

**BRITANNIA ROYAL NAVAL COLLEGE  
DARTMOUTH**

**VOLUME I**

**QUADRENNIAL REVIEW - AUGUST 1999**

**BRITANNIA ROYAL NAVAL COLLEGE  
DARTMOUTH**

**AUGUST 1999 - QUADRENNIAL REVIEW  
VOLUME 1 - MAIN BUILDING**

**FOR:**

**BY:**

**AUTHORISED FOR ISSUE:- APPROVED**

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**SECTION A - INTRODUCTION**

**A INTRODUCTION**

**A.1 Status and Occupancy**

**A.1.01 *Building Tenure***

Freehold MOD (Navy).

**A.1.02 *Maintenance Responsibility***

Property Manager: Responsible for the care of the buildings using one or other of the WSM or EWC below, as appropriate.

Establishment Works Consultant (EWC):

Works Service Manager (WSM):

Responsible for general maintenance works as directed or required by the Property Manager up to value of £240K.

**A.1.03 *Maintenance Standard***

In view of the listed grade of the buildings and the prestigious nature of the works of the college, the maintenance standard is classified "X" - exceptional.

**A.2 Building History and Significance**

**A.2.01** Grade II\*, SX8752 673 - First listed Grade II on 23 October 1972, upgraded to II\* on 23 February 1994. D Block was added to the listing on the same date. Within MOD Historic Area and in Area of Outstanding Natural Beauty.

**A.2.02** Training College for Naval Officers - 1899-1905 foundation stone laid 1902 by Edward VII. Addition circa 1914. Flemish bond brick with Portland ashlar dressings; slate roofs, stacks with brick and stone dressed shafts. Walls of granite and local limestone ashlar. Wrennian in style, Palladian in layout.

**A.2.03** **Plan:** Central entrance block flanked by long wings which terminate in asymmetrical pavilions. The wings contain offices to the front with an axial corridor behind giving access to the gun room in the south west pavilion (which also contains the ward room) and the Anglican chapel in the north east pavilion (which also contains the captain's house). A rear centre wing at right angles contains the great hall flanked by classrooms, accommodation and service blocks. The circa 1914 addition is built to the rear (north west). Parade ground in front of and below the main range has an imperial stair rising to the entrance block and is flanked by curving drives.

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- A.2.04 **Exterior:** Carved stone with appropriate Royal naval motifs including lettering, crowns and projecting carvings of historic ships prows of different dates. Three storeys plus two tiers of attics to the entrance block. 37 bay main range plus the pavilions, each associated with a tower and symmetrical except for the pavilions, 5 bay entrance block flanked by 3 bay engaged porticos, then the 13 bay wings. Channelled stone rustication to the wings, vermiculite to the entrance block, stone mullioned windows with high transoms. Entrance block has deep hipped slate roof, balustraded parapet, stone banded chimney shafts and stone bands at second floor sill level and below the parapet. Centre bay broken forward, outer bays flanked by pilasters.
- A.2.05 Centre bay with composite pilasters and half columns to the upper storeys with a typanum containing the Royal Arms above and large stone copula incorporating a clock; central round head doorway with a keystone; flanking bays have round head windows on the ground floor, upper windows are flanked by giant stone pilasters. Outer bays have paired 2 light ground floor windows divided by mullions with heavy vermiculite rustication. All first floor windows have broken pediments: below the outer windows panels carved with the names of . Under the parapet the inscription "*It is on the Navy under the good providence of God that our wealth, prosperity and peace depend*". Three bay, two tier porticos flank the entrance block, the rusticated base of the columns engaged to single storey blocks with parapets.
- A.2.06 Outer bays of the thirteen bay wings have wide pilasters, the bays to the centre of the range each with a broken pediment with bays at the end, each with a balustraded parapet and canted ground floor bay. Centre bay of each wing contains a round head doorway and is flanked by pilasters which rise above the roof line. The outer bays are regular and divided by stone pilasters with an entablature at second floor level, three light windows on the ground floor, two light on the first floor and second floor windows with two light with broken pediments. The right hand pavilion (the captain's house) is on two storeys with an attic in the same style set forward from the main range with an entrance on the inner return. The house has domed corner projections and an asymmetrical entrance elevation with a grand pedimented doorway. The chapel tower has a domed roof rising to it's rear.
- A.2.07 The left hand pavilion contains the ward room with a tower and a domed roof beyond. The ward room is single storey with a roof hipped to the front with a balustraded parapet, three bay front with pilasters and massive windows with two tiers to transoms.
- A.2.08 The parade ground in front and below the main range has round head arches with keystones in the terrace wall. The other elevations of the main college building are a plainer version of the front and the circa 1914 block is designed to match.

- A.2.09 **Interior:** Partially inspected. The galleried great hall is four bays with a half bay at each end, open timber roof with moulded transverse stone arches with aculi in the gables, the trusses are supported on wall plates with timber brackets carved with Naval devices in the centre of each bay. The galleries bow out in the centre of each bay with a wrought iron balustrade. The north west end wall has four tall round head slit windows above a central niche and in a recess below a full size 1910 white marble statue of Edward VII on a plinth signed Hamo Thorneycroft. The chapel has a four bay nave with a tie beam trussed roof joined by longitudinal timbers and vertical aisles. Round head chancel arch, barrel vaulted chancel roof with a transverse stone arch, five light traceried east window, east wall with chequer board frieze flanking the east window and panels of Italian marble on either side of the seven bay carved reredos. The west has an internal three bay narthex with a gallery over. Kempe Studio windows of 1907-1911 (Pevsner). The gun room to the rear of the ward room is galleried at the south west end and has a barrel vaulted roof with transverse ribs decorated with crowns, roses, thistles and the Royal Arms. At each end the upper half of the wall is filled with a massive twelve light window, two moulded king mullions and a transom, high set round windows to each side. Chandeliers in the form of sailing vessels, glass in windows incorporating dolphins in the leading, etc.
- A.2.10 The Ward Room was not inspected.
- A.2.11 The corridor that runs between the Gun Room and the Chapel is said to be one of the longest in any European building. It has a vaulted roof and dado of glazed bricks.
- A.2.12 **History:** In 1863 the Admiralty stationed HMS Britannia in the Dart as a training ship for Naval Cadets. In 1865 she was joined by HMS Hindustan. By 1875 it was decided to build a land based college but the land was not acquired until 1896. Webb began work on the terraces for the main college in 1898 but when two cadets died of influenza on Britannia, the sanatorium was built first. Edward VII laid the foundation stone of the college in 1902. The Hindustan was towed down to Plymouth in 1905 but the Britannia stayed until 1916. (Freeman, Ray:Dartmouth and it's neighbours: Phillmore:1990-: P.156-8/P..177-8; The Buildings of England: Pevsner Nikolaus:Devon:London 1989-: P.325).
- A.2.13 As will be seen from the listing above the main buildings were constructed at the turn of the century to replace wooden training ships moored on the River Dart. Work was started on the main buildings but the outbreak of disease on the timber hulks required immediate action and the Sanatorium, Hardy (ex Hawke) Block was finished first.

**SECTION B - CONDUCT OF THE INSPECTION**



**B CONDUCT OF THE INSPECTION**

**B1 Scope of the Inspection**

B.1.01 The inspection was carried out in accordance with:

DEO (Works) Functional Standard 04 MoD Conservation Manual for Listed Buildings and Scheduled Monuments.

DEO Technical Bulletin 98/36.

DEO (Works) Specification 005, Issue 003, Amendment 1, Task 527 - Quadrennial Inspection by Specialist Conservation Advisors.

British Standard BS 7913:1998 Guide to the Principles of Conservation and Historic Buildings.

and

Government Historic Buildings Advisory Unit - The Care of Historic Buildings and Ancient Monuments Guidelines for Government Departments and Agencies Handbook.

B.1.02 The brief for this review report specified inspection of external walls and roofs and the internal areas have only been inspected where external inspection indicated possible structural problems. The brief required that this report reviewed the previous report (carried out in 1995). This report has therefore been carried out in accordance with Annexes A and B of the Defence Works Functional Technical Bulletin 96/19.

B.1.03 In general, inspection of the elevations to the buildings has been from the ground level, windows in buildings, staircases and readily accessible roofs where elevations are partly concealed. Parapet wall faces to roofs are included in the section on roofs. Roofs accessible externally from vertical steel ladders, internal from stairs and ladders have been fully inspected. However where access was not possible using some fixed means, the inspection was carried out from adjoining roofs, windows or ground as appropriate.

B.1.04 In accordance with the last report, internal spaces to pitched roofs have not been inspected except for any parts readily accessible. Parts requiring access through small openings, ceiling hatches, etc have not been inspected. Pitched roofs which have been repaired/reslated have not been inspected in detail. Visual inspection from the outside has not identified any distortions to roof planes and it is assumed that there are no major defects to the structures. However, it can be reasonably assumed that the defects to timbers identified in previous quadrennial inspections have not received attention.

B.1.05 All flat roofs, except those without access as described above, have been inspected and any work carried out since the last quadrennial inspection have been noted in the particular section.

- B.1.06 There has been a significant programme of reslating and repair to pitched roofs and repairs to asphalt roofs in 1995. Any roof identified as included in this forward programme has been excluded from the detailed inspection (see particular roof areas).
- B.1.07 Woodwork or other parts of the structure which were covered, unexposed or inaccessible, etc were not inspected and therefore it is not possible to report that such parts remain free from defects.
- B.1.08 Flues, ducts or any other similarly enclosed areas, the access to which would have required tools (which could have caused damage to finishes or fittings) were not inspected and therefore it is not possible to report that such parts remain free from defects.
- B.1.09 Specialist inspection or testing was not carried out in respect of material used in the construction or services, including drainage.
- B.1.10 The inspection did not include examination of mechanical, electrical, telephone or drainage services.
- B.1.11 It is not envisaged that the report will be made available, in whole or in part, for use by a third party and will not hold responsibility toward any third party for the content therein.
- B1.12 **It is not intended that this document is used as a direct basis for instructing repairs. Rather, a detailed conservation schedule and specification must be prepared and used after due specialist consultation from an SCA or Conservation Term Consultant and following receipt of all necessary Clearance or Consent approvals.**
- B1.13 All works to include; general maintenance, investigations and major works, should only be carried out by suitably trained and experienced specialist conservation contractors.
- B2 Other Specialist Reports**
- B2.01 *Recommended Specialist Reports*
- B2.02 Preparation of a Conservation Brief or Housekeeping Manual by an SCA or Conservation Term Consultant is considered essential to the "housekeeping" maintenance and management of this historic structure. It is therefore strongly recommended, as per DEO Estate Development Group recommendation within Technical Bulletin 98/36 that a Conservation Brief; would "...provide useful additional guidance for responsibilities for routine maintenance and as such, represent a good long term investment. EDG, therefore, **encourages** the use of these discretionary documents on all listed or scheduled buildings".
- B.2.03 Advice on the content and format of a Conservation Manual may be found within Appendix 2 of the GHBAU "*Handbook*".

B2.04 All works to an historic structure should be recorded in a Log Book to provide a continuous record and should be retained for ever as a permanent record of the building or site. Advice on the format and content of Log Books may be found within Appendix 3 of the GHBAU "*Handbook*".

B2.05 A Forward Maintenance Register should be prepared by the EWC in co-operation with the PROM and SCA to include all works recommended within the Quadrennial Inspection report. No work should be omitted simply because of doubt as to the availability of funds, since funding can only be allocated rationally if all genuine needs are known and prioritised. Should any works be deferred beyond the next 4 year period for financial or other reasons, the PROM should include such information in the annual return for the DEO *Annual Report Historic Buildings on the Defence Estate*.

**B3 Additional Information**

B.3.01 Previous Quadrennial Inspection Reports:

B.3.02 February 1995 !

**B4 Drawings and Other Record Documents**

B4.01 None provided at the time of inspection.

**B5 Fire Officer's Report**

B5.01 None provided at the time of inspection.

**B6 Personnel**

B6.01 This inspection was carried out by:-

B6.02 The personnel met during the inspection were:-

**B7 Date of Inspection and Weather Conditions**

B7.01 Inspections were carried out on 19, 20, 21, 22, 29 and 30 July 1999.

B7.02 The weather was dry and sunny with the occasional shower. The temperature was approximately 75°F.

**SECTION C - WORK DONE SINCE PREVIOUS INSPECTION**

**C WORK DONE SINCE PREVIOUS INSPECTION**

**C1 Action on Previously Recommended Repairs**

- C.1.01 A number of repairs have been carried out from the last quadrennial inspection (these are listed below in C2.1).
- C.1.02 Due to the physical size of the property carrying out all works would prove to be extremely difficult and costly therefore the main items previously reported have in the main been carried out.
- C.1.03 A vast majority of repairs previously reported to spalling brickwork, defective mortar joints, etc are in the process of being carried out to Blocks D & E on a rolling programme of repair.
- C.1.04 We also understand from the Establishment Works Committee Management that the rear addition of Block C is planned to be repaired and redecorated within the next month (September 1999).
- C.1.05 We also understand that the Commodore's House is also due for redecoration in October 1999.

**C2 Work Since Previous Inspection**

Elevations

- C.2.01 Apart from minor repairs which were difficult to identify, the major works carried out since the last inspection were as listed below:-
- C.2.02 **Blocks D & E** Planned maintenance and programmed works for repair of brickwork and external redecorations (ongoing programme 1995-present).
- C.2.03 **Block O** - Partial window replacement (1995-1996)

Roofs

- C.2.04 Apart from minor repairs to pitched roofs, which were generally not possible to identify, the major works carried out since the last inspected are as listed below:-
- C.2.05 **Block D** - Renewal of asphalt flat roof coverings (1996).
- C.2.06 **Block O** - Renewal of asphalt flat roof covering between Blocks D and O (pedestrian walkway 1997).

Internal Works

- C.2.07 **Block A** - Internal refurbishment (1<sup>st</sup> and 2<sup>nd</sup> floors).
- C.2.08 **Main Block** - Renewal and upgrading of fire alarm system (1996-1998).

**SECTION D - GENERAL STATE OF THE STRUCTURE AND IT'S SETTING**

**D GENERAL STATE OF THE STRUCTURE AND IT'S SETTING**

**D.1 Condition Category**

D.1.01 The overall general condition of the various elements of the complex is considered to be good. Programmed works of repairs to elevations and repairs to roofs have been limited due to cost restraints. However, some areas still require maintenance.

**D2 Summary of Finishing and General Soundness**

Elevations

D.2.01 The elevations in total are in fair to reasonable condition. There are some areas of erosion and weathering of brick and stone (to a lesser degree) together with failure to the mortar pointing. There is also a comparatively small amount of unsympathetic mortar and brick repairs. However, this is not considered to be much more than cosmetic at this stage. Work has started since the 1995 report with a programme of repairs and pointing to Blocks D & E. In addition a further programme of works should be set in motion for the remaining elevations. Works can then be implemented at reasonably short notice, as and when funding permits. This should be proceeded by the careful preparation of repair documentation packages. These should be undertaken in full consultation with English Heritage and other appropriate bodies as necessary. Corroding metalwork within the structure is of some concern and is commented upon in detail within the report. Techniques such as cathodic protection should be investigated and discussed with English Heritage.

D.2.02 Areas of further concern are the joints between coping stones, cornices and other projecting ledges. The presence of moss growth at the joints indicates the mortar has failed allowing moisture retention. As copings appear to be without any form of dpc, failure of the jointing mortar leads to the passage of water into the structure. The result of this can be corrosion of the structural steel frame and possible rot of timbers built into the walls. A check of all these joints and a repointing programme is considered to be a high priority as this is a reoccurring problem and these works should be carried out when the roofs are repaired or renewed. There are a number of instances where the growth of moss and algae on walls below coping joints indicate excessive moisture and failure of joints. This is the visible surface effect but it may suggest a hidden problem. Although this situation is often on walls which are permanently in shadow (ie north facing) it is by no means the rule.

D.2.03 Windows and doors seem generally to be in fair to reasonable condition with exceptions noted within the report. It is essential that they are regularly inspected, repaired and painted. Varnish to the entrance doors is badly water stained in some areas and exposed timber is beginning to decay.

D.2.04 Gutters and rainwater downpipes are generally sound but again regular inspection and painting is required. Bearing in mind the number of trees surrounding the buildings, all outlets should be checked regularly but particularly at times of leaf fall. A number of hoppers are blocked and plant growth is visible.

Roofs

- D.2.05 As far as the roofs are concerned, there are a few slipped slates and tingle repairs indicating the onset of nail "fatigue". However the general condition of the pitched roofs appears to be reasonable. Although a programme of reslating of pitched roofs is being carried out at present, all loose and slipped slates should be replaced as a precaution against future failure. The general condition of the flat roofs gives a little more cause for concern. This extends to include parapet walls and their copings, cover flashings and stepped abutment and chimney flashings. In the 1995 Report, many areas of asphalt were identified as requiring repair. With one or two exceptions it is not obvious that the patching repairs have been carried out. The roofs generally still require attention with particular reference to the upstands and it is possible in some cases, that the solar coating has been applied over defective asphalt. We understand that again there is a programme and operation at present for future repair/renewal of roofs.
- D.2.06 Waterproofing of the structure is of prime importance and in this the roof coverings are paramount. This includes asphalt repairs/renewal, fitting of effective cover flashings over upstands, renewal of lead dpc's to dwarf cross walls, repointing of all defective coping joints and stopping holes around lightning conductor fixings. Failure of these elements is probably allowing water to get into the steel frame causing hidden corrosion. Eventually the corrosion manifests itself virtually on the external envelope as can be seen where there is movement of stonework to gables and spalling of brickwork facings to lintels over windows.
- D.2.07 The current patching repair to the mineral finished bituminous felt roofs which has already previously been patch repaired, suggests that the felt is either past it's useful life or improperly laid. Areas of vertical felting are in excess of good practice. Experience suggests that it is very difficult to identify the source of leaks in felt roofs. Very often the internal evidence is not indicative of the precise location of the leak. As a minimum, it is recommended that the areas of felt roofing, where patching has taken place, should be renewed.

**D.3 Degree of Deterioration In Relation to It's Age**

Elevations

- D.3.01 Generally all elevations have weathered the period of time quite well and it is only in recent years that pointing, failure of brickwork and stonework has started to occur more rapidly. This is partially due to the lack of maintenance in the past. The time has now come for these repairs to be carried out over the next 4 years to stop even further decay and breakdown of materials.
- D.3.02 Exposed elevations have suffered somewhat more from deterioration, however sheltered areas have suffered more with staining and plant growth. This in turn is having an effect on the bricks and pointing. Where areas of water penetration has occurred due to these defects this will have a serious effect on the structure of the building and to maintain the buildings longevity and minimilisation of the erosion repairs are paramount.



Roofs

D.3.03 Old roof coverings have outlasted their useful life and slated roofs need repairing, asphalt roofs require renewal. Flashings, soakers, etc need to be checked , repaired and repointed. Roofs, gutters, valleys, etc must be maintained as water penetration will have dire consequences on the property both structurally and aesthetically. Overall the roofs have been renewed or repaired and are in good condition. However there are still a number of roofs which require replacing.

D.4 **Appropriateness, Use and Intensity of Occupation**

D.4.01 The general use and construction of the complex is for modern day usage as a Naval College and is probably somewhat far from ideal due to it's general layout and configuration. However it's history, size and present facilities are probably a good working environment for the training of Naval Officers.

D.4.02 In the present day the armed forces are decreasing in size and therefore the long term future of Britannia College may come into question for the training of Naval Officers and an alternative use may be needed for all or part of the College to maintain it's history and state of condition and not allowed to fall into disrepair or unsympathetically adapted or altered. So many buildings within the MOD demise have been left to decay with minimal maintenance. Most cases are due to the buildings not be the correct layout, design or location together with the cost of maintenance. Britannia College being in a secure area is inaccessible for public or commercial use.

D.5 **Adequacy of Maintenance and General Care of Buildings and Their Setting**

Elevations

D.5.01 Maintenance of buildings of this age and construction as a rule is going to be quite high. Deterioration of stonework, brickwork, steelwork, woodwork, etc is inevitable especially where exposed to the elements as Britannia College is.

D.5.02 Stonework and handmade bricks despite some spalling are generally sound however damaged stone and brick must be cut out and renewed to ensure the longevity of buildings and their integrity. Water penetration within the structure will have dire consequences on the structural members within and eventually tendering them unsafe. Likewise mortar joints should also be maintained to ensure erosion of bricks and stonework does not occur.

D.5.03 Timber work and steelwork should be maintained to minimalise decay. Exposed timber and steelwork will rot and decay during water penetration and for the deterioration of the buildings.

D.5.04 Brickwork and stonework should be regularly inspected ie every 6 months and so should decorations, woodwork and steelwork. All should be repaired/replaced without delay especially before the winter months set in.

- D.5.05 Maintenance is important and the time and cost restraints are, as a rule, the driving factor. A maintenance programme of repairs must be prepared and budgeting allocated accordingly. Due to the buildings setting, exposure to the elements, driving wind and rain, etc it is critical that the building is maintained watertight.

Roofs

- D.5.06 As per the elevations, maintenance of roofs is also of considerable importance. Although the longevity of the roof materials, ie slate, lead, asphalt, etc is quite considerable however maintenance of gutters, etc is very important, ie cleaning debris, leaves, etc from outlets. This would seem to only be carried out when there is a problem and not on a 3 monthly or 6 monthly basis (especially important during the autumn and winter months).
- D.5.07 The majority of roof coverings have been replaced or repaired over the past 10 years and we understand that it is programmed for further roofs to be replaced over the next 4 years. Renewal of roof coverings, valleys, etc is also important. Repairs are generally only temporary and just prolong the inevitable or long enough for the programmed replacement.
- D.5.08 It is also important for roofs to be recovered/renewed with similar materials to compliment the age of the building. It is noted that built up bitumen felt roofs have been used in lieu of asphalt. This may be adequate for 20 years life expectancy but is far from in keeping with the building. If an alternative material is to be used it must be of a similar nature, ie lead.
- D.5.09 Slipped slates should be replaced preferably with secret fixings and not tingles. Regular inspections of roofs should be carried out, ie on a six monthly basis and any repairs carried out.
- D.5.10 Gutters, downpipes, hoppers, etc should be cleaned out to stop water build up due to debris. This should be carried out on a 3 or 6 monthly basis especially during the autumn and winter months. Likewise any damaged pipes or gutters should be replaced.

Generally

- D.5.11 Due to the layout and position of the complex, it's exposure to the elements is high consequently adequate maintenance is vital. In general the past regime of maintenance and repair has been satisfactory but in a reactive nature. This should be of a proactive nature, ie dealing with a potential problem before it arises and not after the problem has occurred. Consequently programmed inspections and repairs are vital.

**D6 Major Problems and Structural Defects**

- D.6.01 Structurally the complex of buildings are at present sound and in the main watertight. Over the past 8 years since the last two quadrennial surveys were prepared, replacement of roofs and brick walls along with the redecoration of timber and steelwork and replacement of windows has been carried out.

- D.6.02 There are still a number of roofs that require and need replacement within the next few years and a phased programme of these should be prepared. Ideally it should be considered that areas of bitumen felt roofs should be replaced with asphalt of a similar material to suit the buildings age.
- D.6.03 There is also concern over the defective joints to cornices and other ledges together with defective brickwork and spalling stone and mortar joints. Some repairs have previously been carried out using cement based mortar to pointing and this is out of character with the bricks and they should, in time, be replaced with a lime based mortar and hand made bricks.
- D.6.04 A detailed inspection of repairs to brickwork, stonework and pointing should be carried out and the replacement/repair of windows and cast iron fittings.

**D7 Major Recommendations for Maintenance, Repair or Improvement**

- D.7.01 List of "urgent" items are recommended for inclusion within this or next year's programmes rated Priorities A1, A2 or A3. (See Section F).
- D.7.02 There are three major items that are recommended to be completed, replacement of roofs, repair of brickwork, stonework and pointing and repair/replacement and redecoration of all woodwork and steelwork including windows, etc.
- D.7.03 List of "minor" items are recommended for inclusion within the next four year period rated Priorities B1, B2, C or D (See Section F).
- D.7.04 The MoD Conservation Manual requires the production of a "Conservation Brief" or Housekeeping Manual for larger and more important protected structures to provide the WSM, (and PROM) with an introduction to the WSM's responsibilities in relation to a protected structure and enable the WSM to "carry out sensitive" management and routine housekeeping maintenance in order to keep the structure in good condition and to prevent serious deterioration".
- D.7.05 The schedule of recommended works includes a basic minimum. It is strongly recommended that EWC's Forward Maintenance Register (FMR) and Planned Maintenance Programmes (FMP, PMP) make due allowance for such potential outlay.

**SECTION E - FINDINGS OF THE INSPECTION BY ELEMENT & BLOCK**

**E FINDINGS OF THE INSPECTION BY ELEMENT**

**E1 GENERAL NOTES**

The methodology used in this report is as set out below for each block in the relevant sections including the Chapel. The Commodore OSR is covered under a separate report:

- E1 General
- E2 Chimney Stacks and Other Roof Features
- E3 Roof Coverings and Elevations also Commodore OSR internal (by Block)
- E4 Landscaping Generally

Each of the above divisions is split up into further subdivisions of description and condition.

Repair works to elevations and roofs are related to key plans which accompany each block schedule.

Repair works, costings, priority and year are described under each building block in Sections F.

Photographs relating to each block are recorded in the Appendix by block.

**EXTERNAL ELEVATIONS**

**GENERAL NOTE**

The report on the elevations is split into blocks with each block have a general note on the description, condition, repair and recommendations.

Each elevational drawing has been noted with the main areas of defects and coded as follows:

- SB - Spalling Brickwork
- SS - Spalling Stonework
- DP - Defective Pointing
- C - Cracking

For cost, year and priority refer to Section F of this report.

Many small or obscured areas of walls of some elevations are not included due to their size or inaccessibility.

Elevations to each block should be referred to the key plan.

**CHIMNEY STACKS & ANY OTHER FEATURES**

**E2 CHIMNEY STACKS AND ANY OTHER FEATURES GENERALLY**

**E2.01** *Description*

Brick built chimney stacks serving boilers and heating units providing hot water and central heating serving the block. A number of chimney stacks are disused together with a further number which have recently been constructed for new boilers.

Chimneys are generally large in construction with one or more flues constructed within the chimney stack. They are of solid brick with appropriate damp proof courses, soakers and flashings incorporated within the structure to prevent water penetration.

**E2.02** *Condition*

The general condition of the chimney stacks appear to be sound however due to the age of a number of stacks, the flashings and soakers are showing signs of age and some splitting to isolated areas. This in turn will allow water penetration into the roof structure and due to their location and position it was not possible during the inspection to ascertain whether leakage had occurred. Any suspect areas we felt may have a problem, were looked at internally to ascertain any damage.

There are a number of stacks which are relatively new and consequently are in good condition and watertight. However, general pointing to the stacks to some areas is weathered and requires repointing. Likewise a number of bricks generally have weathered and spalled and consequently will need to be cut and replaced.

Lead flashings, soakers, cavity trays, etc that are damaged require renewal with a minimum of Code 5 lead correctly chased and mastic pointed into the brickwork.

Disused chimney stacks need to be capped and vented at both the top and bottom to ensure continuous air flow or alternatively they are to be taken down subject to the permission of English Heritage.

Moss, lichen and plant growth are evident on the face of the chimney stacks, to some areas that are sheltered from the prevailing weather.

**E2.03** *Recommendations*

It is recommended that all chimneys are thoroughly inspected with the use of a sky platform, if necessary, and areas of defective brickwork are cut out and replaced with new brick to match existing.

All areas of defective pointing should be raked out and repointed to a minimum depth of 25mm in a lime mortar.

Previous repairs in cement mortar should be cut out and replaced with lime mortar.

Disused chimneys should be capped and vented at the top and bottom to ensure a thorough free flow of air.

All defective lead flashings, soakers, trays, etc should be cut and replaced with new Code 5 lead correctly chased into brick joints a minimum of 25mm and mastic pointed accordingly, waste and pointed accordingly.

Plant growth, moss and lichen should be cleaned off using an anti-fungicidal fluid and any defective bricks should be replaced as previously described.

Roof voids are to be inspected where chimneys pass through the timber structure to ensure that all decayed timber is cut out and replaced with new treated timber of similar size and section to that of existing.

E3.04 ROOF COVERINGS & ELEVATIONS

General Note

- E.4.01 Each roof covering and elevation are described separately to each block giving condition and recommendations for repairs. Repairs described are to be read generally with the areas shown on the plans and roof layouts. General areas of concern are highlighted only on the plans and elevations.
- E.4.02 Photographs of roofs and elevations are in the section for each block.



**BLOCK A - ROOFS AND ELEVATIONS**

**A BLOCK ROOFS**

**E3 ROOFS TO MAIN A BLOCK**

**BLOCK A MAIN ROOF AREA**

**E3.01 Roof A Main to Front Part of A Block**

*Description*

Delabole slate roof with a number of slate gabled dormers to roof windows to south elevation.

*Condition*

The roof has recently been reslated and consequently is in good order. A section of asphalt upstand to the north side has slumped and there are a number of slipped slates.

*Recommendations*

Remove defective upstands and remake in asphalt.

Replace slipped and damaged slates.

**E3.02 Roof A1 West End Adjacent to O Block**

Asphalt roof covering with lead cover flashings and solar reflective coating, brick parapet walls and stone copings around perimeter.

*Condition*

Generally fair condition, solar reflective coating is in need of attention as it is weathered and slightly cracked, some cracking of pointing to coping stones.

*Recommendations*

Clean down roof and reapply solar reflective coating.

Rake out defective joints to copings and re-mastic.

Clean down roof and parapet removing all debris and moss growth, etc.

**E3.03 Roof A2 West End Adjacent to O Block**

*Description*

Asphalt roof covering with lead covering flashings and solar reflective coating.

*Condition*

Generally in fair condition however solar reflective coating is showing signs of age.

*Recommendations*

Cut out defective asphalt and make good with new asphalt, clean down roof and reapply solar reflective coating.

E3.04 **Roof A3 Flat Roof Over Bay**

*Description*

Asphalt roof covering with lead cover flashings to upstands and solar reflective coating with brick parapet walls and stone copings to perimeter.

*Condition*

Generally in fair condition, minor damage to copings.

*Recommendations*

Clean down copings, repoint in mastic.

E3.05 **Roof A4 Small Flat Roof Over Bay**

*Description*

Asphalt roof covering with lead cover flashings to upstands and solar reflective coating with brick parapet walls to perimeter.

*Condition*

Generally in fair condition, minor damage to copings.

*Recommendations*

Clean down copings, repoint in mastic.

E3.06 **Roof A5 Low Level Roof Along North Side of A Main Roof**

*Description*

Asphalt roof covering with parapet walls to perimeter.

*Condition*

Generally in fair condition, there appear to be no lead cover flashings to upstands and poor solar reflective coating. Defective pointing to brick parapet walls and coping stones was noted

*Recommendations*

Cut out and repair defective asphalt to flat areas and upstands with new asphalt.

Cut out and provide new cover flashings in Code 5 lead.

Rake out defective pointing to coping stones and mastic point.

Rake out defective pointing to brick parapet walls and repoint using lime mortar.

Cut out weathered stonework and scarf in new as necessary.

**E3.07 Roof A6 Low Level Roof Along South Side of A Main Roof**

*Description*

Asphalt roof covering with brick parapet walls, stone copings, lead cover flashings around perimeter and solar reflective coating.

*Condition*

Generally the asphalt is in fair condition however minor cracking was noted to surfaces and upstands. Access roof ladder from B7 damaged. Cracking of pointing above flashings also present.

*Recommendations*

Cut out defective asphalt to surfaces and upstands and make good asphalt.

Clean down roof and apply new solar reflective coating.

**E3.08 Roof A7 Flat Roof Area Adjacent to O Block North End**

*Description*

Asphalt roof covering with brick parapet walls, stone copings, lead cover flashings around perimeter and solar reflective coating.

*Condition*

Generally the asphalt is in fair condition however minor cracking was noted to surfaces and upstands. Access roof ladder from B7 damaged. Cracking of pointing above flashings also present.

*Recommendations*

Cut out defective asphalt to surfaces and upstands and make good asphalt.

Clean down roof and apply new solar reflective coating.

Mastic cracks in pointing above lead flashings.

**E3.09 Roof A8 Small Flat Roof Adjacent to A7**

*Description*

Asphalt roof covering with brick parapet walls, stone copings, lead cover flashings around perimeter and solar reflective coating.

*Condition*

Generally the asphalt is in fair condition however minor cracking was noted to surfaces and upstands. Access roof ladder from B7 damaged. Cracking of pointing above flashings also present.

*Recommendations*

Cut out defective asphalt to surfaces and upstands and make good asphalt.

Clean down roof and apply new solar reflective coating.

**E3.10 Roof A9 Small Area of Flat Roof at High Level Between A5 and A6**

*Description*

Asphalt covering with parapet walls, stone copings around perimeter, lead cover flashings and solar reflective coating.

*Condition*

Generally in good condition.

*Recommendations*

General maintenance only, ie clean out outlets 6 monthly.

**E3.11 Roof A10 Large Area of Flat Roof to Freestanding Block North Side**

*Description*

Asphalt roof covering with solar reflective coating, brick parapet wall and stone copings around perimeter with lead cover flashings and tank housing to centre.

*Condition*

Generally the roof appears to be in poor condition with a number of cracks to asphalt surface and poor solar reflective coating. Water is ponding in a number of areas and plant growth is evident to outlets. Asphalt upstands have parted from the brickwork and are allowing water to penetrate into the wall heads. No lead cover flashings are fitted.

*Recommendations*

Renew asphalt roof covering complete finished with solar reflective coating and new lead cover flashings.

**E3.12 Roof A11 Small Area of Flat Roof Low Level Adjacent to W Block Roof W6**

*Description*

Asphalt roof covering with solar reflective coating, stone copings, lead cover flashings to each side and brick parapet walls.

*Condition*

Generally in fair condition, however the solar reflective coating is showing signs of wear.

*Recommendations*

Cut out defective asphalt to flat surfaces, upstands and coves and make good with new asphalt and solar reflective coating.

**E3.13 Roof A12 Small Low Level Roof Adjacent to A11**

*Description*

Asphalt roof covering with solar reflective coating, stone copings, lead cover flashings to each side and brick parapet walls.

*Condition*

Generally in fair condition, however the solar reflective coating is showing signs of wear.

*Recommendations*

Cut out defective asphalt to flat surfaces, upstands and coves and make good with new asphalt and solar reflective coating.

**E3.14 Roof A13 Small Low Level Roof Adjacent to W Block Roof W14**

*Description*

Asphalt roof covering with solar reflective coating, stone copings, lead cover flashings to each side and brick parapet walls.

*Condition*

Generally in fair condition, however the solar reflective coating is showing signs of wear.

*Recommendations*

Cut out defective asphalt to flat surfaces, upstands and coves and make good with new asphalt and solar reflective coating.

**A BLOCK ELEVATIONS**



E3.15    **EXTERNAL ELEVATIONS**

BLOCK A

Elevations 6, 78-89

*Description*

Main block to the west of O block overlooking parade ground, 4 storeys high. First and second levels to south elevation of stone with stone features around windows and columns and stone relief over windows and dormer tops. Rear elevation mostly in brick with stone bands over windows and copings. Roofs to front of pitched roof with asphalt gutters, roofs to rear in asphalt with parapet walls. Timber and metal windows, steel downpipes and soil pipes.

*Condition*

Generally in sound condition however there are areas of spalled stone and brickwork and defective pointing. Some unsympathetic repairs have been carried out to isolated areas. Decorations to windows generally good however minor rusting and timber decay was noted.

*Repair Recommendations*

- Cut out spalled stonework and cut in new to match existing, repoint in lime mortar
- Cut out spalled brickwork and cut in new to match existing, point with lime mortar.
- Rake out defective pointing to brickwork and stonework and point in lime mortar.
- Clean down decorations to windows and joinery and redecorate.
- Clean down steelwork to downpipes, gutters, ladders, etc, treat with rust inhibitor and redecorate.

**BLOCK B - ROOFS AND ELEVATIONS**

**B BLOCK ROOFS**

**ROOFS TO MAIN B BLOCK**

**E3.16 Roof B - Main to Front Part of B Block**

*Description*

Delabole slate roof with a number of slate gabled dormers to roof windows to south elevation.

*Condition*

The roof has recently been reslated and consequently the roof is in good condition, section of dislodged flashings were noted together with cracking of mortar joints above flashings together with general maintenance of cleaning out gutters and downpipes to ensure that water discharges correctly from the existing roof structure.

*Recommendations*

Remove defective flashings and replace pointing to be carried out in mastic not cement.

Regular cleaning of gutters, ie 6 monthly.

**E3.17 Roof B Flat Roof Part of East Wing Complex - North Side Main B Roof**

*Description*

Asphalt roof covering, brick parapet walls and stone copings, lead cover flashings around perimeter and solar coating.

*Condition*

Roof is in good condition however there is some minor blistering.

*Recommendations*

Cut out defective asphalt and make good with new and recoat with existing solar coating.

**E3.18 Roof B2 - Flat Roof Part of East Wing Complex (North Side) of B Main**

*Description*

Asphalt roof covering, brick parapet walls, stone copings, lead cover flashings around perimeter with solar reflective coating to asphalt.

*Condition*

The roof is in good condition although there is some blistering to the asphalt.

*Recommendations*

Cut out defects to asphalt to flat surfaces, make good with new asphalt and solar reflective coating.

**E3.19 Roof B3 - Flat Roof Part of East Wing on North Side of Main B**

*Description*

Asphalt roof covering with solar reflective coating, stone copings, lead cover flashings to each side and brick parapet walls.

*Condition*

Generally in fair condition, however there are some cracks and creep to the asphalt to the coves and upstands.

*Recommendations*

Cut out defective asphalt to flat surfaces, upstands and coves and make good with new asphalt and solar reflective coating.

**E3.20 Roof B4 - Flat Roof over Tank Room at Mid Point along North Side of B Main Roof**

*Description*

Asphalt covering with parapet walls, stone copings around perimeter, lead cover flashings and solar reflective coating.

*Condition*

Generally in good condition.

*Recommendations*

General maintenance only, ie clean out outlets 6 monthly.

**E3.21 Roof B5 - Flat Roof over Main North Wing, Mid Point North Side of Main B Roof**

*Description*

Asphalt roof covering with grey chippings, brick parapet wall and stone copings around perimeter with lead cover flashings.

*Condition*

Generally the roof appears to be in fair condition however the chippings stopped a full inspection of the roof covering. The chippings are slowing the discharge of rainwater from the roof allowing moss and plant growth to build up. It was noted that there was some blistering to the asphalt and some minor crazing and cracking to upstands on parapet walls.

An area of the parapet wall has been reconstructed and the asphalt upstand has not been replaced. A number of the lead cover flashings are of excessive length and consequently there will be some cracking and buckling of the lead due to thermal movement.

Unsympathetic pointing and spalling of brickwork and water damage was noted to the south wall.

*Recommendations*

Cut out spalling bricks and make good with new to south walls.

Rake out existing unsympathetic mortar joints and repoint using lime mortar together with mastic pointing around flashings.

**E3.22 Roof B6 - Small Flat Roof West End of Roof B11**

*Description*

Asphalt roof covering with brick parapet walls, stone copings, lead cover flashings around perimeter and solar reflective coating.

*Condition*

Generally the asphalt is in fair condition however minor cracking was noted to surfaces and upstands. Access roof ladder from B7 damaged. Cracking of pointing above flashings also present.

*Recommendations*

Cut out defective asphalt to surfaces and upstands and make good asphalt.

Clean down roof and apply new solar reflective coating.

Mastic cracks in pointing above lead flashings.

**E3.23 Roof B7 - Small Flat Roof West End of Roof B11**

*Description*

Asphalt roof covering with brick parapet walls, stone copings, lead cover flashings around perimeter and solar reflective coating.

*Condition*

Generally the asphalt is in fair condition however minor cracking was noted to surfaces and upstands. Access roof ladder from B7 damaged. Cracking of pointing above flashings also present.

*Recommendations*

Cut out defective asphalt to surfaces and upstands and make good asphalt.

Clean down roof and apply new solar reflective coating.

Mastic cracks in pointing above lead flashings.

**E3.24 Roof B8 - Flat Roof Part of East Wing Complex on North Side**

*Description*

Asphalt roof covering with lead cover flashings and solar reflective coating and skylight.

*Condition*

Generally the roof is in fair condition however the solar coating is blistering and is badly discoloured. In addition there is also some minor corrosion and damage to the metal windows and cracking of mortar above cover flashings.

*Recommendations*

Clean down all roofs and reapply solar reflective coating.

Repair metalwork to windows and stone surrounds.

Provide mastic pointing above cover flashings.

**E3.25 Roof B9 - Flat Roof Part of East Wing Complex on North Side**

*Description*

Asphalt roof covering with lead cover flashing and solar reflective coating.

*Condition*

Generally the roof is in fair condition however the solar reflective coating is discoloured and crazed.

*Recommendations*

Clean down roof and re-coat with solar reflective coating.

**E3.26 B10 - Low Level Roof Along North Side of B Main Roof**

*Description*

Asphalt roof covering with parapet walls to perimeter.

*Condition*

Generally in poor condition, there are no lead cover flashings to upstands and no solar reflective coating. Defective pointing to brick parapet walls and coping stones was noted with messy wiring to wall faces. Weathered stonework to window sills and a number of redundant cast iron pipes.

*Recommendations*

Cut out and repair defective asphalt to flat areas and upstands with new asphalt.

Cut out and provide new cover flashings in Code 5 lead.

Renew cast iron gutters and pipes.

Rake out defective pointing to coping stones and mastic point.

Rake out defective pointing to brick parapet walls and repoint using lime mortar.

Remove redundant cast iron pipework.

Clip back and tidy wiring, remove redundant as necessary.

Cut out weathered stonework to windows and scarf in new.

**E3.27 Roof B11 - Low Level Roof Along North Side of B Main**

*Description*

Asphalt roof covering with lead cover flashings to upstands and solar reflective coating with brick parapet walls to perimeter.

*Condition*

Generally the roof is in good condition.

*Recommendations*

Generally maintenance only, ie 6 monthly inspections.

**E3.28 Roof B12**

*Description*

Asphalt roof covering with solar reflective coating, lead cover flashings and skylights.

*Condition*

Generally in good condition, solar reflective coating showing signs of age.

*Recommendations*

Clean down roof and reapply solar reflective coating.



**E3.29 Roof B13A**

*Description*

Asphalt roof covering with lead cover flashings and upstands.

*Condition*

Generally in fair condition however being at low level collects debris, leaves, etc

*Recommendations*

Clean down roof, wash down outlets and apply solar reflective coating.

**E3.30 Roof B15 - Small Roof Over Bay at East End of South Side**

*Description*

Asphalt roof covering with lead cover flashings to upstands and solar reflective coating with brick parapet walls to perimeter.

*Condition*

Generally in fair condition, minor damage to copings.

*Recommendations*

Clean down copings, repoint in mastic.

**E3.31 Roof B16 - Small Roof Part of Group Forming Link Between Main B and O Block**

*Description*

Asphalt roof covering with lead cover flashings and solar reflective coating laid to fall into half round asbestos gutter along south side.

*Condition*

Generally the overall condition is fair however the solar reflective coating is cracked and dirty and the existing half round asbestos gutter is showing signs of age.

*Recommendations*

Clean down roof and reapply solar reflective coating.

Replace asbestos cement gutter with cast iron gutters and downpipes

**E3.32 Roof B17 - Small Part of Group Forming Link Between Main B and O Block**

Asphalt roof covering with lead cover flashings and solar reflective coating, brick parapet walls and stone copings around perimeter.

*Condition*

Generally fair condition, solar reflective coating is in need of attention as it is weathered and slightly cracked, some cracking of pointing to coping stones.

*Recommendations*

Clean down roof and reapply solar reflective coating.

Rake out defective joints to copings and re-mastic.

Clean down roof and parapet removing all debris and moss growth, etc.

**E3.33 Roof B18**

*Description*

Asphalt roof covering with lead cover flashings and solar reflective coating.

*Condition*

Fair condition however solar reflective coating is showing signs of age with minor cracking and crazing.

*Recommendations*

Clean down roof and reapply solar reflective coating.

**E3.34 Roof B19 - Small Roof Part of Group Link Between Main and O Block**

*Description*

Asphalt roof covering with lead covering flashings and solar reflective coating.

*Condition*

Generally in fair condition however solar reflective coating is showing signs of age.

*Recommendations*

Cut out defective asphalt and make good with new asphalt, clean down roof and reapply solar reflective coating.

**E3.35 Roof B20 - Small Roof Over Bay at West End of South Side of Main B Block**

*Description*

Asphalt roof covering with lead cover flashings to upstands and solar reflective coating with brick parapet walls to perimeter.

*Condition*

Generally in fair condition, minor damage to copings.

*Recommendations*

Clean down copings, repoint in mastic.

**B BLOCK ELEVATIONS**

E3.36 **EXTERNAL ELEVATIONS**

BLOCK B

Elevations 8, 23-33

*Description*

Main block to the east of O block overlooking parade ground, 4 storeys high. First and second levels to south elevation of stone with stone features around windows and columns and stone relief over windows and dormer tops. Rear elevation mostly in brick with stone bands over windows and copings. Roofs to front of pitched roof with asphalt gutters, roofs to rear in asphalt with parapet walls. Timber and metal windows, steel downpipes and soil pipes.

*Condition*

Generally in sound condition however there are areas of spalled stone and brickwork and defective pointing. Some unsympathetic repairs have been carried out to isolated areas. Decorations to windows generally good however minor rusting and timber decay was noted.

*Repair Recommendations*

- Cut out spalled stonework and cut in new to match existing, repoint in lime mortar
- Cut out spalled brickwork and cut in new to match existing, point with lime mortar.
- Rake out defective pointing to brickwork and stonework and point in lime mortar.
- Clean down decorations to windows and joinery and redecorate.
- Clean down steelwork to downpipes, gutters, ladders, etc, treat with rust inhibitor and redecorate.

**BLOCK C - ROOFS AND ELEVATIONS**

**C BLOCK ROOFS**

**E3.37 C Main Roof Over Main Block**

*Description*

Delabole slate roof with brick gables and stone copings at north and south ends with lead ridge roles, stepped flashings and soakers at gables together with parapet gutters to east and west elevations.

*Condition*

The roof is in good condition. We understand that the roof was repaired and reslated in 1994. It has been noted however that the gutters and rainwater outlets are partially blocked due to the overhanging trees to the east face. Outlets also partially blocked with asphalt. Lead flashings to parapet gutters loose and falling out. A number of broken slates were also noted.

*Recommendations*

Replace damaged/broken slates with new.

Clean out gutters and unblock outlets of debris and asphalt.

Remove and refix lead cover flashings to gutters and point with mastic.

**E3.38 Roof C1 - Flat Roof Over Main Part of West Wing to C Main Block**

*Description*

Asphalt roof covering with lead cover flashings surrounded by brick parapet walls with stone copings.

*Condition*

Generally the roof is in fair condition, it would appear that the parapet walls have partially been rebuilt and relatively new lead flashings have been incorporated. The existing solar reflective coating is showing signs of weathering and requires attention. To some areas asphalt is cracked and crazed and some slumping noted to staircase roof. Continuous cracking above lead flashing from thermal movement.

*Recommendations*

Cut out defective asphalt and make good with new asphalt.

Clean down roof and apply solar reflective coating.

Rake out above lead flashing and re-mastic joint.

**E3.39 Roof C1A Tank Room Roof**

*Description*

Bitumen felt roof covering to hatches in three sections.



*Condition*

Generally in fair condition, timber cover strips to each joint warped.

*Recommendations*

Clean down felt and remove timber cover strips, replace with galvanised cover strip.

E3.40 **Roof C2 - Small Roof at Low Level to SW Corner of Roof C1**

*Description*

Asphalt roof covering with solar reflective coating with parapet upstands around perimeter.

*Condition*

Generally the roof is in fair condition however there is some minor cracking to coves and upstands and no lead cover flashings. The solar coating is in need of attention.

*Recommendations*

Cut out defective asphalt to roof covering and upstands and make good with new asphalt.

Provide cover flashings around upstands in Code 5 lead.

Clean down roof and reapply solar reflective coating.

E3.41 **Roof C3 - Small Roof at Low Level to NW Corner of Roof C1**

*Description*

Asphalt roof covering with solar reflective coating with parapet upstands around perimeter.

*Condition*

Generally the roof is in fair condition however there is some minor cracking to coves and upstands and no lead cover flashings. The solar coating is in need of attention.

*Recommendations*

Cut out defective asphalt to roof covering and upstands and make good with new asphalt.

Provide cover flashings around upstands in Code 5 lead.

Clean down roof and reapply solar reflective coating.

**E.3.42 Roof C4 - Small Roof Over Tank Room Adjacent to Mid Point West Side of Main C Block**

*Description*

Asphalt roof covering with no lead cover flashings and parapet wall around perimeter.

*Condition*

Generally the roof is in poor condition with no lead cover flashings installed. Asphalt coving broken away and minor cracking noted.

*Recommendations*

Cut out defective asphalt to roof and upstands and make good.

Provide cover flashings to parapet wall heads in Code 5 lead.

Rake out defective pointing to copings and re-mastic

Clean down roof and reapply solar reflective coating.

**E3.43 Roof C5 - Lower Level Flat Roof Between Main C Block and C1**

*Description*

Asphalt roof covering with parapet walls around perimeter.

*Condition*

Generally the roof covering is in poor condition with a number of cracks to coves and upstands together with areas of creep. There are no lead cover flashings or solar coating to the roof. Debris is apparent on the roof surface which is hindering the run off of water. Spalled brickwork was noted on the wall to the west side of this roof.

*Recommendations*

Remove existing asphalt and upstands and reroof with new asphalt complete.

Provide cover flashings to perimeter and parapet walls in Code 5 lead.

Cut out all defective spalled brickwork and replace with new to match.

On completion of roof apply new solar reflective coating.

**E3.44 Roof C6 - Small Flat Roof over Bay at North End of Main C Block**

*Description*

Asphalt roof covering with parapet walls and upstands around perimeter.

*Condition*

Generally the asphalt is in fair condition however there are a number of cracks and splits to the coving and upstands and some areas have crept. No cover flashings are provided to upstands around the perimeter of the roof. Open joints between coping stones.

*Recommendations*

Cut out defective areas of asphalt to roof covering, upstands and coving and make good with new.

Cut and provide new cover flashings in Code 5 lead.

Clean roof and apply solar reflective coating.

Clean out drainage channels and wash down.

Rake out joints to copings and provide new mastic.

**C BLOCK ELEVATIONS**

E3.45 EXTERNAL ELEVATIONS

BLOCK C

Elevations 12-24

*Description*

2 storey brick construction with stone relief over and below windows with slate roof over and flat asphalt to freestanding block. Stone features to bay windows. Timber and metal windows set in stone surrounds and gloss finished. Parapet walls to perimeter with stone copings.

*Condition*

Generally in good condition, some spalling of brickwork and stonework noted together with defective pointing. Decorations fair however decorations to freestanding block are in poor condition with exposed timber and flaking paint.

*Repair Recommendations*

- Cut out defective stonework and brickwork and cut in new stone and brickwork to match, point in lime mortar.
- Clean down decorations to windows, repair as necessary and redecorate.
- Clean down steelwork to gutters, downpipes, ladders, etc, treat with rust inhibitor and redecorate.
- Clean down decorations to windows and joinery and redecorate.
- Clean down steelwork to downpipes, gutters, ladders, etc, treat with rust inhibitor and redecorate.

**BLOCK D ROOFS AND ELEVATIONS**

## D BLOCK ROOFS

**E3.46 Roof D - Main Roof Over East/West Block**

*Description*

Asphalt roof coverings with solar reflective coating and lead cover flashings laid in bays with cross parapet walls. Parapets are generally constructed in brick with stone copings with the exception to the south wall where parapets are in excess of 1.5m high and are mainly constructed in stone.

*Condition*

Asphalt roofs, solar coatings and cover flashings are in good condition and appear relatively new, likewise parapet walls to the perimeters are generally in fair condition. Asphalt upstands in the main are in good condition with minor areas of creep at parapet upstands.

Areas of new asphalt have blistered and bubbled. This is possibly due to residual moisture being trapped in the structure at the time of replacement. The bubbles have burst in some areas and may be allowing water to penetrate into the deck. Areas of slumping to upstands was also noted together with a section of cover flashing which has become detached from the parapet wall.

The asphalt roof covering despite being coated with solar reflective paint was very soft at the time of inspection by solar gain and is easily marked and dented by shoes. This softness does not help the cause against slumping. Test samples should be taken to ascertain the correct asphalt for this purpose.

*Recommendations*

Cut out defective areas of asphalt to blisters and bubbles, etc and renew with new asphalt and make good solar coating.

Refix all loose flashings with lead wedges correctly plugged and masticed in place.

**E.3.47 Roofs D1, 1A and 1B Over East Wing to Main**

*Description*

Asphalt roof covering with solar reflective coating and brick parapet walls around perimeters, stone copings and lead cover flashings. Access ladders to D1A and D1B.

*Condition*

Generally the asphalt roofs are in good condition. All roofs have recently been renewed. Very minor blistering of the asphalt surface was noted (see main roof 3<sup>rd</sup> paragraph).

*Recommendations*

Cut out defective areas of blisters and bubbled asphalt and renew with new asphalt, make good solar coating.



**E.3.48    Roofs D2 and 2A - Middle Wing to Main Block and Tank Room Link**

*Description*

Asphalt roof covering with solar reflective coating, cross parapet walls, brick parapet walls, stone copings, rendered walls and lead cover flashings to perimeter. Mineral felt to roof tank enclosures with mineral felt coverings to tank enclosure.

*Condition*

The asphalt roof covering is in fair condition however very minor repairs are required to blisters and cracks. Cross wall parapets appear to be in good condition. There are defective joints between coping stones of parapets.

Cracks are apparent to the north parapet wall of roof D2A and to the reinforcing steel of the slab over the door/hatch roof is exposed to the elements and is beginning to weather badly.

*Recommendations*

Cut out areas of blistered, bubbled and cracked asphalt and renew with new asphalt.

Rake out joints to coping stones and mastic

Remove existing felt covering to tank enclosure and replace with new felt.

Remove damaged parapet wall where cracks have appeared and rebuild in new brickwork and repoint in lime mortar.

Treat exposed steelwork with rust inhibitor and provide concrete repair over door/hatch roof.

Rake out defective pointing to brickwork of parapets and repoint in lime mortar.

**E3.49    Roof D3 Over Extension to Main Block**

*Description*

Asphalt roof covering with solar reflective coating, lead cover flashings with brick parapet walls and stone copings around perimeters.

*Condition*

The asphalt roof covering is in good condition however there is an area of slumping to upstands.

*Recommendations*

Cut out defective asphalt upstand and renew asphalt, make good solar coating.

**E3.50 Roof D3A and D3C Over Extension to Building**

*Description*

Asphalt roof covering with solar reflective coating, brick parapet walls and stone copings.

*Condition*

The roof covering is in fair condition but general minor blisters and crazing is evident. Joints between coping stones are generally defective and no lead cover flashings are provided to any of the parapets. Spalling brickwork to parapet wall heads was also noted. Solar coating is weathered

*Recommendations*

Cut out defective asphalt to roof covering and renew asphalt.

Provide new cover flashings to perimeter of parapet walls.

Rake out existing mortar joints to copings and re-mastic.

Cut out all spalled brickwork and replace with new to match and bed in lime mortar.

Clean down and apply new solar reflective coating to roof covering.

**E3.51 Roof D4 Over Middle Wing to Main Block**

*Description*

Asphalt roof covering with brick parapet walls, stone copings around perimeter with lead cover flashings.

*Condition*

Generally the asphalt roof covering is in fair condition however there are areas of cracking, lead cover flashings are generally in fair condition. Moss, lichen and plant growth are evident to coping stones with poor pointing to wall faces and the access hatch for the tank room is in need of renewal.

*Recommendations*

Rake out all defective joints to copings and re-mastic.

Renew roof hatch to tank room enclosure with a framed ledged and braced door.

Clean down roof surfaces, repair cracks, blisters, etc and reapply solar film.

Remove all moss and plant growth from roofs.

**E3.52 Roof D3B High Level Roof Over 3 Storey Extension**

*Description*

Asphalt roof covering with solar reflective coating, lead cover flashings and brick parapet walls.

*Condition*

The asphalt roof covering is in good condition, however there is minor slumping of asphalt at upstands.

*Recommendations*

Cut out defective asphalt upstands, renew asphalt and make good solar coating.

**E3.53 Roof D3C Low Level Roof Over Single Storey Extension**

*Description*

Asphalt roof covering discharging into asbestos gutter and downpipe.

*Condition*

Generally the roof is poor with minor cracks and splits to surface coat. Asbestos gutter needs replacing with cast iron.

*Recommendations*

Renew roof covering with new asphalt and apply solar reflective coating.

Replace asbestos gutter with new cast iron gutter and downpipe.

**E3.54 Roof D4A Over Extension to Building D4**

*Description*

Asphalt roof covering with brick parapet walls and stone copings around perimeter, lead cover flashings and solar reflective coating.

*Condition*

Generally in good condition, recently recovered and solar reflective coated.

*Recommendations*

Maintain annually, ie 6 monthly inspections.

**E3.55 Roof D4B Plant /Tank Room Roof and Access to Roof D4**

*Description*

Asphalt roof covering with solar reflective coating with brick parapet walls, stone copings around perimeter and lead cover flashings.

*Condition*

Generally in good condition, recently renewed.

*Recommendations*

General maintenance only, ie 6 monthly inspections.

**E3.56 Roof D5 West Wing to Main Block**

*Description*

Asphalt roof covering with parapet walls, stone copings to perimeter, lead cover flashings and solar reflective coating.

*Condition*

Generally asphalt is fair with areas of cracks and splits to the roof and to upstands. The roof covering would probably best be replaced. The west facing parapet wall would appear to have been rebuilt and a solar reflective coating has previously been applied. The solar coating has weathered and requires recovering. The asphalt roof to the tank room is in poor condition and requires renewal. Moss and plant growth is evident to roof coverings and to coping joints together with defective points and joints to coping stones and brick parapet walls.

*Recommendations*

Repair asphalt roofing to all areas and reapply solar reflective coating, including tank room roof.

Rake out joints to coping stones and repoint.

Rake out defective pointing to parapet walls and repoint in lime mortar.

Clean down roofs, remove any plant growth, moss, etc and apply solar coating.

**E3.57 Roof D5A - North Extension to Block From Roof D5**

*Description*

Asphalt roof covering with brick parapet walls, stone copings around perimeter and lead cover flashings.

*Condition*

Generally the roof coverings are in fair condition however there is some cracking to the asphalt upstands. Brick parapet walls and stone copings have defective joints and require repointing.

*Recommendations*

Cut out and replace defective asphalt to roof and upstands and make good with new asphalt.

Clean down roofs and reapply solar reflective coating.

Rake out all defective joints to coping stones and re-mastic.

Rake out defective pointing to brick parapet walls and repoint in lime mortar.

**E3.58 Roof D5B - Small Flat Roof to East Extension to Block Under Roof D5**

*Description*

Bituminous felt roof covering with grey stone chippings.

*Condition*

Generally the roof covering is in fair condition however there is insufficient fall on the roof and consequently there is a considerable amount of moss and plant growth to the roof. Discharge from the roof is into a plastic gutter along the south edge and the gutter is blocked due to leaves and is distorted with age.

*Recommendations*

Remove existing roof covering, realign roof to increase fall, reroof and apply new solar reflective coating.

Remove existing gutters and downpipe and replace with new cast iron gutters and downpipes.

**E3.59 Roof D6 - Between Roofs D4A and D5**

*Description*

Asphalt roof covering with brick parapet walls and stone copings around perimeter. No lead cover flashings

*Condition*

Generally in fair condition however there has been failure of the asphalt upstands and surface asphalt together with defective pointing to brick parapet walls and stone copings.

*Recommendations*

Cut out defective asphalt to roofs and upstands and renew with new asphalt.

Provide lead cover flashings in Code 5 lead to parapet walls.

Rake out all defective joints to coping stones and re-mastic.

Rake out all defective joints to brick parapet walls and repoint in lime mortar.

Clean down all roofs and apply new solar reflective coating.

**E3.60 Roof D7 - Low Level Roof to North Side of Main Block**

*Description*

Asphalt roof covering with cover flashings to upstands. Timber roof lights to provide additional lighting to rooms below.

*Condition*

Roof covering is generally in fair condition.

*Recommendations*

Repair staircase, clean down, treat rust and redecorate.

Clean down roofs and reapply solar reflective coating.

**E3.61 Roof D8 - Small Roof Over West Extension to Main Block**

*Description*

Asphalt roof covering discharging into gutter.

*Condition*

Generally in fair condition, minor cracking noted with poor/fair solar coating.

*Recommendations*

Clean down roof, cut out cracks and make good, apply reflective solar coating.

**E3.62 Roof D9 - Roof Over Low Level Building in Corner Between Block D1 & D1A**

*Description*

Asphalt roof covering over concrete base with brick parapet walls and stone copings around perimeter.

*Condition*

Generally roof is in fair condition, some creep and splitting noted along the cove and upstands together with defective pointing between coping stones and brickwork parapet walls.

*Recommendations*

Cut out defective asphalt to roof covering and upstands and make good with new.

Clean down roof and reapply new solar reflective coating.

Rake out existing defective joints to stone copings and re-mastic.

Rake out defective pointing to brickwork and repoint in lime mortar.

E3.63 **Roof D10 - Roof in Courtyard on South Side of Main Block**

*Description*

Bitumen felt roof covering with lead cover flashings to perimeters together with brick parapet wall and stone copings around perimeter to south wall.

*Condition*

Generally the roof is in fair condition however flashings are a little long which may cause failure at the point of joints in brickwork by thermal movement. Copings along the south side of the lightwell appear to be coated in bituminous material and this is beginning to flake.

*Recommendations*

Remove existing lead flashings and apply new lead flashings to correct lengths as recommended by the Lead Development Association's Guidelines.

Clean out rainwater gutters and outlets and flush through.

Remove existing bituminous coating from parapet and overlay with new bituminous felt.

E3.64 **Roof D11 - Small Roof to West Wing**

*Description*

Asphalt roof covering with brick parapet walls, stone copings to perimeter and lead cover flashings.

*Condition*

Generally in good condition, some cracking/crazing noted. Defective pointing was noted between the coping stones and brickwork.

*Recommendations*

Cut out defective areas of asphalt to roof coverings and upstands and make good.

Rake out defective pointing to coping stones and re-mastic.

Rake out defective pointing to brickwork and make good with lime mortar.

Remove defective cover flashings and renew in Code 5 lead.

Clean down all areas, remove moss and reapply new solar reflective coating.

E3.65 **Roof D12 - Roof to Small East Wing**

*Description*

Asphalt roof covering with brick parapet walls, stone copings to perimeter and lead cover flashings.

*Condition*

Generally in good condition, some cracking/crazing noted. Defective pointing was noted between the coping stones and brickwork.

*Recommendations*

Cut out defective areas of asphalt to roof coverings and upstands and make good.

Rake out defective pointing to coping stones and re-mastic.

Rake out defective pointing to brickwork and make good with lime mortar.

Remove defective cover flashings and renew in Code 5 lead.

Clean down all areas, remove moss and reapply new solar reflective coating.

E3.66 **Roof D13 - Roof Over East Extension to Main Block**

*Description*

Asphalt roof covering with solar reflective coating, brick parapets, stone copings and lead cover flashings.

*Condition*

Generally the roof is in good condition, however blistering and bubbling of the asphalt were noted on the flat areas together with some slump to coves and upstands.



*Recommendations*

Cut out defective areas of asphalt to flat areas, coves and upstands, repair asphalt and make good solar reflective coating.

**E3.67 Roof D14 - Small Flat Roof/Balcony North East Corner of Block D13**

*Description*

Asphalt roof covering with solar reflective coating, brick parapets, stone copings and lead cover flashings.

*Condition*

Generally the roof is in good condition, however blistering and bubbling of the asphalt were noted on the flat areas together with some slump to coves and upstands.

*Recommendations*

Cut out defective areas of asphalt to flat areas, coves and upstands, repair asphalt and make good solar reflective coating.

**E3.68 Roof D15 - Small Roof Attached to East End of D13**

*Description*

Asphalt roof covering with solar reflective coating.

*Condition*

Generally the roof is in good condition, however minor cracking to front edge was noted.

*Recommendations*

Rake out all defective coping stones and re-mastic.

**E3.69 Roof D16 - Low Level Roof to Extension to D9**

*Description*

Asphalt roof covering.

*Condition*

Generally in poor condition, there are a number of splits, cracks and punctures to the roof surface together with lack of cover flashings and upstands around perimeter and gutter.

*Recommendations*

Remove existing covering and renew complete.

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Provide cover flashings to asphalt upstands in Code 5 lead.

Provide gutter/downpipe and necessary drainage to front edge.

Apply solar reflective coating to finished surface.

*Recommendations*

Break out defective pointing to brickwork and repoint using lime mortar.

Cut out spalled brickwork as necessary and make good with new to match existing, repoint with lime mortar.

Rake out joints to parapet coping stones and repoint with mastic.

Clean down gutters and wash outlets and drains.

**E3.82 Roof O5 High Level Above O2 and O3**

*Description*

Asphalt roof covering with brick parapet walls and cross walls complete with all lead cover flashings to parapet and solar reflective finish.

*Condition*

Generally asphalt is in good condition, minor crazing and blistering to cover flashings was noted and pointing to copings in need of repair. Some minor defective pointing was noted to the brick parapet wall and previous brick repairs were noted which are unsympathetic with the existing. Minor creep was noted to the steep sloping asphalt roof over the staircase.

*Recommendations*

Cut out defective brickwork and replace with new to match existing, repoint in lime mortar.

Rake out defective mortar joints to brickwork and repoint using lime mortar.

**E3.83 Roof O6 Large Asphalt Roof to North Adjacent to D Block**

*Description*

Asphalt roof covering with brick parapet walls and cross walls complete with all lead cover flashings to parapet and solar reflective finish.

*Condition*

Generally asphalt is in good condition, minor crazing and blistering to cover flashings was noted and pointing to copings in need of repair. Some minor defective pointing was noted to the brick parapet wall and previous brick repairs were noted which are unsympathetic with the existing. Minor creep was noted to the steep sloping asphalt roof over the staircase.

*Recommendations*

Cut out defective brickwork and replace with new to match existing, repoint in lime mortar.

Rake out defective mortar joints to brickwork and repoint using lime mortar.

E3.84 **Roof O7 High Level Flat Roof above O2 and O4**

*Description*

Asphalt roof covering with brick parapet walls and cross walls complete with all lead cover flashings to parapet and solar reflective finish.

*Condition*

Generally asphalt is in good condition, minor crazing and blistering to cover flashings was noted and pointing to copings in need of repair. Some minor defective pointing was noted to the brick parapet wall and previous brick repairs were noted which are unsympathetic with the existing. Minor creep was noted to the steep sloping asphalt roof over the staircase.

*Recommendations*

Cut out defective brickwork and replace with new to match existing, repoint in lime mortar.

Rake out defective mortar joints to brickwork and repoint using lime mortar.

**D BLOCK ELEVATIONS**

E3.70 **EXTERNAL ELEVATIONS**

BLOCK D

Elevations 36 to 72

*Description*

Five storey brick construction accommodation block with in set stone cut features above windows and to copings and balustrading to south elevation. Projecting contrasting brickwork to features on the south elevation. Block overlooking O block. Timber sash vertical sliding windows, gloss painted. Asphalt flat roofs over.

*Condition*

Overall the block is in good condition however there are areas of defective pointing, spalling brickwork and stonework, defective pointing to stonework and copings. External elevations generally are showing signs of weathering with paint flaking to some areas. Areas of brickwork showing signs of damp from overflowing downpipes and defective waste pipes.

*Repair Recommendations*

- Rake out defective areas of pointing to brickwork and stonework and repoint using lime mortar.
- Cut out spalling brickwork and cut in new brickwork to match existing and repoint in lime mortar.
- Cut out areas of spalling stonework, scarf in new stone and repoint with lime mortar.
- Clean down woodwork, windows and doors, cut out decayed timber, scarf in new and redecorate.
- Clean down all ironwork to gutters, hoppers, soil pipes, ladders, etc, treat with rust inhibitor and redecorate. Replace any damaged or broken with new to match.
- Clean down areas of dirty brickwork and stonework to south facing elevation prior to repointing and replacing new brickwork and stone.

**BLOCK E ROOFS AND ELEVATIONS**

**E BLOCK ROOFS**



**BLOCK E**

**E3.71 Main Roof Over Freestanding Block & Link to D Block**

*Description*

A complex roof comprising of five slated pitched roofs linked together with lead valley gutters tapering in their lengths to outlets.

*Condition*

The roof is in good condition as it was renewed in 1994.

The gutter to the link roof to Block D has not been replaced and the existing asphalt is cracked and crazed and the asphalt has started to creep at coves and upstands along the east side. In addition joints to copings stones to this link roof are defective.

*Recommendations*

Rake out defective jointing to coping stones and re-mastic.

Cut out defective areas of asphalt to flat surfaces, upstands, coves and upstands to the link roof and make good with new asphalt.

Clean down link roof and apply solar reflective coating.

**E BLOCK ELEVATIONS**

E3.72      **EXTERNAL ELEVATIONS**

BLOCK E

Elevations E1 to E4

*Description*

Single storey brick constructed building in front of D block with slate pitched roofs over and lead valley gutters. Link block from E to D block. Stone features to quoins with timber sash windows and fascias.

*Condition*

Generally in good condition with little defects noted. Very minor defective pointing noted and very minor spalling of brickwork.

*Repair Recommendations*

- Provide close inspection of brickwork, rake out defective pointing and repoint in lime mortar.

**BLOCK O ROOFS AND ELEVATIONS**

**O BLOCK ROOFS**

**E3 BLOCK O**

**E3.73 O Main Roof Over Entrance Block**

*Description*

Delabole slate roof with a number of slate gabled dormers to roof windows to south elevation.

*Condition*

The roof has recently been reslated and consequently the roof is in good condition, section of dislodged flashings were noted together with cracking of mortar joints above flashings together with general maintenance of cleaning out gutters and downpipes to ensure that water discharges correctly from the existing roof structure.

*Recommendations*

Remove defective flashings and replace pointing to be carried out in mastic not cement.

Regular cleaning of gutters, ie 6 monthly.

**E3.74 Clock Tower**

*Description*

Natural stone constructed tower roof.

*Condition*

Generally in fair condition.

*Recommendations*

Allow for detailed inspection with use of sky platform.

**E3.75 Roof O1 Over Link Between Main Entrance Block and Quarter Deck**

*Description*

Asphalt roof covering with large aluminium lantern light in the centre area and circular dome glass roof lights to side areas. Parapet walls, stone copings and lead flashings around perimeter with solar reflective coating.

*Condition*

Generally the roof is in good condition and we understand that it has recently been replaced. However there are a number of areas of minor cracking and crazing.

*Recommendations*

Replace lead flashings over and under windows with Code 5 lead.

Provide Code 5 cover flashings to upstands on buttresses.

Unblock outlet and flush through drains.

Cut out all damage to window sills and repair stone sills either with new or mortar repair.

Readjust cover flashings at base of wall or replace with Code 5 lead.

**E3.78 Roof O2B Small Flat Roof Between Buttress to East Walls Supporting Roof O2**

*Description*

Asphalt roof with upstands, no lead cover flashings to buttresses.

*Condition*

Generally the roof is in fair condition however there are cracks and crazing within the asphalt at coving and minor areas of slumping were noted. Some cracking was noted to the south buttress and we understand that tell-tales have previously been fixed. No record of any monitoring or movement was found. Unless readings are recorded it is pointless installing tell-tales. A number of window sills to the west and north walls are cracked and require either repair or replacement. Previous mortar repairs were noted. Generally there is a considerable amount of algae growth to the south end of the roof and wall areas together with areas of badly dressed lead to the base of the walls.

*Recommendations*

Replace lead flashings over and under windows with Code 5 lead.

Provide Code 5 cover flashings to upstands on buttresses.

Unblock outlet and flush through drains.

Cut out all damage to window sills and repair stone sills either with new or mortar repair.

Readjust cover flashings at base of wall or replace with Code 5 lead.

**E3.79 Roof O2C**

*Description*

Large glass lantern light with timber frame and gloss painted set at lower level between roofs O5, O6, O7 and O2

*Condition*

Generally in good condition however paintwork is beginning to weather and flake and the gutters around the perimeter of the lantern light which are asphalt are partially blocked with debris. It would appear that no lead cover flashings are provided.

*Recommendations*

Clean down, prepare as necessary all existing timber to the lantern light and redecorate complete.

Clean out gutter and repair asphalt as necessary.

Provide Code 5 lead cover flashings to perimeter.

**E3.80 Roof O3 Over West Wing to Quarter Deck**

*Description*

Natural slate laid with random slate in diminishing courses at approximate pitch of 40°. The roof is gabled to the south wall and is finished with lead ridge roll and flashings to gables and parapet gutter on side.

*Condition*

Generally the roof is in good condition but some minor spalling of the brick parapets and defective pointing to the stone copings was noted.

*Recommendations*

Break out defective pointing to brickwork and repoint using lime mortar.

Cut out spalled brickwork as necessary and make good with new to match existing, repoint with lime mortar.

Rake out joints to parapet coping stones and repoint with mastic.

Clean down gutters and wash outlets and drains.

**E3.81 Roof O4 to East Wing of Quarter Deck**

Natural slate laid with random slate in diminishing courses at approximate pitch of 40°. The roof is gabled to the south wall and is finished with lead ridge roll and flashings to gables and parapet gutter on side.

*Condition*

Generally the roof is in good condition but some minor spalling of the brick parapets and defective pointing to the stone copings was noted.



**BLOCK ELEVATIONS**

## E3.85 EXTERNAL ELEVATIONS

## BLOCK O

Elevations 7, 34-36 &amp; 74-76

*Description*

O block contains 2 main block areas, the first being the main central entrance block to the complex with a parade ground to the foreground. The block is 5 storeys high with slate pitched roof over, asphalt gutters, multiple dome windows and balustraded second storey with central stone clock tower. Upper level has inlaid brickwork between stone features matching returns to block A and B to rear block. All windows in the main are side opening casements in steel, gloss painted.

Secondary block to the north linking to D block at a higher level via the quarter deck is similar to D block and is 3 storeys high constructed in brickwork with stone features above and around windows. A mixture of pitched and flat roofs over with parapet walls around perimeters, windows are a mixture of timber and metal sash windows all gloss painted.

*Condition*

Generally in good condition, areas of spalled stone to elevation to the main south facing elevation, to other elevations spalled brickwork and defective pointing was noted together with isolated cracks. Decoration to woodwork and steel windows is generally good with isolated areas of paint flaking to woodwork. Areas of stonework and brick discoloured and dirty to north side.

*Repair Recommendations*

- Cut out areas of defective and spalling stonework, cut in new and point with lime mortar.
- Cut out all defective pointing to stonework and point with lime mortar.
- Cut out defective areas of pointing to brickwork and provide new bricks to match and repoint in lime mortar.
- Clean down all decorations to windows, doors, etc and redecorate.
- Clean down all steelwork to gutters, downpipes, soil pipes, ladders, etc, treat with rust inhibitor and redecorate.

**BLOCK W ROOFS AND ELEVATIONS**

**W BLOCK ROOFS**

E3.86 **BLOCK W**

**Roof W1 Part of Main Roof to W Block**

*Description*

Natural Delabole slate roof hipped at south end with pitched valley gutters to roof W7. Roof has lead ridge roll mitred at hip with lead soakers and gutters. Slating is of random slate in diminishing courses.

*Condition*

Generally the roof is in good condition and we understand that this was repaired and reroofed in 1991. A number of slipped slates were noted.

*Recommendations*

Maintain valley gutters to roof by cleaning off debris, ie 6 monthly and replace slipped slates.

E3.87 **Roof W2 Over Small Structure Parting Link Between Roof A Main and Roof W1**

*Description*

Asphalt roof covering with lead cover flashings and solar reflective paint, parapet walls and stone copings around perimeter.

*Condition*

Generally the roof is in fair condition however the solar reflective coating is weathered and the pointing between coping stones is defective.

*Recommendations*

Clean down roof, repair damage to existing asphalt and reapply solar reflective coating.

Rake out existing joints to coping stones and re-mastic.

E3.88 **Roof W3 Over Ednas Port to W Block at Junction with A Block**

*Description*

Asphalt roof covering with brick parapet walls and stone copings around perimeter and the roof is coated with a solar reflective coating.

*Condition*

Appears to be in fair condition however the solar reflective coating is in need of being reapplied.

*Recommendations*

Clean down roof, repair damaged asphalt and reapply solar reflective coating.

E3.89 **Roof W4 Over Centre Section to North Part of Block**

*Description*

Delabole slate roof with brick gables and dormer windows to north and south slopes. The roof is finished with lead ridge roll with lead cover stepped flashings and soakers to gables with parapet walls and stone copings to gables.

*Condition*

The roof is in fair condition however a number of tingles were visible to the slates indicating that they have slipped together with defective joints to coping stones. Also noted was the poor condition of the paintwork to fascia boards and dormer cheeks.

*Recommendations*

Remove slates fixed with lead tingles and replace with secret fixings.

Replace stepped flashings at gables to match original.

Rake out joints to coping stones on gables and repoint with mastic.

Redecorate all timberwork with gloss paint, include for replacement timbers as necessary.

E3.90 **Roof W5 Over Main Central Space of W Block**

*Description*

Delabole slate roof with brick gables and stone copings, lead ridge roll with stepped flashings and soakers to gable ends.

*Condition*

The roof would appear to be in good condition with a minor number of slates fixed with tingles.

*Recommendations*

Remove existing slates previously fixed with tingles and provide secret fixings.

Rake out defective pointing to coping stones and re-mastic.

**E3.91 Roof W6 Over Entrance Hall W Block**

*Description*

Asphalt roof covering with lead cover flashings to upstands and finished with solar reflective coating.

*Condition*

The roof is in fair condition however the solar reflective coating is showing signs of weathering. Minor cracks were noted to the surface of the asphalt with little slumping.

*Recommendations*

Cut out defective areas of asphalt and renew with new asphalt.

Clean down roof and reapply solar reflective coating.

**E3.92 Roof W7 Front Elevation Roof to South Side**

*Description*

Natural Delabole slates and small hipped bay which we understand was reslated in 1991.

*Condition*

It was noted that there are a few slipped and broken slates but otherwise the roof is in good condition.

*Recommendations*

Replace slipped or missing slates with new Delabole slates secretly fixed.

**E3.93 Roof W8 Over Corridor Between Roof W5 and W7**

*Description*

Asphalt roof covering with lead cover flashings to upstands and treated with solar reflective coating. The roof has 3 No circular glass roof lights with chicken mesh over.

*Condition*

The roof appears in fair condition. The existing timber frames over the skylight are showing signs of failure.

*Recommendations*

Clean down roof and reapply solar reflective coating.

Treat existing timber framing of rooflights.

**E3.94 Roof W9 Flat Roof at Various Levels Over Kitchen to West End W Block**

*Description*

Felt flat roof with lead cover flashings, roof is of three different levels with felt upstands.

*Condition*

Generally the roof is in fair condition but some of the felt upstands are possibly excessive in height and may require replacement in the near future. Patch repairs appear to have been carried out to the roof suggesting that the life of the existing roof covering is limited. Some lead flashings to parapet walls have been poorly dressed.

*Recommendations*

Redress existing lead flashings to parapet walls and provide mastic pointing.

**E3.95 Roof W10 Over Corridor Between W10, W4, W11 and W14**

*Description*

Asphalt roof covering with lead cover flashings to upstands and solar reflective coating. 5 No circular glass roof lights with chicken mesh and timber frames over.

*Condition*

Generally fair condition however minor cracks, blisters and creeps have been noted. A number of roof outlets appeared to be blocked and therefore water will be standing in the gutters although not at the time of inspection.

*Recommendations*

Cut out damaged asphalt where blistered and cracked and replace with new asphalt.

Clean down roof and reapply solar reflective coating.

Clear out all outlets and wash down drains.

**E3.96 Roof W11 Over West Section of North Part of Block**

*Description*

Natural Delabole slate hipped roof with gable wall finished with lead ridge roll and soakers under mitred hips and stepped flashings and cover flashings to gable end.

*Condition*

Fair condition but a number of slipped slates noted to various areas on the roof.



*Recommendations*

Refix missing and slipped slates with new slates to match existing using secret fixings.

Replace any existing stepped cover flashings with new Code 5 lead.

**E3.97      Roofs W12/W13 Over West Wing to North Part of W Block**

*Description*

Delabole slate with double hipped roof with pitched valley gutters separated by lead valley between the two roofs. Roof finished with lead soakers.

*Condition*

Slates appear in fair condition however the lead valley gutters appear to be nearing the end of their life with a number of sections appearing cracked and maybe allowing water ingress. It was also noted that a number of slates are missing and slipped.

*Recommendations*

Refix slates secretly fixed.

Replace valley gutter with Code 7 lead.

**E3.98      Roof W14 Over East End of W Block**

*Description*

Delabole slate with brick gable and stone copings, flashings to abutments, lead ridge rolls, stepped flashings at each end.

*Condition*

The roof is in fair condition but the pointing to the coping stones appear suspect and a number of slates fixed with tingles were noted. Stepped cover flashings appear to have passed their useful life.

*Recommendations*

Replace all slipped or missing slates with new to match using secret fixings.

Replace existing step flashings with Code 5 lead.

Rake out existing pointing to copings and repoint with mastic.

E3.99 **Roof W15 to Link Building to North of W Block**

*Description*

Delabole pitched roof with hipped ends, lead ridge roll, mitred hips and lead soakers.

*Condition*

Generally in fair condition, some slipped or missing slates.

*Recommendations*

Replace all missing, damaged or slates held in with tingles with new to match with secret fixings.

**W BLOCK ELEVATIONS**

**CHAPEL ROOFS AND ELEVATIONS**

**CHAPEL ELEVATIONS**

**LANDSCAPING GENERALLY**

E3.100 **EXTERNAL ELEVATIONS**

BLOCK W

Elevations 1-5 & 86-92

*Description*

The main west wing to the front facade is mainly single storey in appearance to the south side and 2 storey to the rear. The main south facing wing is of brick construction with heavy stone relief to columns and window surrounds with central water timer with stone top section. The rear section is constructed in brickwork. Windows are metal to the south elevation and timber sashes to the remainder of the building. Roofs are mainly slated with asphalt link flat roofs.

*Condition*

All generally in sound condition however there are areas of spalling brickwork and stonework, minor rusting to metal windows and decay to timberwork. Areas of defective pointing to stonework to brick with isolated areas being damaged. Areas of cracking to stonework to entrance to west front elevation possibly due to thermal movement.

*Repair Recommendations*

- Cut out all areas of spalled and damaged stonework, cut in new to match existing and point in lime mortar.
- Cut out all damaged and spalled brickwork and cut in new to match, repoint in lime mortar.
- Replace all defective pointing to stonework and brickwork and repoint in lime mortar.
- Cut out cracks in stonework and scarf in new to match.
- Clean down areas of dirty stonework and brickwork to north elevation.
- Fill all redundant holes from old fixings.
- Clean down decorations to windows, doors, fascias and redecorate.
- Clean down all metalwork to windows, gutters and downpipes, ladders, etc treat with rust inhibitor and redecorate.

E3.104 **CHAPEL**

*Description*

Delabole slate roof covering with transept roofs all with gable ends. To the north and south sides the existing asphalt roofs B13 and B9A have been included.

*Condition*

We understand that the roof was repaired and reslated in 1993. The roof would appear to be in good condition. It was noted however that some of the lower flat roofs and valley were partially blocked with leaves and a number of slates were broken.

*Recommendations*

Provide suitable access to roof and clean out valleys, gutters and hoppers and replace broken slates.

E3.105 **Roof B9A - Low Level Flat Roof between Buttress to North Side of Chapel**

*Description*

Asphalt roof covering with lead cover flashings and solar reflective coating.

*Condition*

The roof is in good, solar reflective coating slightly discoloured.

*Recommendations*

Clean down all roofs, remove all debris and apply solar coating.

E3.106 **Roof B13 - Chapel**

*Description*

Asphalt roof covering with solar reflective coating, lead cover flashings and skylights.

*Condition*

For condition of this roof see Section for Chapel.  
Generally in good condition, solar reflective coating showing signs of age.

*Recommendations*

Clean down roof and reapply solar reflective coating.



E3.107 **EXTERNAL ELEVATIONS**

BLOCK Chapel

Elevations 11, 12, 23 and 24

*Description*

Tall single storey building of brick construction with stone features and quoins around windows with slate roof over.

*Condition*

Generally in good condition, some areas of spalling to brickwork and stonework noted. Also defective pointing to brickwork and stonework, lead downpipes and hoppers. Steelwork to windows and ladders fair but showing signs of rust.

*Repair Recommendations*

- Cut out defective pointing to brickwork and stonework and repoint in lime mortar
- Cut out spalled stonework and cut in new to match existing, point with lime mortar.
- Clean down decorations to windows and joinery, treat with rust inhibitor and redecorate.

**E4.01 LANDSCAPING GENERALLY**

*Description*

Landscaping around the blocks are generally of tarmac to roads, access tracks, paths and the main parade ground. In the main these are bordered by concrete kerbs, grass banks and greens.

*Condition*

The general condition is fair. Most of the tarmac is cracked and crazed by structural sand. Regular maintenance is carried out but rather than complete renewal of areas they cut out and the tarmac is tired and chipped. This type of covering is temporary only.

Maintenance is generally carried out leading up to passing out parade at the end of July.

Grassed and soft landscaped areas are maintained generally to a good standard and regularly maintained.

*Recommended Repairs*

Other than general maintenance which the grounds are getting, little further works are required.

Re-tarmacing of drives, paths and the parade ground will be necessary within the next 5-10 years.

**SECTION F - RECOMMENDATIONS AND CLASSIFICATIONS OF PRIORITY**

## F: RECOMMENDATIONS AND CLASSIFICATIONS OF PRIORITY

### F1 INTRODUCTION, SITE SAFETY, MAINTENANCE PRIORITIES & COSTING

#### *Generally*

The following recommendations / proposals are to be regarded only as strategic statements or brief summaries of the work; before any work is carried out, a detailed specification must be prepared, based on a thorough investigation of each component of the structure. Listed Building Clearance / Consent, will be required for any proposal to alter, extend or demolish any part of the structure.

#### *Site Safety : CDM Regulations*

Recent legislation places legal obligations on all concerned with the construction and maintenance of structures. The nature of such may involve additional risks associated with the historic nature of the building. The contractor should be selected by the client as being experienced and competent to carry out work of a historic nature and have proper resources to comply with Health and Safety requirements.

#### *Interpretation of maintenance task classification priority*

Annex E point 29.a.(1) of Functional Standard 04 *MoD Conservation Manual*, refers to the highest relevant maintenance task classification priority, A1, (known as Priority 1 in FS 04), as "unavoidable work ... which cannot be deferred without breaching statutory obligations,...".

Therefore all works necessary to stop deterioration of the fabric of a Historic Structure, including works to ensure the 'shell' is "Wind and Weatherproof" should be classed as unavoidable without breaching statutory obligations and have accordingly been classified as priority A1.

#### *Basis of costings*

Costings are budget rough orders of cost, (ROC), allocated by the surveying person during the inspection and report process. The costs are an indication of the costs which could be expected if works were included either in a Term Contract or as part of a Works contract, carried out at the time of the report.

Such cost would not hold if broken down into phases or let as small separate contracts or requiring a contractor to erect scaffolding for a single item of work. All costs will need to be reviewed at local level when the work item has been investigated and recommendations, specifications etc. have been made. ROCs shown are inclusive of VAT.

**F: RECOMMENDATIONS AND CLASSIFICATIONS OF PRIORITY****F2 CLASSIFICATION OF MAINTENANCE PRIORITIES**

Structures are classified for required maintenance standard as follows:

<b>Maintenance Standard</b>	<b>Definition</b>	<b>Example</b>
<b>X</b>	<b>Exceptional</b>  Maintenance in impeccable order at all times for reasons of operational necessity, public importance, client status or environmental quality.	Selected public or defence facilities in environmentally important areas or with irreplaceable contents.
<b>N</b>	<b>Normal</b>  Fully maintained in accordance with EWC instructions and with regard to the client's needs for extended use.	All facilities except those in categories X, L, W or D.
<b>L</b>	<b>Limited Life</b>  Maintained to allow use for a period of not more than five years. Classification to be reviewed annually in consultation with client.	Asset awaiting a decision on continued use, conversion, modernisation etc.
<b>W</b>	<b>Wind and Weatherproof</b>  Disused asset maintained only to prevent serious deterioration with due regard to safety.	Asset having no present use awaiting decision on future use or disposal.
<b>D</b>	<b>Demolition Pending</b>  Maintained only to a level sufficient to obviate the risk of claims or legal action against the client or EWC.	Assets having on further use or value awaiting demolition.

The Maintenance Standard of Britannia College is "N" - Normal

**F: RECOMMENDATIONS AND CLASSIFICATIONS OF PRIORITY**

**F2 CLASSIFICATION OF MAINTENANCE PRIORITIES**

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**A1 Unavoidable Service.** Unavoidable tasks required to meet statutory obligations which must be carried out to avoid the serving of an in-year legally enforceable notice.

Failure to do so is liable to lead to prosecution and / or adverse publicity.

Preventative maintenance tasks to obviate the possibility of breaching statutory and health and safety regulations.

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**A2 Unavoidable Service.** Unavoidable MoD Mandatory Tasks and unavoidable existing in-year contractual commitments.

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**A3 Unavoidable Services.** Unavoidable planned tasks which, if not undertaken, will lead directly to unacceptable degradation of core functional capability.

**B1 Essential Services.** Planned tasks which, if not undertaken, will result in unacceptable and disproportionate expenditure in the next financial year.

**B2 Essential Services.** Works services tasks required to improve efficiency significantly with a pay back period of less than 5 years.

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**C Urgent Services.** Those services that are necessary to undertake to maintain the utility and value of the Estate. If not undertaken in the short term, there should be no adverse effect.

**D Desirable Services.** Works services which are necessary to maintain standards.

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Examples of the category classified works may be found within the PROPAN Initiative Framework Document for LTC '99 dated February 1998. Further advice on prioritisation may be found within Section A4.3.3 of the GHBAU "Handbook".

Please note that recommendations are **not** intended as a specification for the works required but simply an indication of their nature.

## REPAIR TYPES TO ELEVATIONS

A	<b>Defective/Badly Weathered Stone - General</b> Monitor and investigate in detail to decide appropriate repair option.	L	<b>Raking Out Unsympathetic Mortar and Repoint - Brick</b> Rake out sand cement render and repoint in specified matching mortar.
B	<b>Replace Damaged/Cracked Stone</b> Take out indicated block and cut back to sound core. Replace with new material to form new element to match the original in size and character.	M	<b>Raking Out Unsympathetic Mortar and Repoint - Stone</b> Rake out sand cement render and repoint in specified matching mortar.
C	<b>Piece-In Stone</b> Cut out damaged portion of stone/unsatisfactory mortar repair. Replace with new material to match the original in character.	N	<b>Removal of Efflorescence</b> Remove efflorescence and monitor.
D	<b>Pinning of Surface Spalls in Masonry</b> Pin spalling surface by means of phosphor bronze wire or stainless steel pins and epoxy resin.	O	<b>Treatment of Metal Fixtures - Retained</b> Treat and paint metal fixings as specified.
E	<b>Fissured Stonework</b> Point in fissures in individual stones as indicated using mortar mix as specified.	P	<b>Removal of Metal Fixtures</b> Remove redundant metal built-in to brick/Stone and make good as appropriate.
F	<b>Mortar Repair of Stone</b> Mortar repair to single stone in situ using mix as specified.	Q	<b>Removal of Moss &amp; Vegetation and Treatment</b> Remove ivy, other plant growth and moss. And treat with approved herbicide and make good pointing as necessary.
G	<b>Grouting Masonry</b> Apply grout to cracks in stones and voids in masonry walls.	R	<b>Removal of Algae/Slimes &amp; Treatment</b> Investigate cause of algae/slimes on brick/stone to walls, remove and treat with approved fungicide.
H	<b>Brick Repair - General</b> Investigate in detail to decide repair option. Repair options:- 1. Cut out damaged brick/s, portion of brickwork or inappropriate brick/s and piece in new to match. 2. Mortar repair to brick or bricks in situ using approved mix.	S	<b>Timber Treatment</b> Treat/paint existing timber in situ or remove and make good as indicated. Renew timber component.
I	<b>Brick Repair - Make Good Missing Bricks</b> Rake out holes including removal of remains of any broken bricks and insert new in approved mortar all to match existing.	T	<b>Check Movement in Stonework/Brickwork</b> Investigation by engineer of cracks and open joints in stonework prior to identifying repair type.
J	<b>Raking Out Defective Mortar and Repoint Brick</b> Rake out to specified depth and repoint in specified matching mortar.	U	<b>Open Up for More Detailed Inspection</b> Open up structure/roof for more detailed inspection of fault prior to defining repair type
K	<b>Raking Out Defective Mortar and Repoint Stone</b> Rake out to specified depth and repoint in specified matching mortar.	V	<b>Rainwater/Soil/Vent Pipes and Gutters</b> Replace existing plastic rainwater, soil, waste and ventilation pipes and gutters with cast iron to match existing. Where only part of pipe is to be replaced use cast iron/lead/zinc as appropriate.
		Z	<b>Particular Repair</b> Non-typical repair which is described in detail on repair sheet/schedule against relevant elevation

## REPAIR TYPES TO ROOFS

RA	<p><b>Reslate</b> Carefully remove all existing slates and battens it is anticipated that between 60% and 70% of slates can be reused. Repair replace defective/rotten timbers, structural and under slate close boarding. Re-cover roof in original form with random slates laid to diminishing courses. Incorporate high performance slater's felt, counterbattens and battens (instead of battens only) and insulation as appropriate. Provide cross ventilation to cold roofs. Renew any defective lead valleys, hips, stepped flashings, cover flashings as part of re-roofing.</p>	RI	<p><b>Cover Flashings</b> Fit lead cover flashings over tops of upstands. Work to be in accordance with the recommendations in LSA Manuals.</p>
RB	<p><b>Replace Slates</b>  Replace unsympathetic and missing slates as a short term option.</p>	RJ	<p><b>Refix Flashings</b> Refix with lead wedges and repoint loose/defective mortar to lead cover flashings.</p>
RC	<p><b>Lead Flashings</b> Replace defective lead flashings as identified. New work to be in accordance with the recommendations in LSA Manuals.</p>	RK	<p><b>Felt Roofing</b> Renew/patch repair green mineral finished felt and fit lead cover flashings over top of upstand as recommended in LSA Manuals.</p>
RD	<p><b>Lead Roofing</b> Remove existing defective lead roofing and renew to falls and details, etc as recommended in the current Lead Sheet Association Manuals</p>	RL	<p><b>Moss &amp; Vegetation</b> Remove moss and vegetation from joints, treat with herbicide/moss killer and make Good pointing.</p>
RE	<p><b>Repair Lead Roofing</b> Patch/weld repair lead as required in the short term. Extreme care should be taken if in situ lead welding carried out.</p>	RM	<p><b>Defective Pointing Brick &amp; Stone</b> Rake out defective pointing (m<sup>2</sup>) in brick Parapet walls m run in stone copings and repoint with approved mortar mix.</p>
RF	<p><b>Asphalt Roofing</b> Take up existing asphalt roof finish and lay new in accordance with recommended procedures. Upstands and fascias to be reinforced with suitable expanded metal to reduce risk of creep. Fit lead cover flashings over tops of upstands. Work to be in accordance with the recommendations in LSA Manuals.</p>	RN	<p><b>Treat Metal</b> Treat with approved rust converter/inhibitor all steel and cast iron and paint with lead based paints.</p>
RG	<p><b>Repair Asphalt</b> Cut out defective asphalt areas including coves and upstands and make good with new material to match existing and in accordance with recommended procedures.</p>	RO	<p><b>Timber Treatment</b> Clean down and repaint timber generally including fascias and eaves soffit boarding. Renew timber/timber component as directed.</p>
RH	<p><b>Solar Coating</b> Apply/reapply touch up solar reflective coating to asphalt.</p>	RP	<p><b>Rainwater Outlets, Etc</b> Clean out hopper head, rainwater outlets, etc.</p>
		RQ	<p><b>Defective Parapet Walls</b> Take down defective parapet wall and rebuild in bricks to match original.</p>
		RR	<p><b>Gutters &amp; RWP's</b> Take down defective parapet wall and rebuild in bricks to match original.</p>
		RS	<p><b>Structural Steel</b> Clean down, treat and paint all structural Steel.</p>
		RT	<p><b>Lightning Conductor</b> Pointing holes around lightning conductor fixings.</p>
		RZ	<p><b>Particular Repair</b> Special survey/action/repair/treatment as described under specific roof section.</p>



**SECTION F3:- RECOMMENDED REMEDIAL WORKS  
CHIMNEY STACKS AND OTHER FEATURES GENERALLY**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E.3.03	Provide detailed survey of all chimney stacks using a sky platform to gain access as necessary	8,000	A3	2000-2004	--	Programme works accordingly, including all repairs listed.
	Rake out all areas of defective pointing to brickwork and repoint using lime mortar.	30,000	B1	2000-2004	J	
	Cut out spalled brickwork and replace with new to match.	25,000	B1	2000-2004	H	
	Cut out spalled stonework and replace with new to match	10,000	B1	2000-2004	C	
	Replace all lead flashings, soakers, trays, etc in the appropriate lead thickness.	18,000	B1	2000-2004	RC	
	Rake out all areas of defective pointing to stonework and repoint using lime mortar.	12,000	B1	2000-2004	G	
	Rake out previous unsympathetic mortar repairs to brickwork	10,000	B1	2000-2004	L	
	Rake out previous unsympathetic mortar repairs to stonework	8,000	B1	2000-2004	L	
	Cap off disused flues and vent.	2,000	B1	2000-2004	Z	
	Clean down stacks, remove all plant growth, moss, etc	6,500	D	2000-2004	R	
	Carry out detailed inspection of roof voids to ascertain any decay caused by cracks	5,000	D	2000-2004	Z	

**SECTION F3.- RECOMMENDED REMEDIAL WORKS**

**BLOCK A - ROOFS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.01	Remove defective asphalt upstands and renew Replace slipped slates	500 100	B1 B1	2001 2000	RI RB	
E3.02	Clean down roof and apply new solar reflective coating	400	D	2001	RH	
	Rake out defective joints and mastic to copings	600	B1	2001	RM	
	Remove debris and clean outlets	100	D	2000-2004	RZ	
E3.03	Cut out defective asphalt, make good and apply solar reflective coating	500	B1	2001	RH	
E3.04	Clean down copings and re-mastic	300	B1	2001	RM	
E3.05	Clean down copings and re-mastic	300	B1	2001	RM	
E3.06	Cut out and repair asphalt to upstands Cut out and provide new cover flashings	800 2,500	B1 B1	2001 2001	RG RC	
	Rake out defective pointing to copings and mastic	2,200	B1	2001	RM	
	Rake out defective pointing to parapets and repaint	800	B1	2001	RM	
	Apply solar reflective coating.	2,100	B1	2001	RH	
E3.07	Cut out defective asphalt and make good	2,000	B1	2001	RG	
	Clean down and reapply solar reflective coating	2,100	B1	2001	RH	
E3.08	Cut out defective areas of asphalt and make good	500	B1	2001	RG	
	Apply new solar reflective coating	400	B1	2000	RH	
E3.09	Cut out defective areas of asphalt and make good	300	B1	2001	RG	
	Apply new solar reflective coating	300	B1	2001	RG	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK A - ROOFS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.10	Annual maintenance	400	D	2000-2004	RZ	
E3.11	Renew asphalt roof covering, flashings and solar reflective coating	10,000	B1	2001	RF	
E3.12	Cut out defective asphalt and make good	500	B1	2001	RG	
E3.13	Cut out defective asphalt and make good	500	B1	2001	RG	
E3.14	Cut out defective asphalt and make good	500	B1	2001	RG	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK A - EXTERNAL ELEVATIONS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.15	Cut out spalled stonework and make good	12,500	B1	2001	C	
	Cut out spalled brickwork and make good	10,000	B1	2001	I	
	Rake out defective pointing to stonework and repoint	12,000	B1	2001	F	
	Rake out defective pointing to brickwork and repoint	15,000	B1	2001	J	
	Clean down and redecorate metalwork	7,800	B1	2002	S	
	Clean down and redecorate gantry	8,500	B1	2002	O	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK B - ROOFS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E.3.16	Remove defective flashings and re-mastic General cleaning annually	500 300	D D	2000 2000- 2004	RI RZ	
E.3.17	Cut out defective asphalt and make good.	500	B1	2000	RG	
E.3.18	Cut out defective asphalt and make good	1,000	B1	2000	RG	
E.3.19	Cut out defective asphalt and make good	1,000	B1	2000	RG	
E.3.20	General annual maintenance	300	D	2000- 2004	RZ	
E.3.21	Cut out spalling bricks and make good Rake out unsympathetic pointing and repoint	400 400	D D	2001 2001	I M	
E.3.22	Cut out defective asphalt and make good Clean down and apply solar reflective coating	400 500	D D	2001 2001	RG RH	
E.3.23	Mastic cracks above lead flashings Cut out defective asphalt and make good Clean down and apply solar reflective coating	300 400 500	D D D	2001 2001 2001	RZ RG RH	
E.3.24	Mastic cracks above lead flashings Cut out defective asphalt and make good Clean down and apply solar reflective coating	300 400 500	D D D	2001 2001 2001	RZ RG RH	
E.3.25	Mastic cracks above lead flashings Clean down roof and apply solar reflective coating	300 500	D D	2001 2001	-- RH	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK B - ROOFS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E.3.26	Cut out defective asphalt and make good Provide new lead flashings Renew cast iron gutters and downpipes Rake out defective pointing to copings and re-mastic	500 2,500 800 600	B1 B1 B1 B1	2001 2001 2001 2001	RG RC RR RM	
	Rake out defective point to brick parapets Remove redundant cast iron .....	800 100	B1 B1	2001 2001	RM RR	
	Clip back and tidy wires	100	B1	2001	RZ	
	Cut out spalled stonework and make good	1,200	B1	2001	A	
E.3.27	General maintenance	300	D	2001		
E.3.28	General maintenance	300	D	2001		
E.3.29	General maintenance	300	D	2001		
E.3.30	Clean down copings and re-mastic	500	D	2001		
E.3.31	Apply solar reflective coating	400	D	2001		
E.3.32	Clean down and apply solar reflective coating Rake out defective joints to copings and re-mastic Remove moss, etc	500 300 100	D D D	2001 2001 2001		
E.3.33	Clean down and apply solar reflective coating	400	D	2001		
E.3.34	Repair asphalt and apply solar reflective coating	500	D	2001		
E.3.35	Clean down copings and re-mastic	300	D	2001		

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK B - EXTERNAL ELEVATIONS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.36	Cut out spalled stonework and make good	12,500	B1	2001	C	
	Cut out spalled brickwork and make good	10,000	B1	2001	I	
	Rake out defective pointing to stonework and repoint	12,000	B1	2001	F	
	Rake out defective pointing to brickwork and repoint	15,000	B1	2001	J	
	Clean down and redecorate metalwork	7,800	B1	2002	S	
	Clean down and redecorate gantry	8,500	B1	2002	O	

SECTION F3:- RECOMMENDED REMEDIAL WORKS

BLOCK C - ROOFS

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E.3.37	Clean out gutter and remove debris Refix lead cover flashings Replace damaged slates	300 500 400	D A3 B1	2000- 2004 2000	RZ RC RB	
E.3.38	Cut out defective asphalt and make good Clean down roof and apply solar reflective coating	500 1,200	B1 B1	2001 2001	RG RG	
E.3.39	Rake out pointing to flashings and re-mastic Replace felt roofing	1,000 1,000	B1 D	2001 2001	RC RK	
E.3.40	Cut out defective asphalt and make good Provide new cover flashings	800 1,300	B1 B1	2001 2001	RG RC	
E.3.41	Clean down and apply solar reflective coating Cut out defective asphalt and make good Provide new cover flashings	500 800 1,300	B1 B1 B1	2001 2001 2001	RH RG RC	
E.3.42	Clean down and apply solar reflective coating Cut out defective asphalt and make good. Provide cover flashings to parapets	500 300 800	B1 D D	2001 2001 2001	RH RG RC	
E.3.43	Rake out defective pointing to copings and mastic Clean down and apply solar reflective coating Cut out defective asphalt and make good. Provide cover flashings to parapets Rake out defective pointing to copings and mastic	400 300 300 800 400	D D D D D	2001 2001 2001 2001 2001	RM RH RG RC RM	



**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK C - ROOFS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E.3.44	Clean down and apply solar reflective coating	300	D	2001	RH	
	Cut out defective asphalt and make good	300	D	2001	RG	
	Provide new cover flashings	500	D	2001	RC	
	Clean down and apply solar reflective coating	400	D	2001	RH	
	Rake out joints to copings and re-mastic	200	D	2001	RM	
	Clean drainage channels	100	B1	2000-2002	RC	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK C - EXTERNAL ELEVATIONS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.45	Cut out defective stonework and make good	8,500	B1	2002	C	
	Cut out defective brickwork and make good	12,500	B1	2002	I	
	Clean down metalwork and redecorate	12,000	B1	2002	)	

SECTION F3:- RECOMMENDED REMEDIAL WORKS

BLOCK D - ROOFS

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E.3.46	Cut out defective areas of asphalt and make good. Refix loose flashings and mastic.	4,500 3,000	A3 A3	2000 2000	RG RJ	
E.3.47	Cut out defective areas of asphalt and make good	2,200	A3	2000	RG	
E.3.48	Cut out defective areas of asphalt and make good Rake out joints to copings and re-mastic Replace tank room roof Repair parapet wall and rebuild Treat exposed steelwork	2,200 3,200 1,000 2,200 700	A3 A3 B1 B1 B1	2000 2001 2001 2001 2000	RG RM RK RQ RS	
E.3.49	Cut out defective coving and make good	500	A3	2000	RG	
E.3.50	Cut out defective asphalt and make good Provide new cover flashings Rake out mortar joints to copings and re-mastic Cut out spalled brickwork and renew Clean down and apply solar reflective film	1,500 1,800 1,500 1,000 1,000	B1 B1 B1 B1 B1	2001 2001 2001 2001 2001	RG RI RM RI RH	
E.3.51	Rake out defective joints to copings and re-mastic Renew hatch to roof tank Cut out defective asphalt and make good Remove moss and plant growth and clean	1,500 500 1,800 800	B1 B1 B1 D	2001 2001 2001 2001	RM RZ RG RL	
E.3.52	Cut out defective asphalt and make good OR Renew roof covering	400 1,000	B1 D	2001 2002	RG RF	
E.3.53	Replace gutters and downpipes	300	D	2002	RR	

SECTION F3:- RECOMMENDED REMEDIAL WORKS

BLOCK D - ROOFS

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E.3.54	Annual maintenance	300	D	2000-2004	RZ	General annual maintenance
E.3.55	Annual maintenance	300	D	2000-2004	RZ	General annual maintenance
E.3.56	Cut out, repair asphalt and make good Rake out joints to copings and mastic Rake out and repoint walls to parapet Clean down roofs and apply solar reflective coating	2,000 1,200 2,000 1,800	B1 B1 B1 B1	2000 2000 2000 2000	RG RM RM RH	
E.3.57	Cut out and repair defective asphalt and make good Clean down and supply solar reflective coating Rake out joints to copings and mastic Rake out joints to brick parapets	500 300 400 500	B1 B1 B1 B1	2001 2001 2001 2001	RG RG RG RM	
E.3.58	Renew roof covering and apply new asphalt Renew existing gutter and downpipe	2,000 400	D D	2001 2001	RF RR	
E.3.59	Cut out defective asphalt and make good. Provide new cover flashings Rake out defective pointing to copings and re-mastic Rake out pointing to brick parapets and repoint Clean down and apply solar reflective coating.	300 500 300 300 400	A3 A3 A3 A3 A3	2001 2001 2001 2001 2001	RG RC RM RM RH	
E.3.60	Repair steel staircase. Clean down roof and apply solar reflective coating	500 3,600	D A3	2001 2001	RT RH	

SECTION F3:- RECOMMENDED REMEDIAL WORKS

BLOCK D - ROOFS

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.61	Clean down roof, repair asphalt and make good	1,000	A1	2001	RG	
E3.62	Clean down roof, repair asphalt and make good	1,800	A1	2001	RG	
	Clean down and apply new solar reflective coating	450	P	2001	RH	
	Rake out pointing to copings and re-mastic	700	D	2001	RM	
	Rake out pointing to brickwork and repaint	900	D	2001	RM	
E.3.63	Remove flashing and renew	200	D	2000	RC	
	Clean down gutters	200	D	2000	RP	
	New bitumen coating	500	D	2001	RH	Annual maintenance
E.3.64	Cut out areas of defective asphalt and make good	400	D	2000	RG	
	Rake out pointing to copings and re-mastic	500	D	2000	RM	
	Repair cover flashings	200	D	2000	RE	
	Clean down and apply new solar reflective coating	300	D	2000	RH	
E.3.65	Cut out areas of defective asphalt and make good	400	D	2000	RG	
	Rake out pointing to copings and re-mastic	500	D	2000	RM	
	Repair cover flashings	200	D	2000	RE	
	Clean down and apply new solar reflective coating	300	D	2000	RH	
E.3.66	Cut out defective asphalt and make good	800	D	2001	RG	
E.3.67	Cut out defective asphalt and make good	500	D	2001	RG	
E.3.68	Cut out defective asphalt and make good	400	D	2001	RG	
E.3.69	Renew asphalt roof	1,500	B1	2000	RF	
	Provide cover flashings	300	B1	2000	RC	

**SECTION F.3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK D - ROOFS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
	New gutters and downpipes	350	B1	2000	RR	
	New solar reflective coating	400	B1	2000	RH	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK D - EXTERNAL ELEVATIONS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.70	Rake out defective areas of pointing and repoint	35,000	A3	2001-2002	J	
	Cut out spalling brickwork and repair	15,000	A3	2001-2002	I	
	Cut out spalling stonework and repair	5,000	A3	2001-2002	C	
	Clean down woodwork and redecorate	32,000	B1	2001	S	
	Clean down gutters and downpipes, etc and redecorate	12,000	B1	2001	O	
	Clean down areas of dirty brickwork and stonework	6,000	B1	2001	Z	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK E - ROOFS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E.3.71	Rake out defective pointing to copings and re-mastic Cut out defective areas of asphalt and make good Clean down and apply solar reflective coating	2,000 1,800 1,000	D D D	2001 2001 2001	RM RG RH	



**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK E - EXTERNAL ELEVATIONS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.72	Repair defective pointing	3,000	B1	2001	J	
	Repair spalled brickwork	2,000	B1	2001	I	
	Redecoration complete	4,000	B1	2002	S	

SECTION F3:- RECOMMENDED REMEDIAL WORKS

BLOCK O - ROOFS

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.73	Remove defective flashings, re-fix and re-mastic Regular cleaning of gutters	8,000 1,000	D D	2001 2000- 2004	RJ RC	
E3.74	Provide detailed inspection of tower with use of sky platform	4,000	D	2000	RZ	
E3.75	Cut out defective asphalt and make good. Clean down roof	3,000 300	B1 D	2001 2000- 2004	RG RZ	
E3.76	Replace broken and missing slates Rake out and reprint copings in mastic Repair defective lead flashings Clean down gutters, etc	300 500 400 300	D D D D	2001 2001 2001 2000- 2004	RB RQ RJ RT	
E3.77	Replace lead flashings Unblock drains	600 300	D D	2001 2000- 2004	RC RZ	
E3.78	Repair damaged window sills Replace lead flashings Unblock drains	400 600 300	B1 D D	2001 2001 2000- 2004	RZ RC RZ	
E3.79	Repair damaged window sills Repair timber lantern and decorate Clean down gutters and repair asphalt Provide cover flashings	400 2,500 400 3,200	B1 D D D	2001 2001 2001 2001	RZ RZ RZ RC	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK O - ROOFS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.80	Repoint defective pointing to brickwork Cut out spalled brickwork and make good Rake out pointing to copings and re-mastic Clean down roofs	800 700 1,200 500	D D D D	2001 2001 2001 2001	RM H RM RZ	
E3.81	Repoint defective pointing to brickwork Cut out spalled brickwork and make good Rake out pointing to copings and re-mastic Clean down roofs	800 700 1,200 500	D D D D	2001 2001 2001 2001	RM H RM RZ	
E3.82	Cut out defective brick wall and make good Rake out pointing to brickwork and repoint	1,800	B1	2001	H RM	
E3.83	Cut out defective brick wall and make good Rake out pointing to brickwork and repoint	1,800	B1	2001	H RM	
E3.84	Cut out defective brick wall and make good	1,800	B1	2001	H	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS  
BLOCK O - EXTERNAL ELEVATIONS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.85	Rake out pointing to brickwork and repoint		B1	2001	RM	
	Rake out areas of defective pointing and repoint	8,500	B1	2001	J	
	Cut out spalling brickwork and make good	3,000	B1	2001	I	
	Cut out spalling stonework and make good	2,000	B1	2001	C	
	Rake out defective pointing to stonework	2,500	B1	2001	F	
	Clean down joinery, etc and redecorate	6,200	B1	2002	S	
	Clean down all metalwork and redecorate.	5,800	B1	2002	O	

SECTION F3:- RECOMMENDED REMEDIAL WORKS

BLOCK W - ROOFS

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.86	Annual maintenance	600	D	2000-2004	RZ	
E3.87	Repair asphalt and reapply solar reflective coating	300	B1	2001	RH	
E3.88	Repair asphalt and reapply solar reflective coating	600	B1	2001	RH	
E3.89	Refix slipped slates	100	B	2000	RB	
	Refix stepped flashings	800	D	2000	RC	
E3.90	Refix slipped slates	200	B1	2000	RB	
E3.91	Clean down roof and apply solar reflective coating	1,000	D	2001	RH	
E3.92	Refix slipped slates	200	B1	2000	RB	
E3.93	Apply solar reflective coating	1,000	B1	2001	RH	
E3.94	Redress lead and mastic	500	D	2001	RC	
E3.95	Cut out damaged asphalt and make good	3,000	B1	2001	RG	
	Apply solar reflective coating	2,000	B1	2001	RH	
E3.96	Refix missing slates	200	D	2000	RB	
	Replace stepped flashings	800	B1	2000	RC	
E3.97	Refix slipped slates	300	D	2000	RB	
	Replace valley gutter in lead	5,000	B1	2001	RE	
E3.97	Refix slipped slates	300	D	2000	RB	
	Replace valley gutter in lead	5,000	B1	2001	RE	
E3.98	Replace slipped slates	100	B1	2000	RB	
	Replace flashings	500	D	2000	RC	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**BLOCK W - ROOFS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.99	Repoint copings in mastic Replace slipped slates	400 200	D D	2001 2000	RM RB	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**  
**BLOCK W - EXTERNAL ELEVATIONS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.100	Cut out areas of spalled brickwork and make good.	18,000	B1	2001	I	
	Cut out areas of spalled stonework and make good	8,000	B1	2001	C	
	Rake out areas of defective pointing and repoint brickwork	7,000	B1	2001	J	
	Rake out areas of defective pointing to stonework and repoint	3,000	B1	2001	F	
	Redecorate joinery, etc	5,500	B1	2002	S	
	Clean down and redecorate metalwork	3,500	B1	2002	O	
	Fill redundant holes in walls	1,000	B1	2001	Z	
	Clean areas of dirty stone and brickwork	4,500	B1	2001	Z	

**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**CHAPEL ROOFS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3:104	Provide suitable access to clean down valley gutters, etc	600	D	2000-2004	TZ	General annual maintenance



**SECTION F3:- RECOMMENDED REMEDIAL WORKS**

**CHAPEL EXTERNAL ELEVATIONS**

Reference	Brief Description of Item	Cost	Priority	Year	Repair Code	Comments
E3.107	Cut back defective pointing to brickwork and stonework and repoint	12,800	B1	2001	J&G	
	Cut out spalled stonework and make good	5,000	B1	2001	C	
	Cut out spalled brickwork and make good	5,000	B1	2001	I	
	Redecorate metalwork	4,800	B1	2001	O	