

HERITAGE IMPACT ASSESSMENT

FOR

REPLACEMENT OF MECHANICAL PLANT

HATTON GALLERY

CASTLE CORNET

ST PETER PORT

FOR

STATES OF GUERNSEY

COMMITTEE FOR EDUCATION, SPORT AND CULTURE

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1.0 Introduction

1.1 Background

The mechanical plant that services the Hatton Gallery has been out of service for several years. Some of the present uses and levels of occupation for certain functions held at the venue would not be held in appropriate environmental conditions even if this plant was operational.

The States of Guernsey Committee for Education, Sport and Culture is promoting a project that replaces the plant with an installation that supports the use of the space by ensuring that the internal environment is suitable for proposed uses.

This Heritage Impact Statement has been prepared to assess the impact of the proposed works on the significance of the Protected Building.

1.2 Scope of the Assessment

The scope of this outline assessment is to assess the effect of replacing the existing unserviceable mechanical systems with a new installation that provides the required internal environment to the Hatton Gallery on its significance and record the benefits achieved and any harm caused.

1.3 Address of the Site

Maritime Museum, Castle Cornet, St Peter Port, Guernsey.

1.4 Circumstances of the Assessment

For the purpose of this assessment the seaward elevation of the building is deemed to face East. This assessment should be read in conjunction with Property Services Drawings 6730 / 100 to 105 which graphically represent the proposed solution.

1.5 Limitations of the Assessment

This assessment is based on the understanding and assessment of significance set out in the Maritime Museum Statement of Significance (Glencross, 2019)

2.0 Legislation, Island Development Plan and Conservation Policy

The relevant part of the legislation considered relevant is clause 19.6.7 of the Island Development Plan.

This is supported by the advice note; "Principles for Sustaining Guernsey's Historic Environment (States of Guernsey, 2016)".

3.0 Understanding the Asset

A Statement of Significance has been prepared for the property. In summary the special interest of the property relates to its architectural, historic and aesthetic value.

The elements of the property which demonstrate this significance are:

- The external appearance
- The positioning of the windows and doors that relate to the original layout
- The roof structure
- The remaining internal walls

4.0 Proposed Works

4.1 Objectives of the Works

The objective of the project are to provide within the Hatton Gallery and an adjoining area on the first floor an internal environment controlled between specified ventilation, humidity and temperature limits before the scheduled date that the maritime museum is to re-open following other refurbishment works.

The following parameters have been specified by the Museum Service:

Temperature range	15-21°C
Humidity range	40-60% RH
Occupancy	120 persons.
Ventilation rate	8l/s fresh air

4.2 Description of the Works

The proposed works will involve removing the existing unserviceable plant. Installing new equipment capable of delivering the internal conditions specified above and distributing the output of this plant to provide a consistent internal environment.

5.0 Impact Assessment

5.1. Proposal

The proposed solution is described below, but in essence the only impact on the setting or appearance of the existing, original fabric is to remove dormer cheeks to the sides of the dormers common to the Hatton Gallery plant deck area and replace these with new painted timber louvres.

5.2 Plant room

The constraint of the size of the existing plant room leads the proposal to select plant that fits within the existing space.

This plant will provide heating and cooling using heat pump technology.

Reinstating the original louvres will restore the visual appearance of the east and west elevations.

5.3 Fresh air

The specified occupancy level is now 90 more than the original system was sized for in 1987. This requires a larger amount of fresh air to be brought into the system. However the existing louvre is not large enough to supply the required amount of air without increasing supply velocities to about 5.1m/s compared with the accepted/trusted 3m/s. Speeds in excess of this cause noise in the system and induce a risk of short circuiting.

It is proposed that the cheeks on the side of each of the two plant room dormers are fitted with additional louvres. These would be in hardwood and painted "slate" grey to minimise the visual impact. The supply air velocity would be reduced to about 3.7m/s.

Additionally in order to deal with the additional air volumes, compared with the original requirement, a revised arrangement of air flow will be needed. Instead of separating the supply and extract duct work for the air handling unit and heat pump it is proposed to draw air in on the west side and discharge on the east. This means that it is necessary to use the plant room as a plenum with external air circulating in the space.

To reduce the risk of condensation in the plant room it is proposed that the floor and southern (timber stud) wall of the room are insulated to improve the thermal performance. This can be achieved by removing the existing timber facings, adding insulation and replacing the facings.

5.4 Distributed air

The proposal is to remove the high level supply ductwork in the Hatton Gallery and install new distribution ductwork that runs at high level to drop behind the existing timber wall used to carry the large pieces of art on the northern end.

An opening will be formed in this stud wall and two displacement diffusers will be installed to discharge air at low level.

Extraction will continue to be achieved using the existing high level duct.

Duct work will otherwise be contained within the plant room.

6.0 Summary

In summary the objective to improve the internal environmental conditions in the Hatton Gallery can be achieved by re-using the existing plant room.

The distribution of air can be achieved without any alterations to the original internal fabric on the building.

The need for additional fresh air and the constraint of the existing penetrations through the roof mean that the floor and walls of the plantroom are to be upgraded to an improved thermal performance. The elements are not the original fabric but additions created in the 1980s when the building was converted into a museum or in 2008 in the case of the lining wall in the Hatton Gallery.

This same requirement for additional fresh air creates a need to supplement the openings provided by the reinstatement of louvres in the dormer windows. The proposal seeks to replace the tile hung dormer cheeks with new painted hardwood louvres to the dormer on each side of the plantroom rather than to change the proportion of the dormers.

7.0 References

1. States of Guernsey, (2016) *Principles for Sustaining Guernsey's Historic Environment*, States of Guernsey, Guernsey.
2. Glencross, H., (2019) *Statement of Significance – Married Quarters Building, Castle Cornet*, States of Guernsey, Guernsey.