spares, and Open Air, Cambridge, (owned by Colin Nicol, a former member of BAS staff at KEP) discounted safety equipment. Mike Butcher, Stanley, manufactured steel reinforcing plates for the cost of the material. The Royal Engineers detachment at KEP helped in a number of ways, particular with the use of their heavy plant. The British Antarctic Survey helped in many ways – former KEP staff were very generous with their time.

Acknowledgements

The restoration of the Whalers' Church, the only building in Grytviken which retained its original function in the 1990s, was made possible through the interest of the Commissioner, Mr David Tatham. His wish to see the building preserved was translated into reality by the skill and application of Tim Carr.

The workforce comprised, at various stages, Kenn Back, George Brown, Tim & Pauline Carr, Dennis Carter, John Gallsworthy, Ben Hodges, David Peck, Harald & Hedel Voss. Sarah Lurcock and Pauline Carr fed and watered the team during the working day. The team worked long hours in often uncongenial conditions and the job would not have been completed without a dedication to 'see the job through'.

The project would have been impossible without HMS *Endurance* and her helicopters providing transport down the Atlantic and around South Georgia. Zegrahm Expeditions, Marine Expeditions and Harpag-Lloyd provided free passages for the team to and from South Georgia.

Without the full support of the Government of South Georgia, British Forces Falkland Islands (especially the KEP garrison who provided accommodation, assistance and entertainment), the Royal Navy and the British Antarctic Survey, the organisation and execution of the restoration would have been prohibitively difficult and expensive.

Photographs of the Restoration of the Whalers Church, Grytviken



Building the steeple 1913.



The christening of Solveig Jacobsen. Christmas 1913.



Temporary repairs after the 1994 storm.



The gap behind the brick wall shows how the building leans.



Tim repairs the steeple. New timbers and the plywood apex are in place and felt is being laid.



'Dumppo', the flying dumper truck, arrives.



Delivery to the door!



Kenn with Jotun paint - an appropriate logo!



Dumpo was invaluable for shifting heavy material.



Tim bolts a plate to a roof truss.



Original truss sandwiched between new timbers.



Removing the cross.



Kenn paints the cross.



Preparing timber in the nave.



Dennis rebuilds the badly-rotten corner.



Stripping old felt. Note ruins of Kino.



Stripping felt.



Laying plywood.



The board ceiling can be seen.



Sometimes the ceiling was removed.
One works, two watch!



Or it was retained with a strut under it.



Laying felt.



Felt laid at one end, plywood at the other.



Roofing ladders made on site.



And platform.



Detail of the steeple.



George scrapes paint.



Dave paints the steeple.



Tim cuts out rot from a window frame.



Tim rebuilds a rotten window frame.



Tim repairs the porch



Tim strengthens the steeple pillars.



Sarah nurtures the inner workmen.



The Team. Tim, George, Dave, Dennis, Golly, Kenn, Bob, Ben.



Christmas 1997. The church in its glory.