

**RESTORATION
OF
MARY STANFORD LIFEBOAT HOUSE
RYE
EAST SUSSEX**

Client: Jacqueline Stanford
Chairman Friends of the Mary Stanford Lifeboat House
Dabchick Cottage
Morlais Place
Winchelsea Beach
East Sussex TN36 4LG

Prepared by: The Morton Partnership Ltd
Leonardo House
11 Market Place
Halesworth
Suffolk IP19 8BA

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1.0 GENERAL INFORMATION

- 1.1 This document has been commissioned by the Chairman of the Friends of the Mary Stanford Lifeboat House, Rye, East Sussex.
- 1.2 The Brief to The Morton Partnership indicates that the Friends wish to carry out work to the Lifeboat House to restore it as a building that will be seen as a memory to the seventeen crewmen who lost their lives in a storm on 15 May 1928.
- 1.3 The Lifeboat House was constructed in 1882 using a concrete made up of beach shingle forming what is known as No Fines Concrete. A bonding material was certainly used, which would have been lime or cement based forming a structure vulnerable to attack by the weather conditions on the beach. This has resulted in weaknesses in the structure of the wall which need to be dealt with by making good during the proposed restoration works.
- 1.4 This proposal involves repairs to the walls in order to ensure the structure of the shell works as one structure.
- 1.5 it is not intended to in any way change the building, the Trust requires that it simply be restored back to its original form. In carrying out the restoration, thought will be given to a possible external skim coat finish considered to be suitable to give the building a longer life without giving it a pristine finish.
- 1.6 The intention is to create a memorial to the seventeen crewmen. The building will not, as part of this project, be altered in any way; indeed, very element of the building has originally built will be retained unless this is likely to reduce the life of the building in which case elements will be replaced to match the original. The best quality materials being used, commensurate with a long life with great care taken to ensure the building is properly protected, possibly in some areas using modern repair techniques as appropriate.

2.0 STRUCTURAL INSPECTIONS

- 2.1 I, on behalf of The Morton Partnership, have inspected the building in some detail from ground level and have formed the opinion that the structure is basically sound and is not unstable structurally at the present time. Any work carried out will stabilise the structure to give it a very extended life.
- 2.2 The building has stood up to many storms and obvious changes in the beach levels and, in my opinion, is not at risk of collapse.
- 2.3 We have not been able to inspect in detail at high level, but have inspected from the area where there is a first floor and from that level. We have also used binoculars to help us form our opinion.
- 2.4 The Morton Partnership has been given a copy of a survey carried out for the Environment Agency in 2004. We consider this survey to be reasonable as far as the appraisal of the details of the structure as it existed then, but we very firmly disagree with the suggestion that the building is structurally unsound and requires new foundations and possibly other restraint mechanisms.
- 2.5 My own inspection of the structure does not suggest there are faults in the form of the structure, and are of the opinion that when the No Fine Concrete structure was put together, movement occurred due to the construction method used requiring care in the sequence of building, and the weather conditions prevailing at the time of construction. I

have indicated previously in this document that we have only been able to view the structure from the ground, and thus to give the proposed contractor more detailed information, I have used the 2004 report to help guide the contractor for pricing purposes.

- 2.6 A sketch plan with dimensional information will be found attached to this report in Appendix A with approximate dimensions in imperial measurements.

3.0 ORIGINAL ENVIRONMENT AGENCY FEBRUARY 2004 REPORT

- 3.1 Below are extracts from text of the February 2004 report in *italics*, with **my comments, appraisal and notes related to probable extent of work necessary** (in red type) after each section.

General Description

The building is a single storey open plan structure and is believed to have been built around the turn of the century. The structure is formed by two side loadbearing walls approximately 3.5m in height and 11.5m in length, cast in a 'no-fines' shingle based concrete, the exact consistency and construction of this material is not known. The side walls have two equally spaced mid height windows, these are now infilled with concrete blockwork. The remains of the timber windows were still present.

The front south facing or seaward gable wall end of the structure had originally a full width opening assumedly with timber folding doors (as the rear north wall is now). Both gable walls, at high level, over the full width openings, were formed in the same material as the side walls, each having a high-level central window/opening.

The north gable wall has a full width structural opening closed with high timber folding doors (these appear to be the original timber doors and fixings). These are the main and only entry into the building. This gable wall has at high level a timber louvered opening above the double timber doors.

The front south facing full width opening is now infilled with solid concrete blockwork, believed to have been built some time after the tragedy in 1928.

The roof is double-pitched roof, formed using three equally spaced traditional timber 'King Post' trusses spanning approximately 5.5m between side walls. Timber purlins span between the trusses and support timber rafters which in turn support a timber boarding over lining which is now covered with a roof tile lining, material believed to be felt based, it is also believed that the original roof covering would have been slate or timber shingle tiles.

The building appeared watertight with no evidence of water ingress or damp penetration, given the severity of the structural cracking to the walls this may only be relevant to the dry conditions, when the structure was examined.

No roof guttering or any form of drainage was present; eaves boards were generally rotted.

Internally there is no floor or floor covering; the floor area is generally a compacted earth/sand base.

At truss bottom boom level the south or seaward end, the first quarter section has a timber mezzanine floor accessed by a steep set of timber steps located in the southwest corner. This is believed to be part of the original structure.

This section of the report outlines the structure in general. Detailed comments are made in the following observations.

Observations (originally 2004, amended as far as possible to the 2017 condition)

External Elevations

East Elevation

- The wall had vertical cracking above and below the two blocked up windows. This cracking was mirrored on the internal face of the walls.
- The fine coat of cement render, edged with block lines, was cracked and had fallen away in some areas.
- Corrosion was noted to the finish on the wall at high level at its south end.
- The condition of the external face of the stone lintels and window cills was poor, with damage clearly visible in most areas.
- The timber eaves board has decayed and had clearly rotted throughout, it had fallen away completely in some areas, which had exposed the no fines concrete infill between ends of rafters.
- The exposed ends of rafters have likely suffered in the same manner.

South (Gable) Wall (Seaward) Elevation

- The wall had severe horizontal and radial cracking extending out from the top corners of the large opening, now infilled with block walling. This can clearly be seen on site, the crack panel is being pushed forward and is no out of alignment with the face of the wall.
- The join between the wall and the infilled opening has become withered and had deteriorated.
- The main cross beam supporting the gable wall over the large opening did not have any noticeable cracking along its length indicating the section was still stable. (The 2004 report indicated that the main beam over the opening would need to be replaced).
- Horizontal cracking was noted to the side of the high level window in the gable.
- The surface to the stone lintel over this window was noted in poor condition.
- Horizontal cracking was noted midway up on the left hand side of the opening jamb.

West Elevation

- Vertical cracking was noted in the wall of the south end in line with the return wall thickness.
- The wall had vertical cracking above and below the two blocked up windows. This cracking was mirrored on the internal face of walls.
- The fine coat of cement render, etched with block lines, had cracked and has fallen away in some areas.
- The condition of the external face of the stone lintels and window cills was poor, with damage clearly visible in most areas.
- The timber eaves board had decayed and was clearly rotted throughout, it had been fallen away completely in some areas which had exposed no fines concrete infill between the ends of rafters.
- The exposed end of rafters have likely suffered in the same manner.

North (Gable) Wall (Landward) Elevation

- The wall has severe horizontal cracking extending out from the top corners of the large double door opening.

- *The timber fascia and main cross beam supporting the gable wall over the large opening was noted in poor condition.*
- *Horizontal cracking was noted to the side of the high level window in the gable.*
- *A vertical/diagonal crack was noted from the bottom left hand corner of the above window.*

Roof

- *The roof appeared in good order with little sign of distortion or movement.*
- *The imitation tile finish is not original and would expect the original finish to be tiled slate or wood shingles. (2004 opinion)*
- *The eaves were weathered badly with the eaves board rotted and broken away in many places. The no fines concrete infill between the rafters is now exposed and in certain areas showing signs of weathering.*
- *Ends of rafters in particular on the north west corner were weathered and exposed.*

Internal Observations

East Wall

- *The wall had vertical cracking above and below the two blocked up windows. This cracking was mirrored on the external face of the walls.*
- *Cracking beneath the first truss had sign of previous repairs, this repair has now cracked.*
- *Examination of the bearing to this truss indicated a possible horizontal movement, as evident by the original finish line on the underside of the bottom boom member and the fine cracking running horizontally along the length of the bearing plate.*
- *Staining to the lower part of the wall on the south end was noted. This was thought to be from an oil based material and not damp. Possible spillage when the building was used as storage.*
- *Other fine cracking was noted to the wall on the south end.*

South Wall

- *This wall was the original seaward exit for the lifeboat, it is now infilled with concrete blockwork. The blockwork appeared in good order with little sign of cracking or movement. (2017 comment)*
- *The lower section of this wall was inaccessible due to the materials stored in this area.*
- *Fine horizontal cracking was noted in the right hand door jamb/return wall.*

West Wall

- *The wall has vertical cracking above and below the two blocked up windows. This cracking was mirrored on the external face of the walls.*
- *Cracking to the south end window had sign of previous repair, this repair has now cracked.*
- *Other fine cracking was noted to the wall on the south end.*

North Wall

- *The large double folding timber doors (said in 2004 to be possibly original) were considered to be in reasonable order. The age of the door and fixings appeared original.*
- *The beam over the door was in reasonable order (2004).*

- *The external fascia was in poor order, and had rotted at its centre, this fascia had suffered extensively from weathering in line with the remaining eaves members. (2017 comment: need replacement)*

Roof

- *The timber roof trusses, purlins and rafters appeared in good order with little sign of damage or distortion. The condition of each member will have to be confirmed with detailed physical examination of each member and its joints.*
- *The boarding over the rafters also appeared in good order, it is likely that this area has been maintained at the time of roof surface replacement.*
- *The mezzanine timber floor and steps appear visually in reasonable order, but require a full detailed physical examination to ensure suitability for access and defined future uses. (2017 comment: detailed survey required).*

Floor

- *The floor has no structure and is finished as an earth floor.*
- *The surface is a fine sandy compacted material.*
- *The floor has been contaminated with oil and is recommended removed/replaced (2017 comment: soil replaced with similar material to that which exists).*

4.0 COST CONSIDERATIONS AND ESTIMATES

- 4.1 It is envisaged that the contractor working on this contract will keep his costs to a minimum to reduce the final contract figure to the Mary Stanford Lifeboat House Trust.
- 4.2 It is not envisaged that competitive tenders will be required, the justification has to be provide related to carrying out the work in a satisfactory manner at reasonable cost.
- 4.3 The Morton Partnership has looked at the type of work and its extent and believe that it is possible to estimate with a good degree of accuracy costs for some elements of the work, whilst others need to be Provisional Sums.
- 4.4 The Morton Partnership will work with the contractor to be appointed so that the most reasonable cost solution is used and, where possible, items will require to be fixed prices for those elements of work which are clearly defined.
- 4.5 The following are major parts of the cost for which, if possible, fixed prices can be provided with indications of additional cost if the work on site is found to be more extensive than indicated.
- 4.6 The major cost item associated with this contract will be the requirements for access to the building via the necessary scaffolds, and discussion with the contractor needs to take place as to the sequence of carrying out the work.
- 4.7 Although there has not been detailed investigation, it seems likely that the condition of the top of the walls around the building will be poor and, in the long term, it could be that a concrete wall plate should be constructed around the periphery of the building on top of the wall to consolidate the No Fines Concrete, whilst also tying together the wall down its length where there are cracks existing.
- 4.8 As part of this process, it will be found that where there are vertical cracks significant areas of the No Fines Concrete will need to be consolidated.

- 4.9 If the idea of a concrete ring beam the width of the wall is adopted, it is envisaged that this would be no more than 150mm deep and would be lightly reinforced.
- 4.10 It is clear that if this idea is to be adopted, it would be necessary to either carry out the work in a piecemeal manner with scaffolding raised only in the working areas, or whether it may be worthwhile providing a temporary scaffolding roof over the whole building so that continuous working can take place.
- 4.11 In considering this approach, it is pointed out in the reports that the eaves wall plates for the roof structure have almost completely disappeared and the ends of rafters have been built into the top of the concrete wall. Thus, the condition of those rafter feet will be poor.
- 4.12 Another consideration is that the contractor suitable on a project of this nature would need to be conservation minded and thus, may prefer to carry out the work in stages.
- 4.13 The other major factor relates to the condition of the roof structure which appears to be in not unreasonable condition where rafter ends have rotted away or bearings are poor, a reasonable proposal would be to fix alongside those rafters new lengths at the base of the roof.
- 4.14 It is envisaged that the roof will need to be re-stripped and decisions made as to the condition of the existing roof slates, or tiles etc which will affect the decisions that are made with regard to the roof as a whole.
- 4.15 Looking at other elements of the repair, matters that can be priced easily are conventional items.

5.0 ITEMS TO BE PRICED AS ALTERNATIVES

5.1 Scaffold

- a) From ground to eaves level all around, giving access internally and externally to the top of the wall.
- b) All round scaffold linked with temporary roof.
- c) Scaffolding elements at a time, for example the east wall, carrying out the work and taking down the scaffold; going to the west wall and repeating this exercise to take in the two gable walls.
- 5.2 Removal of existing roof coverings, after stripping off the temporary, presumably bitumastic felt.
- 5.3 Carrying out repairs to the top of the wall around the building:
- a) Providing a new ring beam around the top of the wall, say 150mm deep by the width of the wall.
- b) Repairing the top of the wall in a piecemeal manner.
- 5.4 Whilst carrying out the work at the top of the wall, make good the ends of the rafters by adding in additional timbers of the same size as existing in good quality treated timber using stainless steel fixings.
- 5.5 Assume that a decision is made that the top of the wall is to be repaired, not concreted, provide timber wall plate around the building with eaves board and soffit in good quality treated timber fixed down to the top of the wall.

- 5.6 Provision of a drainage gutter around the periphery of the building and downpipes to the ground. The downpipes to be in the same material as the gutters, etc.
- In cast iron half round guttering.
 - Half round steel guttering.
 - Ogee steel guttering.
- 5.7 The roof being repaired, allow for a breathable felt over the whole area of the roof, battening and fixing Welsh type slates with stainless steel fixings over the whole area of the roof.
- 5.8 Provide lead flashings to the gable ends if appropriate, or otherwise waterproofing this junction.
- 5.9 Allow for cutting out and making good cracks that penetrate the thickness of the wall.
- Cutting out and making good the cracks, or
 - Grouting the cracks with a cementitious material.
- 5.10 Repair as appropriate the structure of the roof.
- 5.11 Take out the existing timber windows.
- Allow for repair to match existing, or
 - Providing new windows to match existing.
- 5.12 Allow for reinstating the ventilators at the front and rear of the building.
- Repairing the existing, or.
 - Provide new ventilators to match existing in good quality timber.
- 5.13 Allow for cutting out and replacing existing window lintels and cills and replacing:
- In situ concrete.
 - Precast concrete.
- 5.14 On the **south** elevation provide temporary support over the blockwork to the underside of the existing major beam over the opening. Carefully take down the blockwork and allow for providing a new steel beam encased in high quality concrete, including suitable padstones built into the support walls either side of the building.
- 5.15 As item above, allow for temporarily supporting the wall over the timber beam on the **north** elevation and replacing with concrete encased steel beam.
- 5.16 Allow for either repairing the existing doors to leave working satisfactorily.
- Repair, or
 - Renewing to match existing in good quality timber.
- 5.17 Allow for providing an adequate concrete threshold to the base of the doors at either end of the building in reinforced concrete at a suitable level to endeavour to stop water entering the building.
- 5.18 All items built into the external walls to be constructed to keep water out of the building.
- 5.19 Allow for making good the dirt floor within the building, removing any contaminated material and leaving level and in a condition where it can be walked on easily without damage to footwear.
- 5.20 A matter for consideration is the external finish of the building because on completion of the repair works, the cracks that have been made good will leave a rather patchwork

finish. Consideration will need to be given to a possible finish to the external wall, perhaps the use of a Keim paint (Keim Agents will advise us) to make the building look like one structure.

- 5.21 Allow a Provisional Sum for fixtures and fittings that exist, none of the original fixings are to be removed just simply repaired if considered appropriate.

General Note: At this time a general Specification has not been prepared simply because The Morton Partnership will be working with an experienced contractor making appropriate decisions as to materials and methodology as works proceed.

6.0 HEALTH AND SAFETY

- 6.1 The contractor will need to comply with the CDM Regulations employing as appropriate suitable specialists.

7.0 CONSENTS AND CONTRACT

- 7.1 The building is Grade II listed and thus it is protected against the carrying out of inappropriate work and the use of inappropriate materials. It is the intention of The Morton Partnership to inform the appropriate authorities and obtain the necessary Consents for the proposed repairs.
- 7.2 It is thought that in simply repairing the building, Listed Building Consent is not required, but the use of different materials to those existing will need Consent.
- 7.3 It is envisaged that the JCT Minor Works Contract will be used after agreement with the Clients. The requirements for a retention of 5% for six months will be considered, and 2.5% for twelve months.
- 7.4 It is felt appropriate that whilst dealing with a Listed Building, the standard of workmanship and materials used will be appropriate to that building.

APPENDIX A
PLAN

Old Timber Yard House, 55 The Timber Yard
Drysedale Street, London N1 6ND
Tel: 020 7324 7270 Fax: 020 7729 1196
email: london@themortonpartnership.co.uk
www.themortonpartnership.co.uk

Leonardo House, 11 Market Place, Halesworth, Suffolk. IP19 8BA
Tel: 01986 875651 Fax: 01986 875085
email: halesworth@themortonpartnership.co.uk
www.themortonpartnership.co.uk

8 Church Street, Coggeshall, Essex. CO6 1TU
Tel: 01376 563883 Fax: 01376 563894
email: coggeshall@themortonpartnership.co.uk
www.themortonpartnership.co.uk

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