

Birsay Heritage Trust

Buildings at
HMS TERN
Twatt, Birsay



CONDITION REPORT and PROPOSED WORKS

January 2014



Leslie Burgher *Chartered Architect*

Introduction

This survey was carried out to make an assessment of the building for the purpose of assessing the extent of works required to bring it into good condition and make it suitable for use as a visitor attraction.

The descriptions of work should be read in conjunction with the drawings of the proposals.

The survey of the premises was carried out on 12 April 2013, at which time access was made available to the interior of the Control Tower, with a follow-up visit on 25 May 2013. The weather conditions were fine on each occasion.

The buildings are unoccupied.

Please note the LIMITATIONS on the scope of this survey listed at the end.

Leslie Burgher Chartered Architect
December 2013

Contents

| | | |
|-----|--------------------------------|----|
| 1 | CONTROL TOWER..... | 3 |
| 1.1 | STRUCTURE..... | 3 |
| 1.2 | ROOFING | 5 |
| 1.3 | STAIRS..... | 6 |
| 1.4 | WALLS | 7 |
| 1.5 | WINDOWS, DOORS ETC..... | 8 |
| 1.6 | FINISHES | 10 |
| 1.7 | SERVICES..... | 11 |
| 1.8 | DOWNTAKINGS..... | 13 |
| 1.9 | SITE WORKS..... | 14 |
| 2 | GENERATOR BUILDING..... | 15 |
| 2.1 | STRUCTURE..... | 15 |
| 2.2 | ROOFING | 16 |
| 2.3 | WALLS | 16 |
| 2.4 | WINDOWS, DOORS ETC..... | 16 |
| 2.5 | FINISHES | 17 |
| 2.6 | SERVICES..... | 18 |
| 2.7 | SITE WORKS..... | 18 |
| 3 | TOILET BLOCKS..... | 19 |
| 3.1 | ROOFING | 19 |
| 3.2 | WALLS | 19 |
| 3.3 | WINDOWS, DOORS ETC..... | 19 |
| 3.4 | FINISHES | 20 |
| 3.5 | SERVICES..... | 20 |
| 3.6 | DOWNTAKINGS AND ALTERATIONS... | 21 |
| 3.7 | SITE WORKS..... | 21 |

1 CONTROL TOWER

1.1 STRUCTURE

Element

1.1.1 Concrete lintols



Condition

Original concrete lintols at tower level are in poor condition.

Recommendation

Allow for removing spalling concrete, descaling and treating exposed reinforcement and patching with proprietary repair material.

1.1.2 Concrete slabs



Existing roof slabs have various cracks and suffer from localised spalling of concrete cover to reinforcement.

Allow for cutting out cracks to sound base and repointing with proprietary repair compound.

Allow for removing spalling concrete, descaling and treating exposed reinforcement and patching with proprietary repair material.

1.1.3 Supports for balcony



Existing balcony is in only fair condition and suffers from cracking (Structural Engineer's Report: 3.4.8)

Allow for cutting out and sealing cracks with epoxy.

Provide new steel support brackets.

1.1.4 Beam to top level of control tower



Beam is heavily corroded and causing damage to building

Replace beam to tower

1.1.5 Brick Chimney



Structural Engineer's Report identifies possible issues with slenderness of chimney and proposes bracing of chimney.

Provide steel collar and brace to chimney.

1.2 ROOFING

1.2.1 Roofcoverings to main roof



Existing roofcoverings mostly eroded.

Roof was formerly covered with gravel for blast protection but this has been removed.

Overlay with insulation on vapour barrier overlaid with ply deck.
Install new single ply roofcoverings.
Include for forming roofcoverings over roof duct and to parapet with lead flashing to edge.

Omit gravel.

1.2.2 Roof Duct

Covers missing.

Reinstate concrete covers.

1.2.3 Roofcoverings to tower

The original bitumen roofcoverings have largely eroded from the concrete slab.

Form new single ply roofcoverings including making good edge, repairing cracks and screeding to falls as required.

1.3 STAIRS

Element

1.3.1 Roof Access and stair



Condition

Existing steel stair between roof and tower level is badly corroded and too steep to act as public stair.

Recommendation

Existing stair to be restored/replaced to original pattern.

Form new galvanised steel stair and roof access walkway to allow safe public access as drawings.

Form new galvanised steel steps to first floor level of tower.

1.3.2 Stair from ground floor to roof



Stair has a number of broken treads and is too narrow to provide adequate access.

Remove stair and make good as required.

1.3.3 Handrails to balcony



Existing handrail is badly corroded

Allow for cleaning down existing handrail, replacing rail and fitting replacement sections as required. Allow also for mesh infill panels to allow public access

1.4 WALLS

Element

1.4.1 Brick walls



Condition

Walls are generally in good condition.

Parts of tower have cement render which is in poor condition and is either boss or has fallen from the walls.

Recommendation

Remove all loose and boss render and re-render tower.

Allow for powerwashing walls to remove algae growth and provisionally for minor repointing.

In particular fill drilled shot-holes to walls of building.

1.5 WINDOWS, DOORS ETC.

Element

1.5.1 Glass brick windows to ground floor



Condition

Former glass brick windows have been broken and removed

Recommendation

Reinstate glass brick windows

1.5.2 External Doors



Original timber doors have been removed

Reinstate timber framed, ledged and braced doors.

1.5.3 Windows



Original steel windows are largely missing and the few remaining ones are corroded beyond repair.

Replace windows

1.5.4 Gratings and grilles



Original iron grilles are corroded and mostly missing.

Replace grilles in galvanised steel

1.6 FINISHES

Element

1.6.1 Internal Walls



Condition

Existing walls are in fair condition. Patches of algae etc in areas of ingress of water.

The former radio room has the remains of a 'Faraday Cage' with wire mesh on timber framing faced with board. This is in very poor condition.



Recommendation

Walls to be repainted using mineral paint to original colours.

Strip out and reinstate studwork, mesh and plasterboard to radio room.

Allow for strapping and lining to 2no. rooms for storage purposes.

1.6.2 Floors



Existing concrete floors.

Clean out and paint floors

1.6.3 Ceilings



Clean off ceilings and remove algae, patch holes and cracks.

1.7 SERVICES

1.7.1 Rainwater Goods



Existing cast iron hopper heads and downpipes in rusted condition or missing.

Carefully remove and restore any existing rainwater goods.

Supply and install

Reform outlets through wall in lead.

1.7.2 External Drainage



Existing roof drainage falls to channel in basement area with drain at NE corner.

Original covers are missing. Drain appears to be blocked.

Excavate and clear drain.

Form new soakaway.

1.7.3 Existing electrical system



The existing electrical system has largely been stripped out. Some sections of conduit and original switchgear remain. In particular, some of the original runway lighting switchgear at first floor level.

Existing switchgear etc to be preserved and retained.

Install new electrical system in conduit with suitable period switches sockets and light fittings.

Install Anemometer etc.

1.7.4 Power Supply

None

Install new power supply to plant room as per quotation from SSE.

1.7.5 Heating



Remains of existing solid-fuel boiler in plant room.

Former 'hospital pattern' radiators generally no longer present. Those that remain are not in usable condition.

New electric radiators to traditional design as basic heating system.

Alternatives may need to be considered. See Conservation Management Plan.

1.7.6 Ventilation

Some remains of original steel ducting.

Existing ducting to be retained and painted.

1.7.7 Water supply

None

No recommendations.

1.8 DOWNTAKINGS

1.8.1 Asbestos Removal

ACM's present in shelves to fixture in central area.

Allow for full asbestos survey.

Allow for removal of shelves.

1.9 SITE WORKS

1.9.1 Site Works

Access Road is narrow, with inadequate turning space and with gates to prevent access by farm animals.

Earth bunding to retaining wall has been widely removed.

Upgrade track with widening and passing places as drawings. Form parking spaces using grasscrete or similar.

Regrade bund with suitably compacted subsoil/soil.

Allow for new fences to accommodate changes.

Allow for 2no. cattle grids to allow removal of gates.

Allow for flagpole.

2 GENERATOR BUILDING

| Element | Condition | Recommendation | Priority |
|---------|-----------|----------------|----------|
|---------|-----------|----------------|----------|

2.1 STRUCTURE

2.1.1 Beam to entrance door



Entrance has been enlarged by removing beam and areas of brickwork to each side. NO STRUCTURAL SUPPORT HAS BEEN PROVIDED TO THE WALL ABOVE.

URGENTLY Prop brickwork.

Reinstate brick piers to either side of doors and insitu reinforced concrete beam over.

2.1.2 Steel Structure



Existing steel frame has surface rust.

Existing steelwork to be thoroughly inspected.

Clean off loose material, treat with rust-converting primer and paint system.

2.1.3 Concrete beams and slabs

Existing slab

Allow for cutting out cracks to sound base and repointing with proprietary repair compound.

Allow for removing spalling concrete, descaling and treating exposed reinforcement and patching with proprietary repair material.

2.2 ROOFING

2.2.1 Roofcoverings

The original bitumen roofcoverings have largely eroded from the concrete slab.

Overlay roof with vapour barrier, insulation and plywood deck.

Form new single ply roofcoverings
Include making good edge, repairing cracks and screeding to falls as required.

2.3 WALLS

2.3.1 Brick Walls

Existing brickwork in good condition.

Allow for cleaning off and minor repointing.

Allow for building up redundant openings with brickwork.



2.4 WINDOWS, DOORS ETC

2.4.1 Doors

No doors existing

Form new traditional ledged framed and braced timber doors.

2.4.2 Windows



No existing windows

Install new steel windows.

2.5 FINISHES

2.5.1 Internal walls

No existing finishes.

Strap and line existing walls with timber studs, insulation and plasterboard. Painted

2.5.2 Ceiling

Existing concrete soffit

Patch and repair as required.
Paint

2.5.3 Floor

Existing concrete floor with generator plinths.

Clean out existing rubbish. Patch floor as required.
Paint floor

2.6 SERVICES

2.6.1 Rainwater



Existing cast iron downpipes.
In rusted condition and partly missing.

Take down, clean off and refurbish existing downpipes. Allow for 50% replacement.

Replace missing downpipe.

Paint

2.6.2 Drainage

Presumed to be non-functional.

Form new soakaways.

2.6.3 Water Supply

None

None

2.6.4 Electrical Supply

No existing provision

Lay new armoured sub-main from mains supply at Control Tower with meter and distribution board.

2.6.5 Electrical System

No existing provision

Allow for installing new small power and lighting system.

2.6.6 Heating

No existing provision

Allow for electric heating system.

2.7 SITE WORKS

2.7.1 Access

Existing hardcore access between road and building.


Upgrade existing access.

2.7.2 Surrounding to building

Vegetation growth and build up of soil around building.

Dig out around building and form 600mm gravel mowing strip.

3 TOILET BLOCKS

| Element | Condition | Recommendation | Priority |
|---|--|---|----------|
| 3.1 ROOFING | | | |
| 3.1.1 Roofcoverings | The original bitumen roofcoverings have largely eroded from the concrete slab. | Overlay roof with vapour barrier, insulation and plywood deck. Form new single ply roofcoverings Include making good edge, repairing cracks and screeding to falls as required. | |
| 3.2 WALLS | | | |
| 3.2.1 Brick Walls | Existing brickwork in good condition. | Allow for cleaning off and minor repointing. Allow for building up redundant openings with brickwork. | |
|  | | | |
| 3.3 WINDOWS, DOORS ETC | | | |
| 3.3.1 Doors | No doors existing | Form new traditional ledged framed and braced timber doors. | |
| 3.3.2 Windows | No existing windows | Install new timber windows. | |

3.4 FINISHES

| | | | |
|-------|----------------|--------------------------|--------------------------|
| 3.4.1 | Internal walls | Existing brickwork | Paint with mineral paint |
| 3.4.2 | Ceilings | Existing concrete soffit | Paint with mineral paint |
| 3.4.3 | Floors | Existing concrete floor | Paint |

3.5 SERVICES

| | | | |
|-------|-----------------------|------|--|
| 3.5.1 | Rainwater | None | New cast-iron gutter and downpipes |
| 3.5.2 | Drainage | None | New sewage treatment plant, associated pipework and soakaway. New pipework, soakaways to surface water. |
| 3.5.3 | Sanitary Installation | None | Install new sanitary fittings and pipework |
| 3.5.4 | Water Supply | None | Install new mains water supply. |
| 3.5.5 | Electrical Supply | None | Lay new armoured sub main from mains supply at Control Tower and distribution board. |
| 3.5.6 | Electrical System | None | Install lighting and small power system. |
| 3.5.7 | Heating | None | None proposed. |

3.6 DOWNTAKINGS AND ALTERATIONS

3.6.1 Internal partitions

Form new opening with lintol over to create wheelchair accessible toilet and make good.
New brick partitions.

3.7 SITE WORKS

3.7.1 Works generally



New Fence

Level access to toilet blocks and form additional parking bays along road

Form access paths

Form access ramp to accessible toilet.

LIMITATIONS

- 1 If you have given us any information in connection with these instructions we will rely upon it.
- 2 In preparing this Report we will have inspected as much of the surface area as was practicable, but there was no obligation to raise fixed floorboards or to lift carpets, move furniture etc or to inspect those areas of the property that were covered, unexposed or not readily accessible. The inspection of the exterior has been carried out generally from ground level only.
- 3 This Report does not purport to express an opinion about, or to advise upon, the condition of covered or uninspected parts and should not be taken as making any implied representation or statement about such parts other than a general presumption that such uninspected parts are sound and in good order.
- 4 In the preparation of this Report the services (plumbing, electrical, heating, ventilation, hot water, drainage etc) have only been inspected sufficiently to enable a statement to be made on the nature of the services installed. The services, where they exist, have not been either technically assessed or tested. If during the course of the superficial inspection a significant defect was noted then that will have been reported but the underlying assumption is that the services are free from material defects and that they are fit for their purposes.
- 5 We will not make enquiries of Authorities or Agencies in regard to such matters as Permissions, Consents, Approvals, Rights of Access or the like - although if we consider that you should do so we will include a comment in the Report. It is assumed that the subjects did not breach any Planning or Building Regulations at the date of survey.
- 6 The Report gives no undertaking and accepts no liability whatsoever as regards pollution/contaminated land. Within the terms of a survey it is not possible to carry out the investigations that would be necessary in order to give any meaningful statement on pollution/contaminated land. This Report presumes, therefore, that the subjects are free from the risks of such hazards but gives no undertaking as to the reasonableness of that assumption. If you are concerned about these risks you should seek specialist advice.
- 7 Although we may point out any suspected Asbestos Containing Materials (ACMs) that we have noted, this report does not constitute an Asbestos Survey. It is an obligation under the Control of Asbestos Regulations 2012 for owners of non-domestic premises to take reasonable steps to find out whether ACMs are present in non-domestic properties, by carrying out a survey and recording ACMs. This is a specialist service which should be carried out by a suitably qualified expert.
- 8 This report does not assess the condition of the building or its systems in relation to current Building Standards or other regulatory requirements. It is generally accepted that there is no requirement to bring existing buildings fully up to current standards unless where reasonably practical in the course of substantial major works. Issues such as requirements to improve insulation or to upgrade services to meet current standards etc may need to be addressed separately if required.