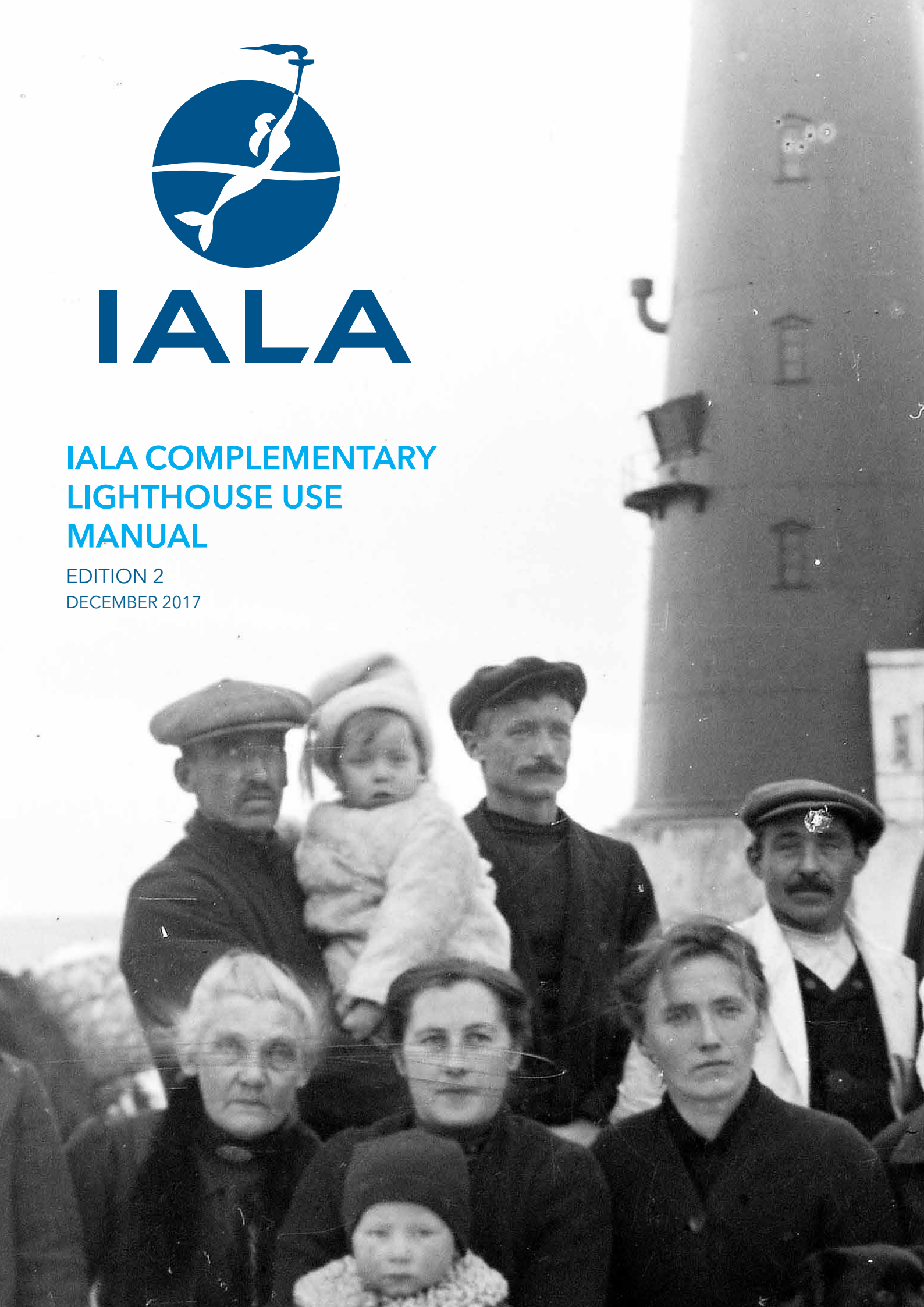
IALA

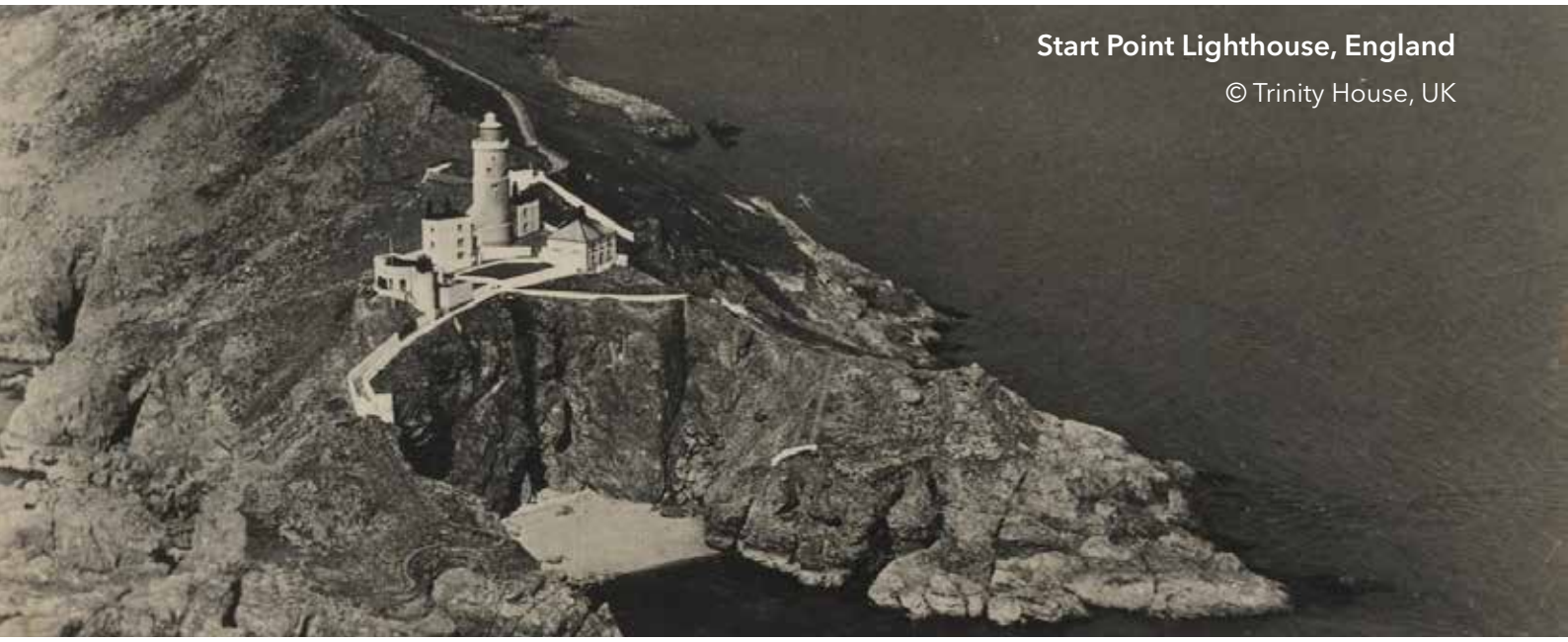
IALA COMPLEMENTARY LIGHTHOUSE USE MANUAL

EDITION 2

DECEMBER 2017



THIS MANUAL PROVIDES AN EASILY-UNDERSTOOD SET OF BASIC PRINCIPLES AND CHECKLISTS THAT WILL HELP AN AUTHORITY CONSIDER, DESIGN, PLAN AND MANAGE A NUMBER OF COMPLEMENTARY USES FOR THEIR HISTORICAL LIGHTHOUSE ESTATE



Start Point Lighthouse, England

DOCUMENT REVISIONS

Revisions to this IALA Document are to be noted in the table prior to the issue of a revised document.

Date	Page / Section Revised	Requirement for Revision
May 2006	First issue	
December 2017	Entire document	Updated to reflect trends and experiences

1.0

INTRODUCTION

This manual provides an easily-understood set of basic principles and checklists that will help an authority consider, design, plan and manage a number of complementary uses for their historical lighthouse estate.

Despite differing significantly across a multitude of climates, topographies and national infrastructure types, historical lighthouses—if properly conserved and managed—offer their respective authorities a number of navigational, financial and reputational benefits and secure a legacy for the interest of all.

This manual does not cover civil engineering practices or material conservation (such as granite repair or managing corrosion of ferrous fittings), but rather looks at how lighthouse authorities can leverage operational, commercial or reputational benefits from the historical and cultural significance of a property.

Conserving an historical lighthouse or related structure affords those authorities the freedom to explore a lighthouse structure's complementary or alternative uses as a platform for future aids to navigation, as an opportunity to exploit spare capacity commercially or as a platform for raising that authority's profile through education, awareness raising or community engagement.

Front cover: Feistein Lighthouse 1915, Norway

1.1

FOREWORD

Since 1957 IALA has been responsible for bringing together the lighthouse authorities of the world to not only pool their expertise for the benefit of the mariner but also to offer them the opportunity to exchange and compare their experiences and achievements. Recently, a Task Group working under the Engineering and Sustainability Committee has been investigating means by which lighthouse authorities with any number of historical lighthouse sites can find ways to inject new life into old properties.

Many of these lighthouse authorities are today in possession of some of the world's most unique properties. If properly conserved and managed, these lighthouses—despite differing significantly across a multitude of climates, topographies and national infrastructure types—offer their respective authorities a number of navigational, financial and reputational benefits and secure a legacy for the interest of all.

The primary function of a lighthouse will always be the aid to navigation provided for the safe transit of the mariner, but this manual will help many authorities explore their lighthouses' complementary uses as a platform for future aids to navigation, as an opportunity to utilise spare capacity commercially or as a platform for raising that authority's profile through education, awareness raising or community engagement.

I applaud the work of the Engineering and Sustainability Committee in support of the above and look forward to seeing what further complementary uses IALA members can develop.

Francis Zachariae
Secretary-General

“THESE LIGHTHOUSES OFFER THEIR RESPECTIVE AUTHORITIES A NUMBER OF NAVIGATIONAL, FINANCIAL AND REPUTATIONAL BENEFITS AND SECURE A LEGACY FOR THE INTEREST OF ALL”

Swedish lighthouse keeper

CONTENTS

2.0

DEVELOPING A CONSERVATION PLAN

Historical lighthouses are a unique part of a nation's heritage and hold great significance to local and national communities. Because of the widespread automation of lighthouses and a general reduction in short range aids to navigation, many lighthouse authorities find themselves with surplus property and the requirement (or the opportunity) to find alternative uses for that spare capacity, driven by a variety of reasons such as commercial or reputational benefit or an educational or conservational mandate.

A significant recommendation of the Preservation of Historic Lighthouses by Alternative Use Workshop (Norway, May 2000) was that lighthouse authorities have a duty to protect their historical lighthouses and by way of alternative uses, funds can be raised to finance their conservation; alternative use should be adapted to the lighthouse and not the other way round.

The cultural heritage of lighthouses extends beyond the architectural value of the buildings out to maritime culture and history, including shipping trading patterns, navigational safety and wrecks; this needs to be interpreted and evidence documented for the benefit of future generations.

Recording present traditions and changes is also important, as they will become part of the cultural heritage for future generations.

The following chapter considers the various stages of the preparation of a conservation plan. It is not an exhaustive list but coupled with the information contained in the complete manual, provides a good starting point.

This chapter is not only applicable to the preparation of a conservation plan but can be equally applied to the preparation of any conservation plan.

2.1. THE PLANNING PROCESS

This section will help organisations begin the planning process, looking at aims, outcomes and justifications for your complementary use.

2.1.1.

DEVELOPING A VISION

Begin with a clear idea that has well-identified goals and rational justifications. Objectives may include (but are not limited to) the following:

- Commercial:
  - Visitor centre, holiday cottages, café, restaurant;
- Reputational:
  - Enable access and public enjoyment;
  - Reflect cultural values;
  - Raise public and cultural awareness and enhance education;
- Operational:
  - Encourage economic sustainability within the lighthouse estate;
  - Develop an alternative revenue source;
  - Building conditioning;
- Conservational:
  - Protect lighthouse heritage and conserve the surrounding landscape environment;
  - Provide a repository for historical lighthouse equipment.

2.1.2.

ENSURING THE RIGHT ENVIRONMENT

- Consider potential reactions to your project, from international to local community level;
- Examine the scope and limitations of the existing legal and cultural frameworks and if necessary, consider any requirements for new legislation to provide flexibility.
- Assess whether any development will be economically sustainable in the longer term;
- Gain co-operation and support of relevant environmental, conservational and local bodies.

2.1.3.

EVALUATING THE CURRENT POSITION

- Determine what value the state places on its maritime, technical and industrial heritage;
- What are your organisation's future plans with respect to its lighthouse properties and are they sustainable?
- Who are the organisation's stakeholders? (see Annex A for examples)
  - o Political: international, national, regional and local community;
  - o Social: public interest, heritage and environmental, special interests, employees, contractors and suppliers;
  - o Economic: taxpayers or service payers, fund managers/government departments, tourism bodies, local businesses.
- What are the stakeholders' interests?
  - o Safe and expeditious navigation;
  - o Provision of a cost effective aids to navigation service;
  - o Job satisfaction: new challenges for staff;
  - o Heritage and environmental conservation;
  - o Economic regeneration of local communities;
  - o Education and public enjoyment.
- Are there any other external influences?
- Identify potential partnerships (including the need for external expertise), and the benefits.
- Identify the strengths, weaknesses, opportunities and threats (SWOT analysis).
- Purposes of public access:
  - o Interpret the lighthouse/maritime cultural heritage;
  - o Enable the conservation of buildings and objects;
  - o Educate, inform and raise awareness about selected subjects/topics;
  - o Provide supplementary income for conservation work.

2.1.4.

DEVELOPING A HIGH LEVEL STRATEGY

- Where does your organisation want to be in three to five years' time and beyond? Reference your organisation's relevant corporate goals and strategies;
- Evaluate the benefits of retaining ownership of historic lighthouses for alternative use over the longer-term, against any immediate gain from disposing of some or all of the property;
- Identify any scope for flexibility: is there a minimum requirement?
- Assess the impact on your organisation's resources and the possibility of co-operation with other organisations.
- How will each of the stakeholders react?
- What are the options for funding?
- Draft a strategy to achieve the goals based on the strengths of your organisation.

2.1.5.

PRODUCING A CONSERVATION PLAN FOR HISTORICAL LIGHTHOUSES

- Evaluate the lighthouse estate:
  - o Initial desktop evaluation and data gathering;
  - o Detailed profiling of properties;
  - o Ownership / rights of way;
  - o Buildings / environmental designations;
  - o Historical significance;
  - o Operational and non-operational areas.
- Develop criteria for classification within a conservation plan for each lighthouse in consultation with heritage bodies and other relevant stakeholders as appropriate.
  - o Navigational significance; part of a tower or current aid to navigation:
  - o Maritime cultural history;
  - o Present and previous use; operational aid to navigation?

- Is the lighthouse station a single entity including buildings, equipment etc.?
- Artefacts, antennae, gardens etc.;
- Community relationship: social history, way of life;
- Architectural significance and type of construction;
- Authenticity;
- Accessibility;
- Vulnerability;
- How representative is it of the country's lighthouse heritage;
- Function (e.g. coastal, fairway, harbour), use, materials and style;
- International/regional importance;
- Symbol of technological advancement;
- Physical condition;
- Landscape setting;
- Flora and fauna, marine wildlife;
- Geology/ecology.

Please note that this is not an exhaustive list.

- Record the significance and vulnerability of the lighthouse stations to be preserved:
  - Survey the sites;
  - Develop conservation statements;
  - Agree conservation policies: keep the estate intact; avoid part disposals; examine alternative use; enable public access and enjoyment;
  - Review heritage and environmental regulations.
- Identify whether an environmental impact assessment and clean-up operation may be necessary;
- Assess priorities in terms of heritage significance and the potential for public access to a given site.

2.1.6.

PRODUCING A MANAGEMENT PLAN FOR THE CONSERVATION OF HISTORICAL LIGHTHOUSES

- Decide how to maintain the significance of the station and resolve any conflicts;
- Incorporate alternatives for surplus properties where applicable:
  - Balance opportunities against risks and liabilities;
  - Identify opportunities for leisure, education and partnerships.
- Identify options for ongoing roles (paid or voluntary) for personnel previously involved, such as lighthouse keepers, attendants, local boat operators and so on:
  - Lighthouse tours;
  - Management of other aids to navigation in the area;
  - Wardens for parks or bird sanctuaries;
  - Weather observation.
- Clarify responsibilities (including obligations in respect of registered or listed buildings), for example:
  - Lighthouse Authorities as owners are responsible for conserving the buildings and/or administering the plan;
  - Heritage bodies set down the conservation framework and advise in regards to appropriate standards.
- Liaise with organisations that are potentially impacted to seek formal or informal approval of your management framework to manage local stakeholder relationships.
- Consider the following aspects and they can be incorporated into a plan that allows for long term feasibility:
  - Business plan for commercial revenue;
  - Legal framework;
  - Analysis of opportunities and threats;
  - Financial plan (including grant applications);
  - Marketing plan;
  - Partnerships;
  - Organisational structure;
  - Public finance, non-commercial;
  - Controlled/outright disposal;
  - Lease surplus estate to responsible

“THE CULTURAL HERITAGE OF LIGHTHOUSES EXTENDS BEYOND THE ARCHITECTURAL VALUE OF THE BUILDINGS OUT TO MARITIME CULTURE AND HISTORY, INCLUDING SHIPPING TRADING PATTERNS, NAVIGATIONAL SAFETY AND WRECKS”

The landing at Eddystone Lighthouse, Australia

bodies;

- o Reserve rights of access;
- o Ensure property is maintained and conserved;
- o Grant aided only;
- o Enable public access and enjoyment;
- o Grant monies and other income used for conservation;
- o Confirm any conditions attached to grant;
- o Temporary closure;
- o Temporary solution;
- o Minimal maintenance to prevent deterioration;
- o Sell or lease to responsible body;
- o Keep station intact as a single entity if possible with responsibilities written into the deeds.

- Produce timetable with critical milestones.

2.2. IMPLEMENTATION OF MANAGEMENT PLAN

This section will help organisations identify some of the issues they may face implementing their plan and how to mitigate the risk in advance.

2.2.1.

IDENTIFYING THE POSSIBILITIES AND LIMITATIONS OF THE STATION

- Dates and length of the period(s) for public/ commercial operations and access;
- Weekly/daily opening periods, identifying potential conflicts with local residents/ adjacent occupiers;
- Size of accommodation;
- Need for interpretive displays;
- Power requirements and sources;
- Access: car parking, boat landings, foot and air;
- Toilets, first aid and rest room facilities;
- Security and fire prevention;
- Sale of merchandise;
- Resources available for guided tours;
- Training requirements for personnel;
- Vulnerability to damage of the buildings and the environment;
- Visitor potential (market survey);
- Determine visitor flow plan for the premises.

2.2.2.

RISK ASSESSMENT

- Appropriate resources to accommodate anticipated number of visitors;
- Health and safety;
- Environmental impact;
- Need for directional and cautionary notices;
- Assess legal liability;
- Assess insurance requirements.

2.2.3.

LEGAL AGREEMENTS WITH PARTNERS

- Transfer of liabilities;
- Reserve rights of access;
- Ensure non-interference with aids to navigation functions;
- Permit public access for education and enjoyment;
- Decide whether it is a profit or non-profit venture;
- Provide for the apportionment of revenue income and costs;
- Provide for agreement of visitor entrance charges;
- Impose an obligation to comply with any conservation requirements;
- Transfer responsibility to local level for complying with legislation in respect of catering, cinema (video films), disability discrimination and social inclusion;
- Clarify intellectual property (trademarks, copyright etc.) ownership;
- Specify accounting arrangements including

ticketing;
- Reversion clause.

2.2.4.

PUBLICITY AND OUTREACH MATERIAL

- Identify target audiences; for instance, holidaymakers, school groups;
- Produce marketing plan: identifying examples from similar ventures will act as a suitable starting point;
- Design and distribute marketing leaflets, posters and adverts, identifying appropriate local and regional audiences;
- Provide contextual brochure on history of the lighthouse and present day operations;
- Arrange press/media coverage;

2.2.5.

SITE INTERPRETATION AND EDUCATIONAL MATERIAL

- Identify target audiences: for example, holidaymakers and school groups;
- Design displays, exhibitions and information tailored for your target audiences:
  - o Permanent and/or temporary exhibits;
  - o Text and graphic panels mounted to wall or free-standing;
  - o Audio visual interpretation, such as wall-mounted videos or handheld tour devices;
  - o Interactive units (mechanical): pull-out drawers, pin boards;
  - o Interactive units (digital): touch screen displays.
  - o It is worth noting that where budget and project goals allow, professional advice and work should be sought when looking to present educational and interpretive material to targeted groups.
- Education and support materials: for example, a specially-commissioned education pack based on national curriculum targets;
- Identify specialist or local academic interest:
  - o Databases, enquiries and publications;
  - o Scholarships and research;
  - o Special interest and corporate hospitality.

2.2.6.

TRANSPORTATION

- Consider bus routes or special access arrangements;
- Arrange access by boat to island/offshore stations.

2.3. MEASUREMENT OF SUCCESS

This section will help organisations identify and set up performance-measuring metrics so that the venture can be assessed and adapt accordingly for success and sustainability.

2.3.1.

MONITORING AND REVIEW

- Define measurable benchmarks for measuring success;
- Cite successful precedents of alternative use;
- Periodically review strategy, plans and procedures and adapt to the changing environment.

2.3.2.

HOW YOUR ORGANISATION MAY MEASURE SUCCESS

- Lighthouse authorities:
  - o Fully or partially self-supporting;
  - o Revenue generation (for example: re-investment in conservation);
  - o Reduction in maintenance costs;
  - o Increase in number of stations actively involved in alternative use;
  - o Increase (or stabilise) number of visitors: access and enjoyment factors;

- Increased political awareness;
- Formation of strategic alliances including inter-departmental service level agreements - through partnerships, which have helped to achieve conservation goals;
- Co-operation among military and civil administrations regarding the 'common maritime inheritance'.

- Conservation authorities:
  - Met conservation standards and managed visitor access to contain numbers where appropriate (each country will have its own conservation standards);
  - Created a shared understanding of cultural heritage values measured through special visitor surveys and media response.
- Local community:
  - Job creation and economic regeneration;
  - Strengthened community spirit and increased local identity;
  - Raise awareness and generate interest from wider regions;
  - Increased understanding following a sharing of values among the community;
  - Number of schools visits increased to prove the attraction as a valuable educational resource;
  - Greater awareness of cultural and environmental responsibilities - children can influence society and change a generation's attitudes.
- Tourism:
  - Job creation and economic regeneration;
  - Improved variety and quality of visitor attractions in the area;
  - Extension of visitor season.

2.4. ANNEX A: STAKEHOLDERS

Bodies with a potential interest in historical lighthouses.

International

- IALA;
- International Council on Monuments and Sites (ICOMOS) advise UNESCO on cultural World Heritage sites;
- The International Committee on the Industrial Heritage (TICCIH) advise ICOMOS;
- Lobby groups: Friends of the Earth / Greenpeace / World Wildlife Fund;
- Tourism networks that reach across national boundaries;
- Lighthouse Societies throughout the world;
- International Tourism Association.

National

- Government departments/ agencies;
- Aids to navigation authority;
- Environmental management department;
- Cultural heritage department;
- Maritime transport department;
- Ministries of tourism/ trade/ economic development;
- Ports department;
- Fisheries department;
- National trail networks;
- Employees, contractors and suppliers;
- Lifesaving organisations;
- Housing associations;
- Meteorological organisations.

Provincial, State, District

- Ports and harbours;
- User groups: for example leisure, fishing, commercial shipowners, pilots;
- Regional trail networks;
- Local government/ councils: tourism/ heritage/ museum services;
- Local government: planning authority (often has heritage responsibilities).

Municipalities

- Ports and harbours;
- User groups;
- Coastal cultural groups;
- Diving clubs;
- Conservation interest groups ("friends" and historical societies);
- Environmental groups;
- Local government/ councils: tourism/ heritage/ museum service;
- Local government: planning authority (often has heritage responsibilities);
- Local trusts and community groups;
- Bodies involved in particular heritage conservation projects.

"MANY LIGHTHOUSE AUTHORITIES FIND THEMSELVES WITH SURPLUS PROPERTY AND THE REQUIREMENT (OR THE OPPORTUNITY) TO FIND... COMMERCIAL OR REPUTATIONAL BENEFIT OR AN EDUCATIONAL OR CONSERVATIONAL MANDATE"

Porto Pí Museum, Spain

2.5. ANNEX B: CHECKLIST

This list identifies the various stages in preparation of a national conservation plan. It provides a record of those that are applicable to the project and can be used to plot the progress through the various stages.

Items to be considered	Applicable? Yes/No	Comment
The planning process		
Develop a vision		
Ensure the right environment		
Evaluate the current position		
Develop a high level strategy		
Produce a conservation plan		
Produce a management plan		
Implement management plan		
Identify the possibilities and limitations		
Carry out risk assessment		
Complete legal agreements with partners		
Produce publicity and outreach material		
Produce site interpretation and educational material		
Transportation		
Measure success		
Monitor and review		
Decide how your organisation may measure success		

3.0

THE LEGAL ISSUES OF COMPLEMENTARY USE

Complementary use may provide a major opportunity to help ensure the conservation of historical lighthouses. However, the opportunity needs to be balanced against the risk, taking into account legal and financial considerations. This includes checking that the lighthouse authority or other body has the necessary legal powers to undertake complementary use activities alongside its normal activities for the provision of marine aids to navigation. The relevant legal issues generally fall into one of four distinct areas:

- Constitutional: the organisation's legal status and powers;
- Contractual: regarding ownership, title and access rights in respect of the properties;
- Duty of care to people, property and the environment;
- Compliance with public laws and codes of practice, including environmental and heritage designations and planning consents.

These are dealt with in sequence in the following sections to show how the risks can be managed once a property has been identified as having potential for complementary use. However, it is important to keep in mind the wider aims of the lighthouse authority or heritage body, which may be to:

- Conserve the properties (and associated equipment) as:
  - o a platform for the effective operation of aids to navigation requirements;
  - o historical structures of national or local importance;
  - o a natural and distinct feature of the landscape environment.
- Reduce costs by adopting a wider scheme for effective management of the station, including measures for the transfer of certain risks and liabilities and the development of suitable schemes for revenue generation;
- Enable safe access for public enjoyment and education.

To a greater or lesser extent, an understanding of the legal issues is required to enable appropriate safeguards to be established for the achievement of these aims. The purpose of this chapter is to provide outline guidance to the main areas of risk, responsibility and liability and to the steps that can help reduce exposure to liabilities.

NB. Professional advice should be sought to validate any assumptions made.

3.1. CLARIFY POWERS, SITE OWNERSHIP AND RIGHTS OF ACCESS

This section will help organisations work with various stakeholders for the smooth set up and operation of their venture.

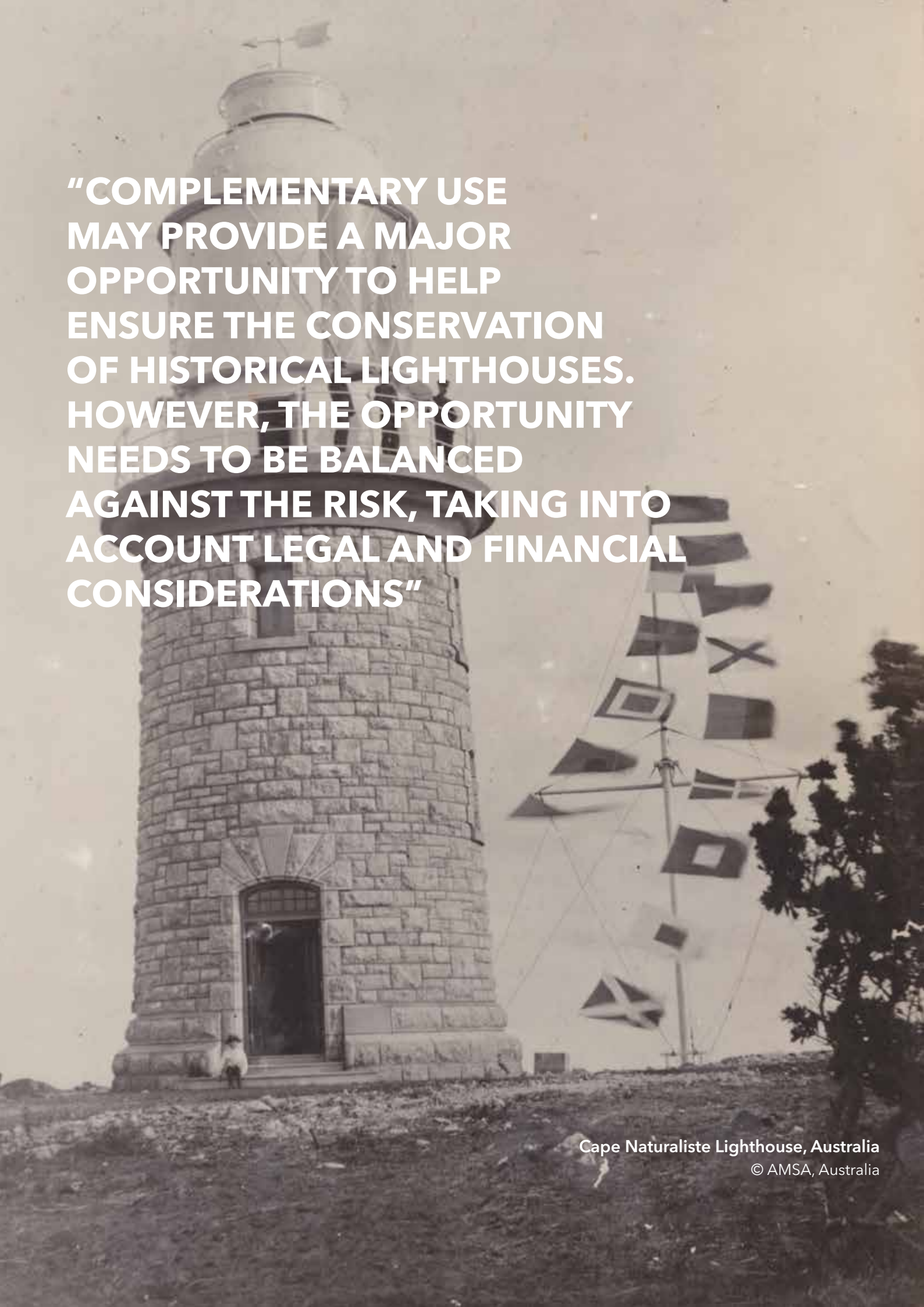
3.1.1.

ORGANISATIONAL POWERS, RIGHTS AND DUTIES

Any organisation thinking about implementing schemes for the complementary use of historical lighthouses should consider carefully their foundation and purpose, scope of responsibility and the relevant legal jurisdiction in which they operate. The functions of a public body may be quite limited and it may face serious consequences if found acting outside its powers. However, partnerships between public departments (such as lighthouse authorities and heritage bodies) may produce a sound legal basis on which to proceed without the risk of being challenged.

Most public organisations have a constitution (usually laid down in the public law or governmental policy of the relevant state) defining their purpose and how their activities and resources will be financed. International charters or conventions may also have a bearing on what activities should be carried out by the relevant public departments of a signatory state. Other sources clarifying the scope of activity of the relevant authority may include, for example:

- Statements of strategy, policy, procedure



“COMPLEMENTARY USE MAY PROVIDE A MAJOR OPPORTUNITY TO HELP ENSURE THE CONSERVATION OF HISTORICAL LIGHTHOUSES. HOWEVER, THE OPPORTUNITY NEEDS TO BE BALANCED AGAINST THE RISK, TAKING INTO ACCOUNT LEGAL AND FINANCIAL CONSIDERATIONS”

Cape Naturaliste Lighthouse, Australia

or good practice;

- Custom and practice over time;
- Common law precedents;
- Service level agreements.

Even if an organisation has the necessary powers, a lack of resources (human, financial) may limit its capability to deliver long term solutions. Such factors should always be taken into account in deciding the best course of action.

- Is alternative use within the scope of the lighthouse authority's powers
- AND is it something they can do alone?
- OR through a third party – by disposal or leasing?
- OR by co-operation between government departments?

NB. International charters or conventions on relevant heritage issues place clear obligations on signatory states e.g. Venice Charter 1964, European Charter of the Architectural Heritage 1975, Declaration of ICOMOS – Stockholm 1998, International Cultural Tourism Charter, ICOMOS, Mexico 1999.

3.1.2.

SITE OWNERSHIP AND RIGHTS OF ACCESS

Establish the ownership of the lighthouse property and clarify existing legal obligations associated with ownership such as:

- rights of access including those acquired by use over time;
- restrictive covenants;
- rights of re-purchase in favour of any former owner;
- existing use by third parties e.g. leases, licences, access for services.

3.1.3.

RIGHTS OF THIRD PARTIES

Check the ownership of adjoining land and clarify any rights of shared access. Ensure that neighbouring landowners will not be adversely affected by any alternative use of the lighthouse property. Consult with all those who may have an interest in the property or its future development as early as possible in the process.

Are there any local residents likely to object to wider use of the lighthouse property, particularly if it affects their outlook or privacy?

3.2. IDENTIFY LEGAL RESTRICTIONS THAT IMPACT ON COMPLEMENTARY USE

This section will help organisations identify and navigate the various legal issues that may arise in the course of setting up complementary uses at a lighthouse.

3.2.1.

PUBLIC LAWS

A lighthouse authority's powers, duties and rights may be modified by the general public laws of the relevant country, province or municipality:

- Health and safety (see Section 5: Making a Lighthouse Visit Safer);
- Regulations e.g. planning (including heritage) and building, disability discrimination;
- Environmental duties e.g. pollution cleansing, noise reduction, waste disposal and discharge;
- Consents e.g. catering, retailing and cinema.

The effect of these public laws should be established when developing an outline scheme for complementary use. The scheme should be modified as appropriate, and the necessary consents applied for before commencing implementation. Consultation with heritage bodies and planning consents for changes to historical lighthouses are especially important to ensure that the scheme is adapted to the lighthouse rather than being driven solely by commercial considerations. Particular attention should be given to the possible constraints listed in the paragraphs below.

3.2.1.1. Planning regulations

Planning and building regulations may apply to schemes for complementary use of lighthouse stations in the following areas:

- Alterations to, or change of use of, the property;
- Transport infrastructure including highways, footpaths and parking;
- Building construction standards.

Failure to obtain the necessary consents could lead to fines or enforcement orders and consequent interruption or even termination of the venture.

3.2.1.2. Heritage conservation

Lighthouse authorities have duties in respect of lighthouses that are included on registers of buildings listed as having historical or architectural significance. Be aware that similar rules could apply to buildings adjacent to the lighthouse.

If an application for a heritage grant is being considered then check the conditions laid down by the authorities offering grants, as there may be a liability to pay back a significant proportion of the money granted if the venture fails or the property is disposed of in the future.

3.2.1.3. Safety

Apart from general health and safety requirements the remoteness of the station from the nearest community and public services may be a major factor in deciding whether to proceed with alternative use. For example, the provision of hot and cold running water, toilets and related drainage and first aid facilities might be a legal requirement for any visitor attraction.

3.2.1.4. Environmental

International concerns about the environment have led to provisions in the public laws of many countries. As a result, organisations, landowners and others have a duty to adopt a cleaner and more responsible approach and take remedial action for any previous harm done. Lighthouse authorities, in carrying out their normal operations and any alternative use, may be forced to consider:

- Noise reduction from fog signals and generators;
- Avoidance or clean-up of substance pollution;
- Removal of hazardous materials such as asbestos;
- Reductions in gas emissions from generators;
- Use of alternative energy sources;
- Provision or improvement of foul drainage treatment.

In addition, many lighthouses are within protected areas designated as national parks, sites of special scientific interest, heritage coast, special areas of conservation or otherwise. These may impose restrictions on the use of buildings and access to the site, due to potential damage to flora, fauna and wildlife.

3.2.1.5. National security

Laws or policies on national security may restrict any use of, or access to, the station to activities compatible with national security requirements.

3.2.1.6. Intellectual property

Trademarks, copyright and patents can be valuable property. A lighthouse authority needs to protect any such property that it can rightfully claim ownership to. Equally, measures need to be adopted to ensure that the rights of any other party are not infringed when using images, brands, printed works, computer software and designs.

3.2.2. PRIVATE LEGAL RELATIONSHIPS

Careful consideration will need to be given to the effect on any existing agreements permitting multi-use or occupation of the station, such as weather reporting, coastal lookouts or bird watching. In addition, third party rights of access to services for repair and maintenance will need to be considered.

“MANY LIGHTHOUSES ARE WITHIN PROTECTED AREAS DESIGNATED AS NATIONAL PARKS, SITES OF SPECIAL SCIENTIFIC INTEREST, HERITAGE COAST, SPECIAL AREAS OF CONSERVATION OR OTHERWISE”

Kõpu Lighthouse, Estonia

3.2.3.

INTERFERENCE WITH AIDS TO NAVIGATION

Any wider use of the station may be limited to some extent by the need to prevent any interference to the operation of the aids to navigation such as obstruction of the light or interference with radio signals. Careful thought also needs to be given to the possible impact on normal station activities such as maintenance and helicopter operations.

3.3. CARRY OUT A JOINT RISK ASSESSMENT

This section will help organisations work with partners and stakeholders to identify and mitigate any risks involved with the project.

3.3.1.

RISK ASSESSMENT

A joint risk assessment with any partners in the venture will help to identify the key risks and enable proper controls to be established. This should include an evaluation of the skills, experience and level of investment that each of the parties will bring to the venture and the overall suitability of each of the partners for the venture.

For property disposals or major works a more complex environmental assessment may be required with solutions to remedy any problems identified. This is likely to involve consultation with all the relevant stakeholders.

An example of a simple risk assessment procedure is at Annex B.

3.3.2.

LIABILITIES

3.3.2.1. Criminal

Criminal liability may result in a fine for an organisation, or even a custodial sentence for an individual belonging to the organisation, if found guilty of an offence such as inadequate health and safety standards or environmental pollution.

Consider the consequences of failing to protect visitors or causing damage to or loss of property.

3.3.2.2. Civil

The civil courts may award damages for any organisation or person found to have failed in their duty of care to people or property or for copyright infringement. This could mean a large financial and reputational loss for one or more of the venture partners.

3.3.3.

OPPORTUNITIES AND THREATS

Ultimately the venture partners will need to balance the opportunity against the potential liabilities and how effectively the risks can be managed.

3.4. DEVELOP AN OPERATING FRAMEWORK

This section will help organisations develop robust legal documentation necessary for the smooth operation of their venture.

3.4.1.

NON-LEGAL DOCUMENTARY SYSTEMS

The production of relevant policies, procedures and work instructions will be advisable to provide a suitable operating framework. This includes details about the ownership of the property and the key factors that will have an impact on complementary use.

3.4.2.

PRODUCE LEGAL AGREEMENTS

Identify the parties, clarify each of their roles and set out the main heads of agreement. Then decide what types of agreements are needed:

- lease (including rights of access);
- licence;

- franchise;
- retailing.

The following list contains some pointers to forming a workable agreement:

- Set out the main purpose of the agreement and its duration;
- Identify the parties and clarify their roles, responsibilities, liabilities and duties;
- Reserve rights of access for maintenance of aids to navigation, if appropriate;
- Manage and control visitor access including pricing policy and numbers;
- Clarify financial provisions and accounting responsibilities;
- Protect intellectual property;
- Protect the interests of other users of the site;
- Limit the disruption to adjoining landowners;
- Establish processes for supervising the scheme with contact names;
- Establish the process for dealing with disputes.

Make sure that the final written agreement covers all the main areas and replaces any previous verbal or written undertakings, otherwise misunderstandings and disputes may arise at a later date.

3.5. MANAGE RISKS AND LIMIT LIABILITY

This section will help organisations identify and set up safeguards to minimise risk to the venture.

3.5.1.

RISK MANAGEMENT

Adopting the principles of risk management will help to safeguard the lighthouse authority and venture partners from exposure to liabilities and the consequential costs:

- risk assessment;
- loss control;
- insurance and self-insurance;
- contractual indemnities;
- people training and development;
- professional advice where appropriate.

3.5.2.

SHARING THE RISK

Having identified the major risks associated with the scheme, take steps to minimise exposure to potential liabilities. As a general rule the risks should be shared among the partners in proportion to their roles and responsibilities and their share in the proceeds from the venture.

3.5.3.

STANDARDS

Apply recognised standards and good practice to the venture such as quality assurance, health and safety. Recruit people with the right skills and experience to operate the venture and ensure ongoing staff development.

3.5.4.

RISK TRANSFER MEASURES

Negotiate contractual indemnities backed-up by commercial insurance cover where appropriate to protect the lighthouse authority. Maintain insurances at the correct level.

3.5.5.

COMMUNICATION

Good communication among named contacts representing each of the parties can significantly reduce risk and help the venture to run smoothly and minimise the input of human resources by the lighthouse authority.

3.6. MONITOR, REVIEW AND AMEND AS REQUIRED

This section will help organisations review and adapt their venture for the best possible success.

3.6.1.

SITE INSPECTIONS

Undertake periodic site inspections jointly with the partners, each represented by competent personnel, to:

- Ensure protection of the aids to navigation equipment;
- Monitor safety measures;
- Secure environmental management;
- Discuss and resolve any problem areas;
- Check compliance with heritage-related laws, standards and other requirements;
- Agree on improvements to the scheme.

3.6.2.

VISITOR SURVEYS

Gain feedback from visitors as a useful measure of whether the scheme is providing value for money and operating efficiently.

3.6.3.

REVIEW THE PLAN

Review the business plan with the venture partners if circumstances have changed significantly. The venture may be influenced by external factors or a major re-structuring exercise within one or more of the organisations involved. Modify legal agreements as necessary.

3.6.4.

ENFORCE LEGAL AGREEMENTS

If a significant dispute arises that cannot be resolved by discussion among the parties, it may be necessary to resort to arbitration or the law to resolve the issue, particularly if the property is vulnerable to damage or decay.

3.6.5.

COMMUNICATION

Maintain consultation with local authorities and other stakeholders with an interest in the venture. Tourism bodies and the local press can be useful marketing agents.

3.7. ANNEX A: CHECKLIST

The following provides an aid to check that all points have been considered.

Items to be considered	Applicable? Yes/No	Comment
Clarify powers, site ownership and rights of access		
Clarify organisational powers, rights and duties		
Clarify site ownership and rights of access		
Clarify rights of third parties		
Identify legal restrictions		
Consider public laws		
Consider private legal relationships		
Evaluate interference with aids to navigation		
Carry out a joint risk assessment		
Identify the major risks		
Assess potential liabilities		
Assess opportunities and threats		
Develop an operating framework		
Produce policies and procedures		
Produce legal agreements		
Manage risks and limit liability		
Risk management		
Share the risk		
Adopt clear standards and best practice		
Consider risk transfer measures such as commercial insurance		
Maintain communication		
Monitor, review and amend as required		
Carry out site inspections		
Conduct visitor surveys		
Review the plan		
Enforce legal agreements		
Maintain communication		
Invite visitor feedback		
Review the business planning assumptions		
Enforce legal agreements		
Maintain communication		

3.8. ANNEX B: RISK ASSESSMENT REPORT

The following provides an aid to check that all points have been considered.

Risk Assessment Report			
Date			
Station			
Place			
[PHOTO OF STATION TO BE INSERTED]			
AUTHOR			
Assessment details:			
Assessor:			
Assessment date:		Review date:	
Initial risk level:		Residual risk:	
Job number:		Process:	
Process cat:			
Hazards & controls			
Hazard:			
Control measure:			
Hazard:			
Control measure:			
Hazard:			
Control measure:			
Hazard:			
Control measure:			
Hazard:			
Control measure:			
Signed:			
Date:			
Assessment details:			

"A JOINT RISK ASSESSMENT... SHOULD INCLUDE AN EVALUATION OF THE SKILLS, EXPERIENCE AND LEVEL OF INVESTMENT THAT EACH OF THE PARTIES WILL BRING TO THE VENTURE AND THE OVERALL SUITABILITY OF EACH OF THE PARTNERS FOR THE VENTURE"

Fruholmen Lighthouse 1946, Norway

3.9. ANNEX C: VISITOR FEEDBACK FORM

The following provides an aid to check that all points have been considered.

[Name of organisation conducting tour]

We hope you enjoyed your visit to our lighthouse visitor centre. We would be grateful if you could take a few moments to answer the following questions.

Lighthouse visited:			
Date:			
Party size:	Adults	Children	Pensioners

What was the main reason for your visit today?	**How did you learn about the lighthouse visitor centre?**	**How would you rate the performance of your tour guide?**
Lighthouse enthusiast	From a relative/friend	Poor
Interest in historical buildings	Advertising leaflet	Acceptable
Educational visit	Tourist Information Centre	Good
It was recommended	Resort guide	Very Good
Somewhere to take the children	Internet	
Weather	Local signage	**How would you rate your visit in terms of value for money?**
In the area	Other (please specify)	Poor
Other (please specify)		Acceptable
		Good
		Very Good

Comment (Please suggest how we could improve our lighthouse visitor centre)

4.0

DEVELOPING A BUSINESS PLAN

This chapter is included to assist those assessing the feasibility of opening a particular property to the public. It is assumed that there is a wish to maximise the number of visitors in order to maximise revenue and offset the initial expenditure of setting up the venture.

In some cases there may be a wish to limit the numbers of visitors in order to protect the lighthouse and the environment or reduce the level of interference to the wildlife.

4.1. PURPOSE

This section will help organisations define the founding principles of the project, which will provide clear direction and objectives for future decisions.

4.1.1.

SET POLICY

Make clear the reason for utilising the lighthouse for complementary uses, stating the organisation's policy on the subject. Ensure that all stakeholders have input and an opportunity to review and offer feedback (and approval where appropriate) on the final draft.

4.1.2.

REVENUE

Make clear where the income is going and why.

4.1.3.

SET AIMS AND OBJECTIVES

Clearly defined aims stated in measurable terms will be important to the development of the project and also to the ongoing evaluation of its success over time. An example of an aim could be 'to increase the number of visitors per annum to 20,000 by [year]'.

Note that aims are general statements specifying the overall goals, ends or intentions of a project or organisation; objectives are the individual stages that one must achieve on the way in order to reach their aims.

4.2. LOCATION AND ACCESS

This section will help organisations assess access requirements for the site and address any issues that may affect customers or operators getting to the site safely and smoothly.

4.2.1.

DOES THE SITE HAVE SUFFICIENT ROAD ACCESS?

The width and type of access road needs to be considered in relation to the type and size of vehicles that can use it. This will directly affect the number of persons reaching the site, particularly in regard to bus access.

Access and facilities for disabled persons must be considered and all reasonable measures should be taken.

4.2.2.

CAN ADEQUATE CAR PARKING BE PROVIDED?

Adequate car parking on site or very nearby is advisable. The parking site should be suitably close to the lighthouse with safe access on foot. A park and ride scheme could also be considered where appropriate.

The effect on local residents and landowners must be considered when setting up a venture that will increase traffic on local roads. Car parking can be a contentious subject, along with traffic congestion and a heavier use of the road network. Private roads need to be considered carefully due to the costs of their extra maintenance.

4.2.3.

DOES THE SITE HAVE FREE OR RESTRICTED ACCESS?

If the site has multiple purposes or multiple owners/leases, consider which parts of the site have restricted access. Such a situation may significantly restrict the free access of visitors to the site. Ecological or operational requirements may necessitate limited access to the public to avoid disruption, which will need to communicated sensitively to expectant visitors.

4.2.4.

WILL ANY SPECIAL SAFETY MEASURES BE REQUIRED TO IMPROVE ACCESS?

Will it be necessary to provide additional safety railings along access paths? Are the paths adequate or will they need surfacing and proper steps to be provided?

One cannot assume that existing standards used by service personnel would meet conditions appropriate for public access. Rough terrain, sheer drops and wind should all be taken into account.

4.2.5.

ARE ANY SPECIAL SAFETY MEASURES OR PRECAUTIONS REQUIRED WITHIN THE COMPOUND AREA?

Review the work needed in order to provide safe access and consider whether access to certain parts of the structure may have to be restricted.

Is the compound area adequately enclosed? Are there underground tank covers that need to be locked? Are there any access ladders that need to be 'locked off'?

Safety of the visitors must be paramount and will dictate the cost of setting up the areas accessible to the public and the numbers that can be accommodated. The public use of vertical ladders should be avoided.

4.2.6.

CAN ACCESS FOR DISABLED PERSONS BE PROVIDED?

It is likely that the answer will be no. However, it should be possible to provide some access to ground floor rooms with specific displays to allow them to appreciate areas that they cannot view.

4.2.7.

IS THE LIGHTHOUSE TOWER SUITABLE?

Tall towers could require excessive physical exertion to reach the lantern, and impose practical limits on the number of visitors.

4.2.8.

IS THE LIGHTHOUSE ACCESSIBLE BY BOAT?

If a station is only accessible by boat then it will be necessary to review how sheltered and safe the landing is for members of the public to use, as well as any footpaths between the landing stage and the lighthouse site. A Risk Assessment will need to be done.

The operating times of the boat service need to be considered.

4.2.9.

ARE THERE ANY SEASONAL INFLUENCES THAT WILL AFFECT ACCESS?

Adverse weather (particularly wind) may affect the access to the site making it very unpleasant or even dangerous, particularly above cliffs. Other conditions, such as bird breeding seasons, could require access by visitors to be restricted at certain times of the year.

4.3. PREDICTING THE NUMBER OF VISITORS

This section will help organisations gauge potential visitor numbers and understand the impact and risks involved, as well as predict commercial feasibility.

4.3.1.

REVIEW RECORDS ON VISITOR NUMBERS TO THE AREA

Enquiries to the local tourist information organisation and local government authority may help determine the number of potential visitors, which will be an important factor in a cost benefit analysis of your venture. There may already be some records of how many persons visited the station or adjacent attractions in previous years.

Carry out local research into other holiday attractions that exist in the area and try to establish visitor numbers. Assess how the new attraction will fit in.

4.3.2.

WHAT ARE THE MAIN ATTRACTIONS FOR VISITORS?

Survey other attractions in the area; consider why and for what duration visitors visit the area. Is there enough interest to make a full day's visit (or longer) to the area? Rather than competing with existing local attractions, the lighthouse experience may encourage more visitors to the area and is likely to be welcomed (if set up appropriately) by local tourism bodies, commercial bodies and local councils. To this end there is scope to establish conversations with these bodies to the mutual benefit of all parties.

Any uncertainty as to the opening time of the attraction will affect visitor numbers and can lead to complaints and bad reviews.

4.3.3.

WHERE ARE THE LOCAL TOURIST CENTRES?

Consider the focal points of tourist interest and see how the lighthouse venture would fit in. Is it close to these or will it have to be a significant attraction to draw visitors away from other areas? Conversely it could be on one of the tourist routes and may pick up the passing trade.

4.3.4.

WHERE DO VISITORS STAY?

Identify the main areas offering tourist accommodation. Consider marketing your attraction(s) in and around these areas.

4.3.5.

COULD THE STATION BE INCLUDED IN A REGIONAL TOUR?

Negotiating with local tour operators and tourist information centres to have the lighthouse included in regional tour packages would increase footfall to your attraction; cross-marketing (such as joint ticketing) would also help take advantage of this.

4.4. AVAILABLE ACCOMMODATION ON STATION

This section will help organisations assess and utilise existing space on site.

4.4.1.

IS THERE ACCOMMODATION FOR DAY STAFF ON SITE?

Assess the potential development requirements of the site for the new attraction.

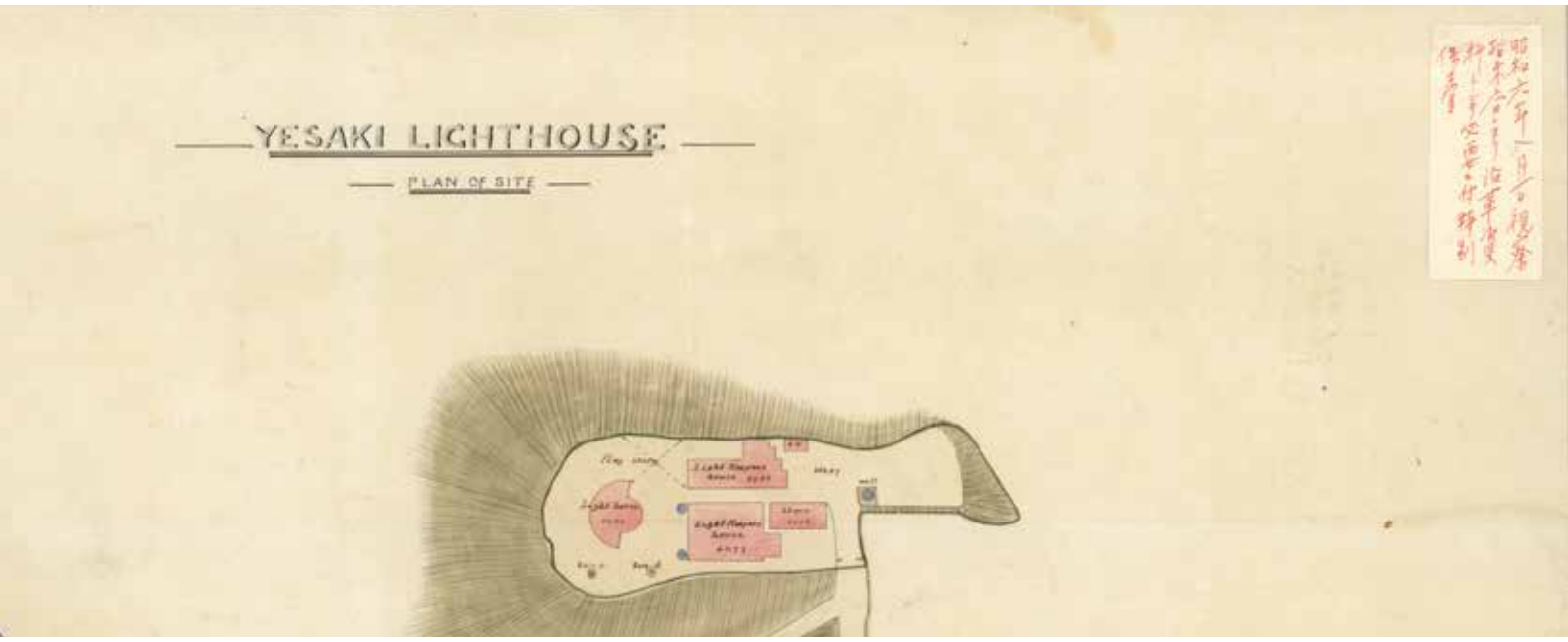
All options for the reuse of existing accommodation and outbuildings must be considered. The minimum requirements would be for a rest room and toilet facilities for staff.

4.4.2.

IS THERE SUFFICIENT ACCOMMODATION FOR RESIDENTIAL PURPOSES?

There are advantages from the security and organisational aspects for responsible staff to live on site in redundant dwellings.

“CLEARLY DEFINED AIMS STATED IN MEASURABLE TERMS WILL BE IMPORTANT TO THE DEVELOPMENT OF THE PROJECT AND ALSO TO THE ONGOING EVALUATION OF ITS SUCCESS OVER TIME”



Esaki Lighthouse, Japan

4.4.3.

IS THERE SUFFICIENT SPACE TO DISPLAY EXHIBITS?

Utilising open space to display exhibits enhances the value of the attraction and can provide a waiting area for visitors prior to visiting the tower, or for those who are not inclined or unable to ascend the tower.

4.4.4.

IS THERE SURPLUS ACCOMMODATION?

This could be used for holiday letting or other residential/commercial/leisure ventures.

4.5. AUDIENCE APPEAL

This section will help organisations assess the appeal of the lighthouse site to potential customers, especially tourists.

4.5.1.

WHAT IS THE HERITAGE VALUE OF THE STATION?

Consider its architectural and technical value. What is special about the station that would be of particular interest to visitors?

Beyond the immediate architectural and operational appeal to visitors, consider the cultural heritage, which includes (but is not limited to) navigational, technological, material, industrial, social, environmental, maritime and local community aspects. Incorporating a mix of the above will more effectively enhance educational, cultural and commercial activities on site.

4.5.2.

ARE THERE ANY HISTORICAL ASSOCIATIONS OF NATIONAL OR LOCAL INTEREST?

Does the lighthouse feature in any local or national history or folklore? Facts and anecdotes of this nature could be investigated and incorporated into the interpretation and marketing of the attraction.

4.5.3.

IS THE LIGHTHOUSE OPERATIONAL?

An operational lighthouse is likely to provide a greater draw than a redundant lighthouse, and should be made explicit in the interpretation and marketing for the attraction if appropriate.

4.5.4.

IS THE LIGHTHOUSE WELL MAINTAINED?

Does it meet the public's perception of a lighthouse? Although subject to each nation's history of lighthouse design, the general public's archetypal lighthouse is typically a traditional masonry structure. By way of example, a tall elevated tower with adjacent cottages is likely to have a greater draw than a cast iron tower or a short building.

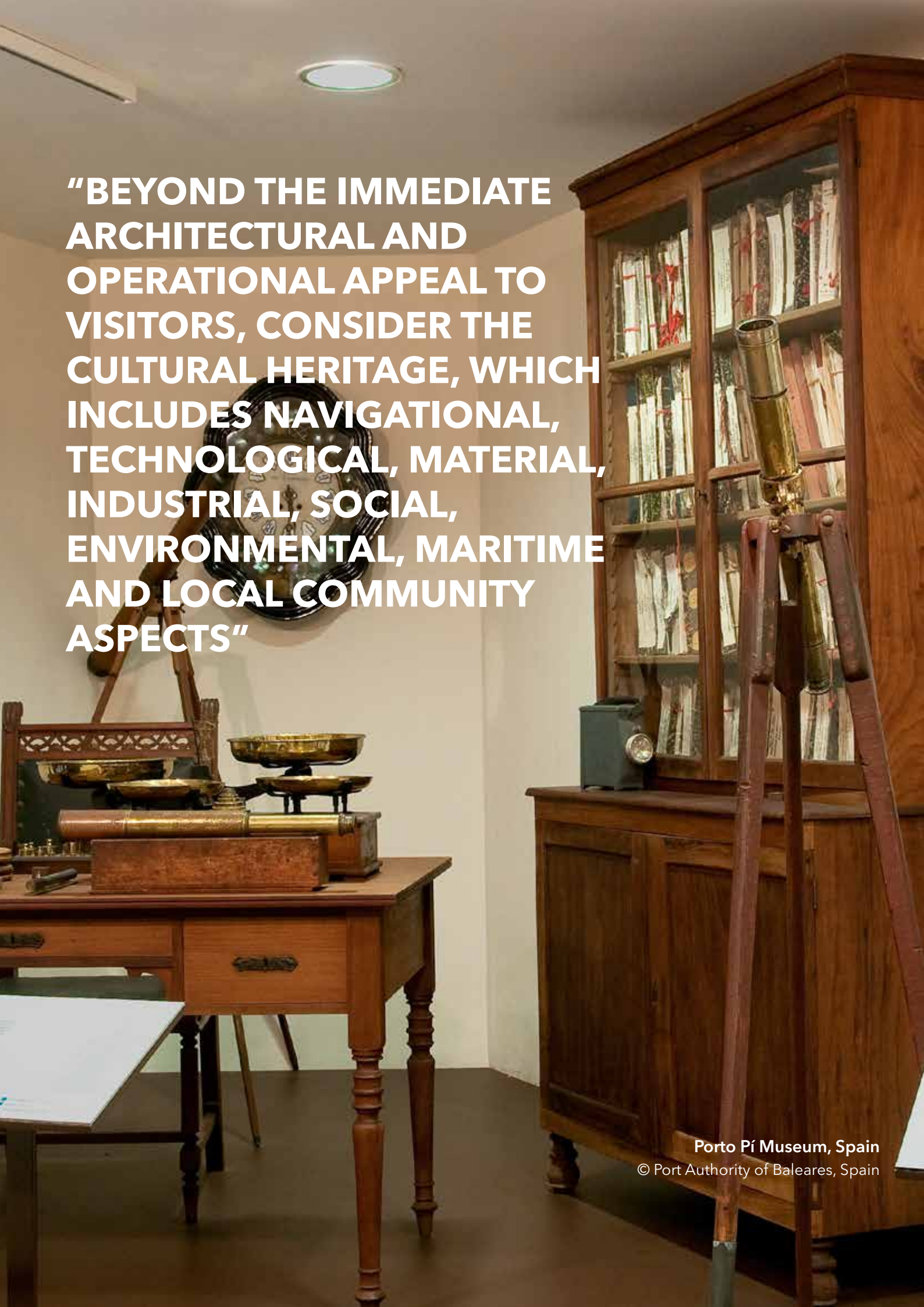
Review the condition of the current structure, stonework, woodwork and internal and external decorations. Does it convey the corporate image of the service? This will give a good indication as to how much work will be needed to restore it in order to reflect the corporate image, unless the purpose is to present it in a state of natural decay; the latter strategy has been adopted at a number of ancient properties in the UK to demonstrate the impossibility of indefinite conservation.

4.5.5.

DOES THE LOCATION OF THE LIGHTHOUSE OFFER A GOOD VIEW?

The lighthouse lantern may offer outstanding views of the surrounding area from an elevated vantage point; this should be made clear in the marketing of the attraction as a major incentive to potential visitors.

Can safe vantage points be designated in order to maximise on this point?



“BEYOND THE IMMEDIATE ARCHITECTURAL AND OPERATIONAL APPEAL TO VISITORS, CONSIDER THE CULTURAL HERITAGE, WHICH INCLUDES NAVIGATIONAL, TECHNOLOGICAL, MATERIAL, INDUSTRIAL, SOCIAL, ENVIRONMENTAL, MARITIME AND LOCAL COMMUNITY ASPECTS”

Porto Pí Museum, Spain

4.6. STAFF REQUIREMENTS

This section will help organisations consider appropriate staffing requirements for the smooth and successful operation of the venture.

4.6.1.

WHAT STAFFING LEVELS WILL BE REQUIRED TO OPEN THE STATION?

Review the work needed in order to manage access and supervision, as well as possible ticketing, tours and shop area.

4.6.2.

ARE THERE PLANS FOR STAFF TO LIVE ON STATION?

This needs to be reviewed as it will have an influence on the operating costs, but this should be offset by other advantages previously mentioned.

4.6.3.

WILL EXTRA STAFF BE REQUIRED TO MAINTAIN AND CLEAN THE STATION AND ITS FACILITIES?

This needs to be reviewed as it will have an influence on the operating costs, but this should be offset by other advantages previously mentioned.

4.7. WHAT AMENITIES AND FACILITIES CAN BE PROVIDED?

This section will help organisations consider any amenities and facilities that can be provided on site for adding value to paying customers.

4.7.1.

CAN PUBLIC TOILETS BE PROVIDED?

If so, it will be necessary to consider both an adequate water supply and waste treatment facilities, as well as regular maintenance and cleaning.

4.7.2.

CAN A CAFETERIA OR RESTAURANT BE INCORPORATED?

Food hygiene and food preparation rules and regulations will have to be followed. This would probably be run as a separate venture and possibly be privately franchised.

4.7.3.

CAN EXHIBITS BE ACCOMMODATED?

This can provide a valuable asset to the service ensuring that historical items are properly stored and maintained.

4.7.4.

CAN A GIFT SHOP BE INCLUDED?

The items sold in the shop should be of a quality that reflects the corporate image of the service.

4.7.5.

CAN HOLIDAY ACCOMMODATION BE INCORPORATED?

This venture will need additional resources to run on site and manage the letting arrangements.

4.7.6.

CAN A CHILDREN'S SAFE PLAY AREA BE INCLUDED?

It is assumed that this would only be provided in connection with the provision of other facilities such as a cafeteria or museum as some supervision will be needed.

4.7.7.

CAN OTHER EQUIPMENT BE PROVIDED FOR PUBLIC USE?

There is scope to consider opportunities to

provide equipment that will enhance the attraction, such as benches, fixed-base telescopes, sign posts, picnic tables and more.

4.8. FINANCIAL ASPECTS

This section will help organisations identify and budget for the finances necessary to set up and operate the venture.

4.8.1.

COST OF CONVERSION AND SET UP

What is the estimated cost of the proposed conversion(s)? Review the estimated costs of the material changes required to the station and consider the various options. For instance, it may be worthwhile phasing the introduction of the work in order to judge the practical success of the project before moving on to more ambitious plans.

If your lighthouse visitor centre features exhibits and interpretation panels, your plans will need to factor in the cost of exhibition design, installation, display cases, transport of artefacts as well as the potential contracting of research, copywriting, design, production and installation of interpretation panels, interactive displays (whether mechanical or digital) and audio-visual materials.

4.8.2.

ANTICIPATED RUNNING COSTS

- What will be the cost of staff required to run the attraction?
- What will be the cost of staff required to maintain the attraction?
- Identify any additional maintenance costs over a period of years; these should include costs originating from the additional wear and tear to the fabric of the building;
- Identify the cost of refreshing exhibits and interpretation signage every 5-10 years, including ongoing technical support for interactive display units;
- Consider and include any other daily running costs not previously covered; these could include extra cost of utilities, printing of pamphlets, allowances to staff and so on.

4.8.3.

ANTICIPATED REVENUE

- What is the projected revenue from the project?
- This should include returns from car parking, entrance fees and income for any other attractions as appropriate;
- Will any grants be forthcoming? The conditions attached to any grant opportunity need to be reviewed to ensure that they are not too onerous;
- Are there any fundraising opportunities?

4.9. CONCLUSION

Consider the above aspects for each station in question. After suitable research has been undertaken it will be possible to carry out a financial assessment of its suitability and to predict further financial improvements if facilities are extended.

A phased introduction of a project can provide an opportunity to confirm the original assumptions and restrict full financial exposure.

4.10. ANNEX A: CHECKLIST

The following provides an aid to check that all points have been considered. This may be copied and completed for each station evaluated.

Evaluate all the items under each heading.

Weighting: consider the importance of each item using a common weighting for all sites being considered.

0: Not applicable

1: Applicable

2: Very applicable

3: Essential

Rating: consider all the aspects under each heading and provide a rating of 0 to 10 (10 being ideal).

Multiply weighting by rating to give a total for each heading.

Add up the score for each heading to give a total for a site, which can be compared to other sites evaluated using the same means.

Station name:			
Items to be considered	Weighting (0-3)	Rating (0-10)	Total
Predicting the number of visitors	e.g. 2	e.g. 6	12 (i.e. 2 x 6)
Available accommodation			
Interest factor			
Visual aspects			
Pedestrian access			
Access within lighthouse buildings			
Staffing requirements			
Attractions and facilities that can be provided			
Financial aspects			
			Station total:

“RATHER THAN COMPETING WITH EXISTING LOCAL ATTRACTIONS, THE LIGHTHOUSE EXPERIENCE MAY ENCOURAGE MORE VISITORS TO THE AREA AND IS LIKELY TO BE WELCOMED BY LOCAL TOURISM BODIES, COMMERCIAL BODIES AND LOCAL COUNCILS”

Cordouan Lighthouse, France

5.0

VISITOR SAFETY

Prior to allowing access to members of the public a thorough risk assessment needs to be carried out. Visitors come in various shapes, sizes and states of physical fitness; it is difficult to judge in advance the ability of each individual to climb stairs and tread uneven floors. Ultimately it must be for the visitors to decide for themselves what they can and cannot manage.

It is important that the visitors be provided with a safety briefing which details which areas can and cannot be accessed before entering the site.

5.1. ARRIVING AT THE LIGHTHOUSE

This section will help organisations enhance access and minimise risk for customers visiting the site.

5.1.1.

ENSURE PEDESTRIAN ACCESS IS SAFE

If vehicles must use the pedestrian access, consider restricting it to authorised vehicles only and that either imposing a speed limit or the use of speed ramps controls the speed of them. Ideally a separate pedestrian access path should be provided.

Safety of visitors must be paramount.

5.1.2. ENSURE CAR PARKING IS PROPERLY ORGANISED AND SYSTEMATIC

Parking is desirable and should be so arranged that it can take place safely without supervision. It should also be located away from the lighthouse so as not to detract from the view of it.

5.1.3.

PROVIDE ADEQUATE FENCING WHERE THERE ARE STEEP DROPS OR OTHER DANGERS

Use barriers to direct and control the access of visitors.

5.1.4.

ENSURE STEPS AND SLOPES HAVE ADEQUATE HANDRAILS

Assess the quality of steps and upgrade as necessary and practicable to meet national standards.

5.1.5.

EXTRA PRECAUTIONS FOR ACCESS BY FERRY

Extra staff may be required to receive the boat at the landing and adequate life saving equipment in the form of buoyancy aids, needs to be provided. The surface of the landing must be kept free from slippery algae.

If access is by boat additional safety measures will be required.

5.1.6.

WARNING SIGNS, FIRST AID AND EMERGENCY TELEPHONES

Provide warning signs to direct the public's attention to the existence of the emergency facilities.

Ensure staff are familiar with first aid and emergency procedures.

5.1.7.

ENSURE SITE SECURITY

Provide means of closing off the site when the attraction is closed using locked gates, security fencing and notices.

5.2. WITHIN THE LIGHTHOUSE COMPOUND

This section will help organisations assess and mitigate risks to visitors on site.

5.2.1.

ENSURE ALL HAZARDS ARE REMOVED, HATCHES, MANHOLE COVERS ARE LOCKED, ETC.

One of the biggest concerns are the covers of underground water tanks that have lifting rings which are vulnerable to interference. The removal of the rings or the fitting of a locking bar over the cover can make these secure.

- Hazards that cannot be removed should be properly fenced. These fences need to be child proof;
- All access ladders should have anti-climb devices fitted;
- Ensure all outbuildings where public access is not to be allowed are properly and securely locked.

The compound area is probably the least known area and where least supervision will be provided. Ensure safety aspects are reviewed and in particular pay attention to exit routes out of the area. This could lead on to cliff edges.

5.3. WITHIN THE LIGHTHOUSE TOWER AND BUILDINGS

This section will help organisations assess and mitigate risks to visitors once they are inside the site's buildings.

5.3.1.

PROTECTING THE VISITOR

5.3.1.1. Fence off out of bounds areas

Not all areas will be suitable for public access.

It is paramount that parents are made fully aware of their responsibilities to supervise properly their children while on site. At some locations it may be wise to refuse entry to unaccompanied children.

5.3.1.2. Decide on any restrictions to access

In many towers low parapets exist, handrail stanchions are of non-standard height and spacing. It may therefore be decided that unaccompanied children cannot be allowed. It is prudent to prohibit adults from carrying children and babies while climbing the stairs.

5.3.1.3. Provide health warnings

These warnings can refer to steep steps and long climbs. It is not only the physical effort involved but also a warning to those who suffer from vertigo. It is often coming down that causes the greater problem.

5.3.1.4. Identify hazards and mark/protect as appropriate

Mark low beams and other obstructions. Protect the lighthouse equipment from physical interference; simply marking 'do not touch' is not always adequate. Provide warning signs against hazards such as hot pipes, acid and fog signals. Provide signs to indicate no smoking areas.

5.3.1.5. Remove finger traps

This applies to items such as cable tray, optic rollers and slamming doors.

5.3.1.6. Paint edges of stair treads

Where changes in levels occur, painting the top edge of the step a more visible colour will bring it to the attention of the visitors. Where a flight of steps is involved then it is probably not necessary to paint the edges of each step, only at the end of a landing.

5.3.1.7. Floors and steps should be painted with non-slip paint

This needs to be effective in both wet and dry conditions.

5.3.1.8. Ensure that mats do not slip or form trips

Non-slip mats are available for this purpose.

5.3.2.

PROTECTING THE EQUIPMENT

5.3.2.1. Provide cautionary signs

Clear and concise signs need to be displayed to warn of various conditions and hazards on site, such as loud noises or equipment that may start automatically.

5.3.2.2. Provide barriers and guards

The barriers do not need to be complex if they are sited at a sufficient distance from the equipment. Guards, however must meet health and safety requirements to protect both service personnel and members of the public from rotating machinery.

5.3.2.3. Prevent visitors interfering with lighthouse equipment

Equipment should be designed from the outset with this in mind, but this may not be feasible with historical apparatus. For modern electronic control units the controls can be activated only under key control or may require a front cover to be opened. On older control units hook-on guards can be made.

5.3.2.4. Provide self-closing gates at the top of steep stairs

This should be standard practice within the lantern area to prevent visitors or service personnel from falling backwards down the stair well.

5.3.2.5. Control visitor numbers and consider what supervision is required

Review the site and proposals and develop a visitor flow plan. Sketching it on a site plan will assist in determining the space required and supervision needed.

5.3.2.6. Consider the child's eye view

Provide boxes or raised platforms for children to stand on. If you do not, they may climb on to equipment boxes or cable trays to get a better view.

5.4. GENERAL SAFETY MEASURES

This section will help organisations consider health and safety requirements in relation to the staff and the lighthouse.

5.4.1.

ENSURE THAT STAFF ARE TRAINED IN FIRST AID

Ensure that staff trained and certificated in first aid are on site at all times.

5.4.2.

PROVIDE A FIRST AID BOX

It may be necessary to provide more than one in strategic positions.

5.4.3.

ENSURE THAT STAFF ARE FAMILIAR WITH SAFETY PROCEDURES

This will need to cover all eventualities and will probably need to be contained within a manual.

5.4.4.

PROVIDE FIRE DETECTION THROUGHOUT THE PREMISES

In case of the threat of personnel becoming trapped at the top of a tower during a fire, a fire detection system will provide sufficient advance warning to allow safe evacuation. The system must be regularly tested to confirm proper operation. Automatic fire extinguishing systems must be locked off during public access.

5.5. MANAGING VISITORS

This section will help organisations design and manage the safe and smooth movement of visitors around the site.

“ENSURE STAFF ARE PROPERLY TRAINED AND CAPABLE OF SHOWING VISITORS AROUND; TRAINING AND REGULAR BRIEFING SESSIONS FROM THE ATTRACTION OR SITE MANAGER WILL HELP ENSURE CONSISTENCY AND QUALITY”

Feistein Lighthouse 1915, Norway

5.5.1.

ENSURE STAFF ARE PROPERLY TRAINED AND CAPABLE OF SHOWING VISITORS AROUND

Training and regular briefing sessions from the attraction or site manager will help ensure consistency and quality.

5.5.2.

PLAN THE ROUTES

To avoid bottlenecks, place controls on the number of visitors going into restricted areas such as lantern housing.

5.5.3.

ALL MOVEMENTS MUST BE UNDERTAKEN IN AN ORDERLY MANNER

Avoid overcrowding, as it will be counter-productive to the aim of a positive lighthouse experience.

5.5.4.

FACILITIES

Toilet facilities should be provided for public use where practicable. Are adequate water supplies available and can the waste be properly treated? Provide waste paper bins strategically around the site.

5.6. ANNEX A: CHECKLIST

The following provides an aid to check that all points have been considered.

Items to be considered	Applicable? Yes/No	Comment
Arriving at the lighthouse		
Ensure pedestrian access is safe		
Ensure car parking is properly organised and systematic		
Provide adequate fencing where there are steep drops or other dangers		
Ensure steps and slopes have adequate handrails		
Extra precautions for access by ferry		
Warning signs, first aid and emergency telephones		
Ensure site security		
Within the lighthouse compound		
Ensure all hazards are removed, hatches, manhole covers are locked, etc.		
Within the lighthouse tower and buildings		
Protect the visitor		
Protect the equipment		
General safety measures		
Ensure that staff are trained in first aid		
Provide a first aid box		
Ensure that staff are familiar with safety procedures		
Provide fire detection throughout the premises		
Managing visitors		
Ensure staff are properly trained and capable of showing visitors around		
Plan the routes		
All movements must be undertaken in an orderly manner		
Consider visitor facilities		

6.0

INTERPRETATION PLANNING

The aim of a lighthouse visitor centre is to engage and maintain the interest of the visitor for the duration of their visit, as well as to be sufficiently appealing to be easily marketable to potential visitors; it is also prudent to plan to encourage repeat visits and positive customer reviews.

The success will depend largely on the attitude, experience and knowledge of the staff, but the following sections will help identify areas where specific interest can be generated and their inclusion—where practical—will enhance the attraction.

6.1. STAFF

This section will help organisations ensure that a well-trained workforce adds value to the visitor experience.

6.1.1.

ENSURE STAFF HAVE APPROPRIATE KNOWLEDGE

Staff and volunteers should be sufficiently well briefed to have a general knowledge of the lighthouse's navigational and technological functions and equipment; staff should also be aware of the requirements and goals of the owner/operator of the lighthouse with respect to education and tourism. Selecting staff and volunteers that are able to satisfy the above requirements is important.

6.1.2.

EX LIGHTHOUSE KEEPERS AND ATTENDANTS

Keeping retired lighthouse keepers and attendants involved with the visitor experience (such as tours or ticketing) will enhance the attraction by complementing the exhibits with their working experience and anecdotes.

6.1.3.

PROVIDE NECESSARY TRAINING TO ENABLE THEM TO CARRY OUT THEIR JOB

It may not be possible to employ somebody straight away with the necessary experience so training will be necessary, carried out on site or at an appropriate facility nearby. Staff need to be courteous to visitors.

6.2. GENERAL INTERPRETATION DISPLAYS

This section will help organisations design informational signage that interprets the various aspects of the site to educate and entertain the visitor.

6.2.1.

IDENTIFY VANTAGE POINTS AND THE POSITION OF INFORMATION BOARDS

This needs to be done at an early stage and will be needed when planning guided tours or considering visitor numbers. Too much information in one spot will cause a bottleneck.

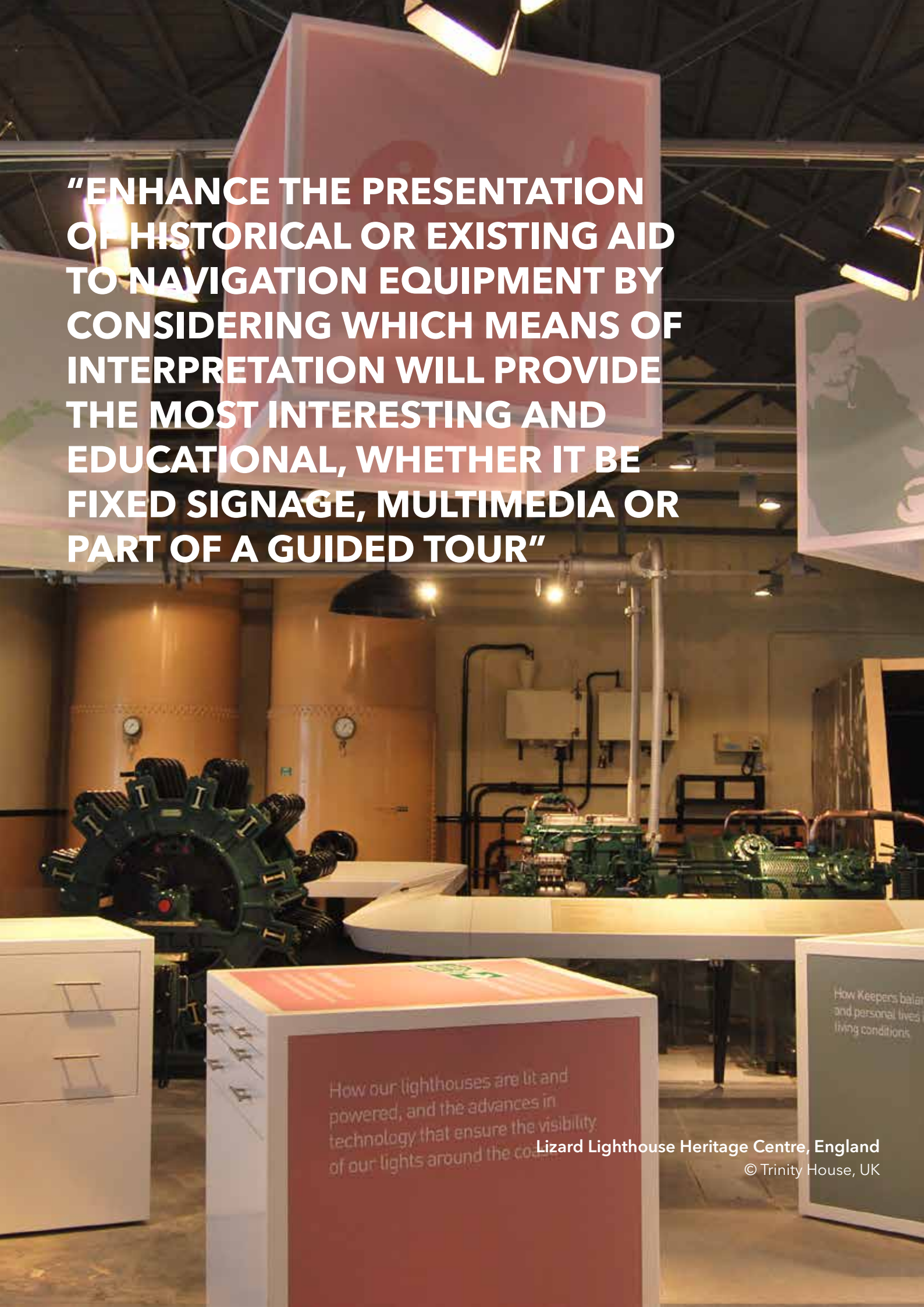
6.2.2.

DISPLAY BOARDS

These need to be as legible as possible, both in terms of visibility (ensuring sufficient text size and contrast) and language and themes used, ensuring that all types of audiences are catered for. Use a balance of text, diagrams and pictures, noting that modern displays do not favour text-heavy displays.

With the use of computers and the wide availability of professional-grade desktop publishing software it is relatively straightforward to produce high standard artwork in house.

Where sufficient budget exists to do so, employ professional graphic designers or exhibition designers to design and produce interpretation; please note that although professional designers will arrange your text and images, they will generally not provide copy and images



"ENHANCE THE PRESENTATION OF HISTORICAL OR EXISTING AID TO NAVIGATION EQUIPMENT BY CONSIDERING WHICH MEANS OF INTERPRETATION WILL PROVIDE THE MOST INTERESTING AND EDUCATIONAL, WHETHER IT BE FIXED SIGNAGE, MULTIMEDIA OR PART OF A GUIDED TOUR"

Lizard Lighthouse Heritage Centre, England

themselves.

Exercise caution when installing signs or frames against historical walls, drilling into the mortar rather than the bricks or stones comprising the wall.

6.2.3.

EQUIPMENT INTERPRETATION

Enhance the presentation of historical or existing aid to navigation equipment (whether operational or defunct) by considering which means of interpretation will provide the most interesting and educational, whether it be fixed signage, multimedia or part of a guided tour. Identify the various parts of the lighthouse and its purpose for being there. Follow a standard format for the provision of information regarding individual pieces of equipment. Ensure that the name of the equipment, its key elements, make, when built and purpose are provided in a form that best suits the exhibit and visitor.

Graphical or textual signs need to be as clear as possible and in some cases a simplification of their operation may be necessary. The aim is to allow visitors to see and understand how it works.

6.2.4.

TECHNICAL AND HISTORICAL DRAWINGS

Reproductions of original architectural or technical drawings, although probably too technical for a layperson audience, can offer an important appreciation of the heritage of the building for visitors, given their aesthetic value and clear sense of purpose. It will generally be necessary to display a drawing near to the item being depicted.

Consider displaying navigational charts of the area and explain how the aid to navigation fits in with others in the area.

6.2.5.

DEMONSTRATIONS OF HISTORICAL EQUIPMENT

Where possible, consider occasional working demonstrations of historical equipment such as fog signals. This will provide an effective means of demonstrating to the layperson how the lighthouse may have appeared historically, as well as the work involved required to operate the historical equipment.

6.3. SOCIAL HISTORY

This section will help organisations design interpretation that moves beyond the more traditional model of displaying architectural or technological items in situ towards providing context via 'social history'.

6.3.1.

PROVIDE INSIGHT ON THE HUMAN ELEMENT OF THE LIGHTHOUSE

Although every nation will place different emphasis and value on the human element of their heritage ('social history'), a number of nations have found tremendous value in focussing on social history as well as (and sometimes over) technical or material heritage (such as engines, optics, equipment and architecture). This becomes especially important given that lighthouse keeping is now a defunct profession/ lifestyle in most countries and has become difficult for many young people to grasp.

Reproducing excerpts of written accounts by former lighthouse keepers depicting life and work at a lighthouse would be one effective way of recognising the social heritage value of a station. This could be done as an audio recording or as graphical signage. The duties, routines and hobbies of the lighthouse keepers are another source of valuable interpretation.

The benefits conferred by having retired lighthouse keepers and attendants associated with the attraction become clear here; their anecdotes and reminiscences will provide a much easier way for laypeople to connect to the heritage of the station.

6.3.2.

DESCRIBE HOW THE KEEPERS AND THEIR FAMILIES LIVED ON SITE

Describe how the keepers overcame the logistical problems of living on site. Where did their food come from? How were the children educated and where and how were stores delivered to station? Where multiple families lived on one site, how did they get along and what sort of sense of community did they have?

6.4. EXHIBITS

This section will help organisations design displays that incorporate physical artefacts.

6.4.1.

REDUNDANT EQUIPMENT AND THEIR HISTORY

Provide descriptions of artefacts and make clear their function, assuming a lack of technical knowledge on the audience's part; relate them to modern equipment, providing a timeline for the changes where possible; illustrate unique features, again assuming that it may be difficult for modern audiences (especially young people) to grasp the function and importance of now-defunct equipment without sufficient interpretation.

6.4.2.

ARTEFACT CATALOGUING

For security and heritage documentation purposes, it is prudent to create and regularly maintain a catalogue or register of all historical items on station, such as clocks, engines, optics and so on. This could be done using bespoke museum cataloguing software or could be done using available office software. Each item's record should include the following descriptors as a minimum:

- Unique identification number;
- Object name;
- Object location (and date recorded);
- Brief description.

An image of the item (where possible) should be included.

6.4.3.

INTERACTIVE DISPLAYS

Many heritage exhibitions make use of digital or mechanical interactive displays, as a way of engaging with visitors (especially young visitors) through tactile or response-based learning or as a way of compressing more information into a compact space.

Mechanical interactives could include physical displays with moving parts activated manually or by a button; for example a question or piece of trivia could be printed on a flap against a wall or panel, that when lifted could reveal the answer to the question or an image that illustrated the trivia; another example could be sliding puzzles. These are an effective way to engage young visitors who may not have the patience for or interest in traditional artefact displays or fixed signage.

Digital interactives typically involve a digital touch screen on a plinth running bespoke software with quizzes, trivia, videos, games and more. One of the more significant benefits for including a digital interactive display at a lighthouse is that a lot of information can be condensed into a compact space, which is very often the case at a lighthouse.

Consider the maintenance and technical support required, especially if your lighthouse is in a remote location.

6.5. PRESENTATIONS

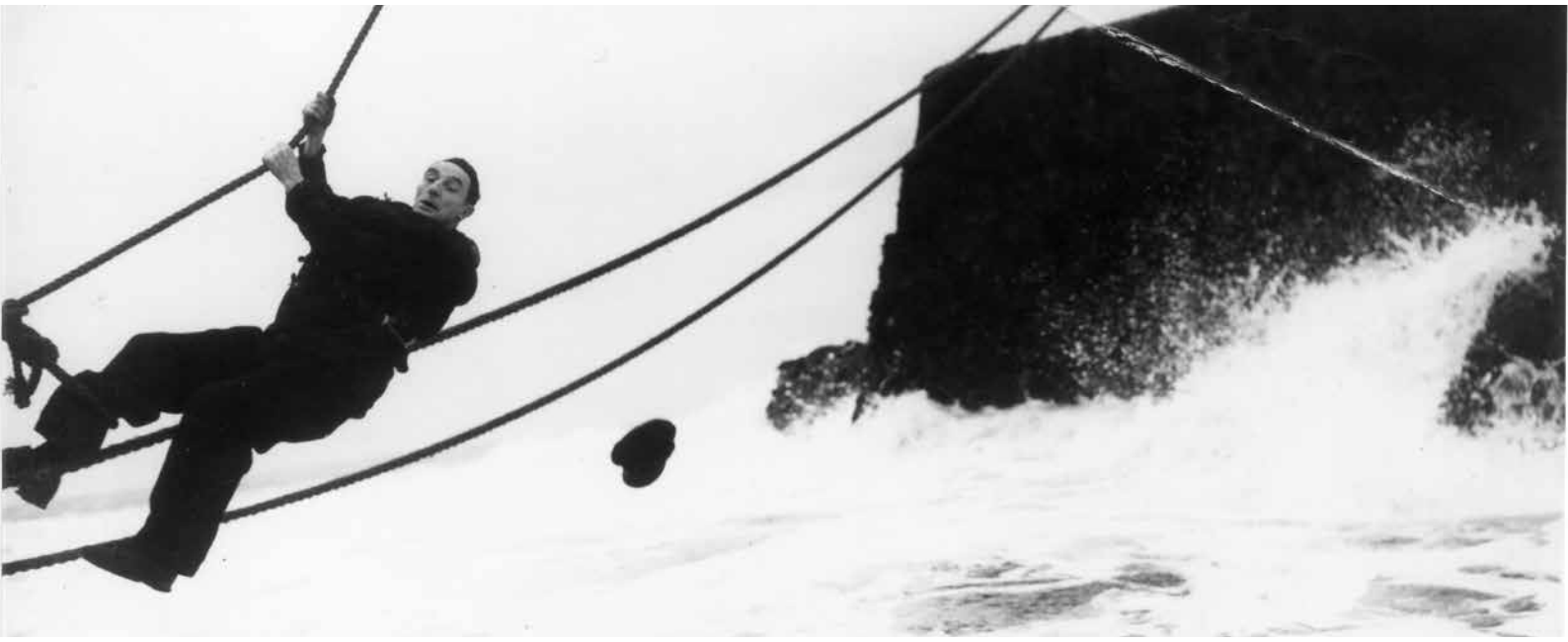
This section will help organisations design multimedia visual displays for the visitor.

6.5.1.

AUDIO VISUAL

This could involve running a slideshow or video related specifically to the station, the wider functions and goals of the organisation or lighthouse/maritime heritage in general. Videos

"ALTHOUGH EVERY NATION WILL PLACE DIFFERENT EMPHASIS AND VALUE ON THE HUMAN ELEMENT OF THEIR HERITAGE, A NUMBER OF NATIONS HAVE FOUND TREMENDOUS VALUE IN FOCUSSING ON SOCIAL HISTORY AS WELL AS TECHNICAL OR MATERIAL HERITAGE"



Relief day at Wolf Rock Lighthouse, UK

about the organisation may already exist for public relations purposes, but you may want to consider commissioning a video or suite of shorter videos focussing on bringing to life one or multiple aspects that related to the attraction.

Video length should be considered in relation to the average visit length and should not exceed the average visitor's patience; as a suggestion a single video should be somewhere between two to four minutes and a number of shorter videos should aim to be roughly one to two minutes each.

Consider whether an audio visual display requires seating for visitors. Short audio/slide presentations are unlikely to require seating.

6.5.2.

DEMONSTRATIONS

Consider arranging specific demonstrations of equipment, skills and practices to be run as special events. For example an historical fog signal could be sounded off; please note that all health and safety risk assessments and equipment testing will need to be done in advance.

These will need to be publicised and a degree of hospitality (hot/cold drinks, toilets) considered to encourage repeat visits.

6.6. LITERATURE

This section will help organisations design printed literature that provides additional context and interpretation, with the added benefit of being portable; customers can also take literature away with them for further reading or as a memento.

6.6.1.

INTERPRETATION: EXHIBIT SPECIFIC

This may be a book or pamphlet providing context for the attraction as a whole or could relate to a specific piece of equipment or exhibit. Providing literature that can taken home after the visit will hopefully enhance the educational offering and encourage word of mouth and/or repeat visits.

Consider whether they will be free to visitors or available for a fee.

6.6.2.

INTERPRETATION: CURRICULUM-BASED EDUCATION PACKS

Encouraging school visits is a good way to ensure repeat visits annually; to ensure an effective school visit consider commissioning curriculum-based education packs. An education pack will comprise teacher's notes and activity sheets for students and can be worked through either in the classroom or at the lighthouse. An education pack's teacher's notes may also have links to online content such as videos or interactive games.

6.6.3.

INTERPRETATION: SERVICE SPECIFIC

Although most visitors will be interested primarily in literature covering the lighthouse, the attraction and exhibits, there is also scope for including literature about the organisation; this would cover its modern functions and responsibilities as an aid to navigation provider or maritime authority, as well as its heritage and various other aspects that may be of interest to the visitor or convey the public relations goals of the organisation.

6.6.4.

INTERPRETATION: LOCALITY SPECIFIC

These could be third-party publications dealing with subjects of local interest, or could be literature looking at the history and development of nearby populations, as well as environmental and natural aspects such as flora and fauna or geology.

6.6.5.

ADVERTISING: LOCAL TOURIST INFORMATION

Consider displaying leaflets on other tourist attractions in the area and arranging for reciprocal

displays of your attraction's literature at other attractions.

Similarly, leaflets advertising the lighthouse attraction should be printed and distributed through the local or national tourist information service.

6.6.6.

BIBLIOGRAPHY OF LIGHTHOUSE LITERATURE

This could include details of books, novels and other literature material deemed suitable for further reading about lighthouses, maritime heritage and other aspects of maritime culture.

6.6.7.

MULTILINGUAL LITERATURE

Consider translating your literature into other languages for your overseas visitors; choose which languages to offer translations for based on the number of visitors speaking each language. Consider that adding a language to your displays and literature may open a previously quiet bus tour market or similar.

6.7. MERCHANDISE

As with general tourist attractions, selling merchandise to visitors is a straightforward way of generating income. Merchandise can range from inexpensive branded souvenirs (generally aimed at either young people or visitors looking to buy something for young people) to more sophisticated items aimed at special interest audiences; in this case an audience with interests in maritime and history. Examples of souvenirs include branded pencils, postcards, calendars, pin badges, candles, posters, thermometers and assorted nauticalia.

A range of books is also recommended for all varying ages and backgrounds if possible.

Whether the emphasis is on attraction-specific or organisation-specific merchandise should be considered; the former will be more readily picked up by visitors who would prefer to remember the lighthouse rather than the parent orgainsation, but organisation-specific merchandise can also be used at other locations.

Quality and price must be carefully considered, and the items should reflect the perceived standard of the whole organisation.

On-site storage of items in bulk (and economies of scale) must also be considered.

It also adds a requirement for extra manning and accountability of the staff for the stock.

6.8. GUIDED TOURS

This section will help organisations consider setting up and managing guided tours of the station.

6.8.1.

CONSIDER DURATION

Decide which items of interest the tour will cover internally and externally.

Careful and realistic planning of a guided tour is necessary. Its duration must not be so short as to be poor value and uninformative and not so long as to overwhelm, exhaust or possibly bore the visitor. Factor in the possibility that some visitors have ascended the tower only for the view and as such may have little tolerance for an in-depth explanation of the various aspects of the lighthouse. Likewise, young people may have limited patience.

The duration and numbers in each tour will dictate the throughput of visitors.

6.8.2.

HOW ARE VISITORS TO BE MANAGED?

In some areas visitors can be allowed to browse as they wish but in others they will need to be supervised for safety reasons. It will be necessary to decide the maximum numbers of visitors in each party and whether supervision by one member of staff is adequate.

Rules need to be established from the very start and where restrictions will apply, make it clear to

visitors in the form of notices or briefings.

6.8.3.

HOW WILL THE TOURS BE ORGANISED?

Will tours be arranged to start at set times, or as and when sufficient persons arrive, or by sale of tickets in advance? Extreme weather may have an effect visitor numbers and needs to be considered, especially if any part of the tour takes place in unsheltered areas.

6.9. ANNEX A: CHECKLIST

The following provides an aid to check that all points have been considered.

Items to be considered	Applicable? Yes/No	Comment
Staff		
Ensure staff have appropriate knowledge		
Ex lighthouse keepers and attendants		
Provide necessary training to enable them to carry out their job		
General interpretation displays		
Identify vantage points and the position of information boards		
Produce display boards		
Provide equipment interpretation		
Display and interpret technical and historical drawings		
Demonstrations of historical equipment		
Social history		
Provide insight on the human element of the lighthouse		
Describe how the keepers and their families lived on site		
Exhibits		
Display and interpret redundant equipment		
Catalogue artefacts		
Consider interactive displays		
Presentations		
Produce or commission audio visual material		
Demonstrations		
Literature		
Produce interpretation: exhibit specific		
Produce interpretation: curriculum-based education packs		
Produce interpretation: service specific		
Produce interpretation: locality specific		
Advertising: local tourist information		
Bibliography of lighthouse literature		
Multilingual literature		

Merchandise		
Guided tours		
Consider duration		
How are visitors to be managed?		
How will the tours be organised?		

7.0

FUNDING OPTIONS FOR COMPLEMENTARY USES

The success of any business venture is dependent upon a thorough analysis of the funding potential for the project. In the following chapter some key areas worthy of consideration in the very early stages of planning have been highlighted.

Start by assessing opportunities and conclude by ensuring proper financial administration practices are put in place. Although not an exhaustive list, this chapter should provide for an informed start.

7.1. MAP THE OPPORTUNITIES FOR THE PROJECT

This section will help organisations plot opportunities for the successful and beneficial operation of complementary uses on site.

7.1.1.

DETERMINE SCOPE OF THE PROJECT

- Determine level of historical value (local and national);
- Review existing government policies on conservation (national and local);
- Determine level of public interest (using empirical methods rather than assumptions wherever possible);
- Review public accessibility;
- What facilities are available?
  - In the community to support tourism;
  - On site
- Is the lighthouse part of an existing or future maritime site or initiative?
- What other attractions and marketable assets are in the area?
- Can your lighthouse be part of a package tour (for example: coastal bus tour or regional shipwreck tour).
- Can it be used for marketing?
- Merchandising;
- Determine if your project is for profit or non-profit;
- Do you have support from non-profit conservation societies?

7.1.2.

PRODUCE A BUSINESS PLAN

- Consider life of the project (minimum 5 year plan);
- Consider the effect of national legislation on the project;
- Define what you plan to offer;
- Conduct market analysis for the area (estimate potential income - numbers and timing of tourist visits);
- Estimate start up costs (capital and other costs such as consultancy). Assess the scale of funding required;
- Project annual costs (operation and maintenance);
- Prepare project justification;
- Make a 'Go/no go' decision.

7.2. REVIEW AVAILABLE FUNDING OPTIONS

This section will help organisations determine sources of funding that may be available from various sources depending on the nature of the project and local, regional, national and international arrangements.

7.2.1.

EXAMPLES OF CRITERIA FOR FUNDING FROM NATIONAL BODIES

- Provide aids to navigation (part funding where government requires continuing operation of aid to navigation);
- To support heritage-based projects such as museums, which may include lottery funding;
- To promote tourism;
- To enhance the economy and trade;
- To provide protection of the environment;

- To promote educational aspects;
- To promote public access and awareness;
- For research;
- For defence.

7.2.2.

EXAMPLES OF CRITERIA FOR FUNDING FROM REGIONAL/LOCAL GOVERNMENT BODIES

- Regional/local government may provide funding as assessed against criteria similar to those listed in 7.2.1;
- Planning authorities can provide supporting grants for the maintenance of Listed Buildings;
- Regional development agencies can provide funding to support the development of businesses and enterprises as part of employment regeneration.

7.2.3.

NON-GOVERNMENTAL FUNDING

This would include charitable trusts that have their own individual aims and objectives into which the project may fall.

7.2.4.

COMMERCIAL SPONSORSHIPS

Determine appropriateness of the sponsor before entering into an agreement.

7.2.5.

POTENTIAL SOURCES OF REVENUE FROM COMMERCIAL OPERATIONS

The following examples could be considered for income generation:

- Renting out property (buildings or land)
- Licensing: restaurants, accommodation, meeting facilities, film companies, photography;
- Branding and merchandising (products);
- Entrance fees;
- Allowing public access (tours of the site);
- If appropriate, renting space for commercial advertising;
- Location fees from allowing access for filming and photography projects;;
- Camping sites;
- Adventure tours;
- Partnerships.

7.2.6.

PUBLIC SPONSORSHIP

Funding support may be provided by the general public through:

- Donations;
- Bequests;
- Fund raising (consider approaching local heritage or community-based groups of volunteers).

7.2.7.

OTHER FUNDING OPTIONS

- Possible savings made under tax laws, such as covenants where in certain situations previously paid income tax can be reclaimed from the Government or tax exemption for charitable organisations;
- Disposal of property to allow reinvestment;
- Borrowing against assets (mortgaging);
- Marketing saleable skills as consultancy and contractual services;
- User charges e.g. light dues.

7.3. LEGAL CONSIDERATIONS

Where the aid to navigation is exhibited then there is a legal requirement to protect them from interference. The activities of the project should not affect the operation of the AtoN by day or by night.

There are a number of legal considerations involved with a project of this type, including but not limited to legal liability, financing,

partnerships and bankruptcy protection. Professional legal advice should be on hand throughout the project.

Once an initial source of funds has been identified and the necessary contacts have been made, the aim is to convince those administering the funding that it meets their relevant criteria and objectives. The provision of funding particularly in the form of grants will have certain conditions attached covering in particular the closure or failure of the venture, which may have serious financial implication on those involved. Those sponsoring such applications should fully consider the consequences of such conditions.

The long-term future of the site should be considered if a scheme is attempted and fails with large debts. How will you protect the asset?

For further detail refer to Chapter 3: Legal Issues of Complementary Use.

7.4. FINANCIAL MANAGEMENT

The project could fail if finances and record management are not managed effectively during start-up and thereafter. The following processes are considered essential to the management of the project:

- Accounting practices (financial records, invoicing);
- Stock control;
- Asset management;
- Revenue collection control;
- Audits;
- Expenditure control;
- Set standards;
- Insurance.

7.5. ANNEX A: CHECKLIST

The following provides an aid to check that all points have been considered.

Items to be considered	Applicable? Yes/No	Comment
Map the opportunities for the project		
Determine scope of the project		
Produce a business plan		
Review available funding options		
Review examples of criteria for funding from national bodies		
Review examples of criteria for funding from regional/local government bodies		
Review non-governmental funding options		
Review commercial sponsorship options		
Consider potential sources of revenue from commercial operations		
Review public sponsorship options		
Other funding options		
Legal considerations		
Financial management		

8.0

MANAGING TECHNICAL CHANGE

During the modernisation plan and process, authorities should consider retaining redundant equipment on site as it contributes significantly to the heritage and tourism value of the property.

A presentation made by Philip Hyde and David Brewer of Trinity House (UK) at the 2002 IALA Conference is reproduced as Annex B to this chapter and provides a good example of how to deal with this issue.

8.1. IDENTIFY STATION EQUIPMENT (INVENTORY)

This section will help organisations identify unique or original design and architectural features throughout the estate. The following are provided as examples:

8.1.1.

OPTIC SYSTEMS

- Light source (lamp changers, burners);
- Lens (dioptric, catadioptric);
- Reflectors and sectors (dioptric, catadioptric);
- Pedestal;
- Mercury trough;
- Motor;
- Weight-driven clockwork drive;
- Rotating system.

8.1.2.

LANTERN

- Cupola
- Glass panes and spares;
- Helical framing;
- External gallery and railing;
- Weather vane;
- Brasswork and period fittings;
- Exhaust vent.

8.1.3.

TOWER

- Material (wood, cast iron, stone, concrete, etc.);
- Tower balcony;
- Railing;
- Stairway and ornamental balustrade;
- Window frames and doors;
- Weight tube for clockwork optic drive;
- Vents;
- Watch location (underneath the lantern);
- Watch room/Service room including furnishings;
- Wall and flooring materials.

8.1.4.

DWELLINGS

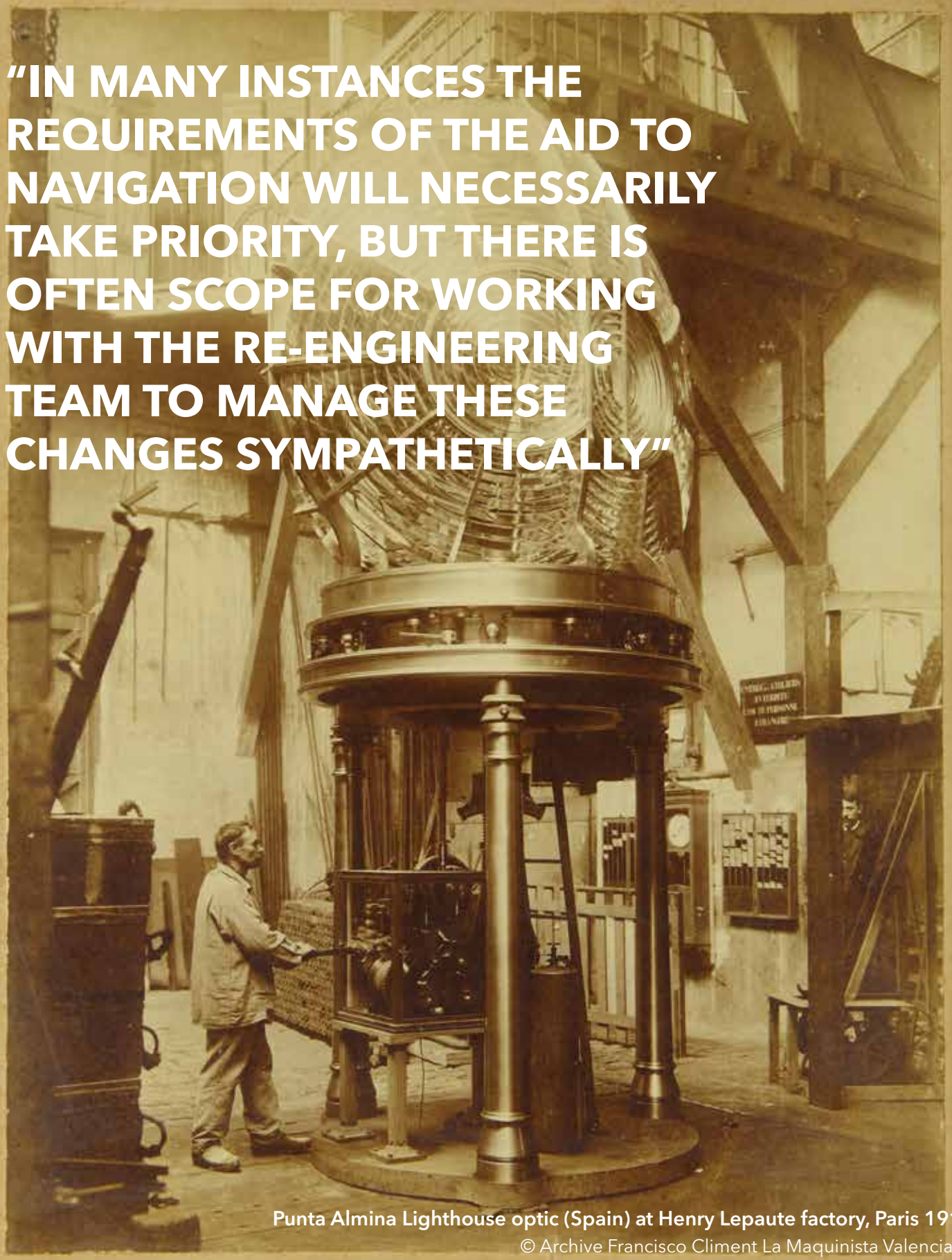
- Materials;
- Office/domestic equipment and furniture;
- Log and visitor books/stationery;
- Clocks and other instruments;
- Operating procedures;
- Water supply and collection system;
- Window frames and doors;
- Other items deemed to be of significant heritage value.

8.1.5.

OUTBUILDINGS

- Storage sheds;
- Fog signal alarm building;
- Gun powder house/cannon;
- Outhouse;
- Barns, piggeries;
- Outdoor bread oven;
- Signalling mast;
- Other.

"IN MANY INSTANCES THE REQUIREMENTS OF THE AID TO NAVIGATION WILL NECESSARILY TAKE PRIORITY, BUT THERE IS OFTEN SCOPE FOR WORKING WITH THE RE-ENGINEERING TEAM TO MANAGE THESE CHANGES SYMPATHETICALLY"



Punta Almina Lighthouse optic (Spain) at Henry Lepaute factory, Paris 1918

8.1.6.

POWER SYSTEMS

- Power and fuel sources (such as oil, gas, paraffin);
- Plant equipment (such as combustion engine, compressors, generators, coal stoves, battery storage, containers).

8.1.7.

OTHER

- Fog signals (diaphones, horns, explosive types, bells, whistles);
- Radio beacons;
- Racons;
- Radar and navigational equipment;
- Telemetry;
- Communications (radio, telephone);
- Lightning protection;
- Telescopes and binoculars;
- Uniforms;
- Nautical charts.

8.2. MODERNISATION POSSIBILITIES

This section will help organisations consider how changes to the lighthouse will affect the historical character of the lighthouse. In many instances the requirements of the aid to navigation will necessarily take priority, but there is often scope for working with the reengineering team to manage these changes sympathetically.

8.2.1.

OPTIC SYSTEM

- Potential exists for the complete removal of an historical optic apparatus and replacement with modern technology;
- During the modernisation process it is important to assess the feasibility of keeping original equipment in use.

8.2.2.

LANTERN

- The lantern might be removed completely to reduce maintenance costs and improve reliability;
- The lantern might also be altered using new materials.

8.2.3.

TOWER

- Replacement of cladding;
- Replacement of frames (doors and windows);
- Replacement of railings and grates with modern materials;
- Adding equipment to the tower (as antennas, solar panels, security systems).

8.2.4.

DWELLINGS AND OUTBUILDINGS

- Replacement of heating systems;
- Replacement of frames (doors and windows);
- Replacement of flooring;
- Replacement of cladding;
- General household improvements;
- Roof covering;
- Fog signal removal.

8.2.5.

POWER SYSTEMS

- Changeover to renewable sources.

8.3. SOLUTIONS TO CONSIDER TO ENSURE CONSERVATION

This section will help organisations consider conservation options. Prior to assessing options it is important to consult with heritage and planning

bodies in your region.

Ensure all modernisation options are assessed and wherever possible select the one that has the least impact.

- Continued use of existing equipment;
- Attempt to combine existing equipment with new technology where possible;
- Replace existing systems but retain old systems on site for display purposes;
- If not possible to retain old equipment on site, it should be removed intact and protected for display in another location;
- Attempt to install new equipment in a way that minimises the visual impact to the estate;
- If it is found necessary to replace items such as railings, siding and roofing frames with modern materials, aim to match the design and style as close as possible to the original;
- Remove equipment and package for proper storage in a protected area until the unit can be properly displayed, ensuring documentation of the item;
- Should you have a surplus of similar items you may consider retaining the best examples and transfer surplus items to other organisations, such as local history or maritime museums;
- Consider using redundant buildings for alternative use in order to maintain the historical integrity of the estate, such as heritage centres or holiday cottages;
- Demolition or removal of buildings may be considered if it is a safety hazard or in other exceptional circumstances, but organisations should consider this as a last and irreversible resort;
- Avoid disposing of surplus land, in order to protect the integrity of the site or (if unavoidable) determine the minimum amount of land required for current and future needs;
- If finances are a key driver in your decision making process you may want to consider alternative funding solutions if it contributes to conserving the heritage value of the estate.

8.4. CONSIDER POTENTIAL IMPACT OF THESE CHANGES

This section will help organisations consider and manage the impact of physical changes made to their site.

8.4.1.

NEGATIVE IMPACTS

The following list identifies some potential negative impacts of modernisation if done without sympathy for the heritage value of a site:

- Loss of local, cultural and heritage significance;
- Loss of potential property value;
- Loss of potential link to other maritime heritage initiatives;
- Loss of tourism value and subsequent effect on other local tourism-dependent businesses;
- Ire of local community and press/media;
- Potential loss of strategic coastal lands, which might be of future national interest.

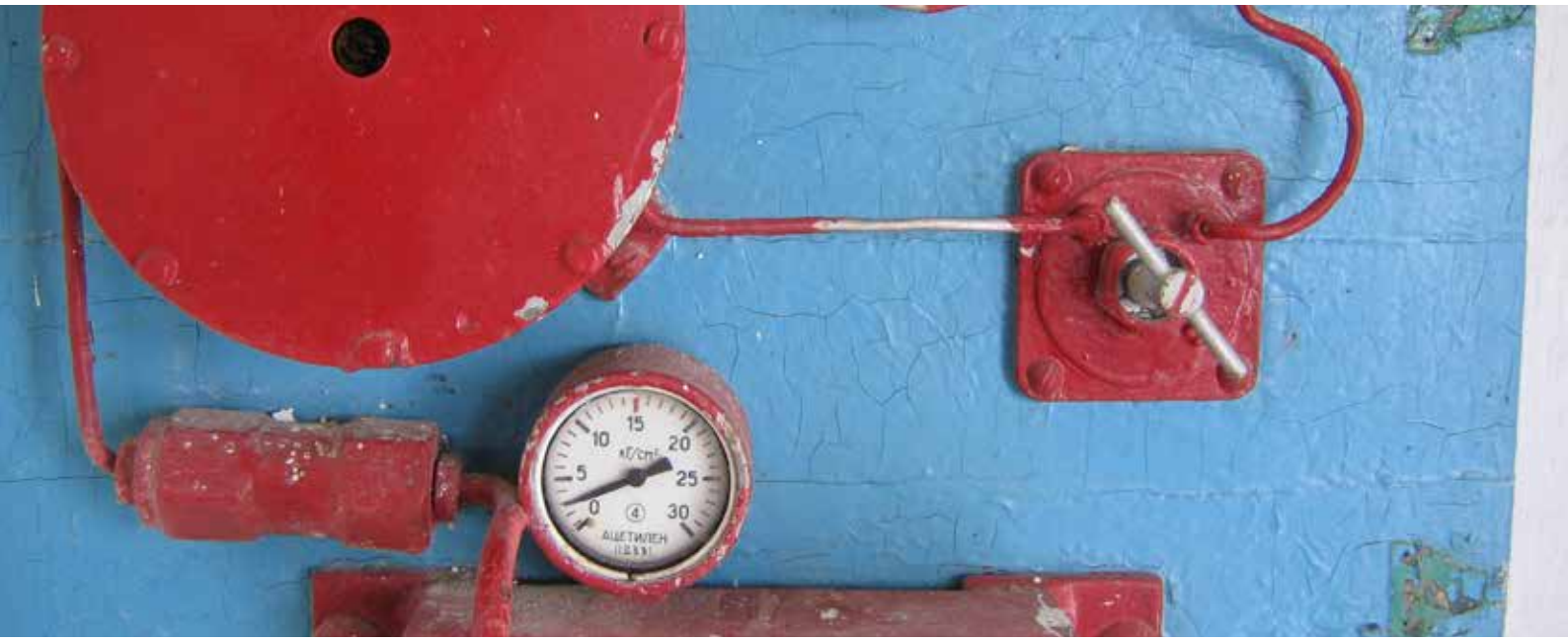
8.4.2.

POSITIVE IMPACTS

The following list identifies some potential positive impacts of modernisation:

- More effective aid to navigation;
- Environmentally friendly;
- Improved availability;
- Life extension of the property;
- Could result in a decision to continue the lighthouse as an aid to navigation;
- Improved safety;
- Improved public access.

"DURING THE MODERNISATION PLAN AND PROCESS, AUTHORITIES SHOULD CONSIDER RETAINING REDUNDANT EQUIPMENT ON SITE AS IT CONTRIBUTES SIGNIFICANTLY TO THE HERITAGE AND TOURISM VALUE OF THE PROPERTY"



Acetylene regulator, Lou Lighthouse, Estonia

8.5. ANNEX A: ASSESSMENT TEMPLATE

The following is a template that could be used when assessing the consequences of technical changes.

STATION EQUIPMENT	MODERN. POSSIBILITIES (Y/N)	OPTIONS	SOLUTIONS/ CONSEQUENCES
Optics			
Drive system (e.g. clockwork system)	Yes (with electrical, AC or DC, drive system)	Gears and drive shaft can be retained on site	Rest of the equipment (clockwork can be left on site for display or removed)
Light source (e.g. lamp changer)			
Lens			
Rotating system			
Reflectors / Sectors			
Lanterns			

8.6. ANNEX B: PRESENTATION BY P HYDE AND D BREWER OF TRINITY HOUSE (UK) AT THE 2002 IALA CONFERENCE

Title: Consequences of Technical Changes in relation to the Preservation of Lighthouses

Presenters: Philip Hyde B.Sc. (Eng), C.Eng., M.I.C.E (Principal Engineering Manager), David Brewer (Director of Administration), Trinity House (United Kingdom)

The paper will review the current changes taking place as the result of re-engineering work in relation to lighthouse equipment and structures. It will illustrate the problems and the methods used to overcome them using recently completed Trinity House projects. It will deal with the current policies on the retention and disposal of redundant equipment and introduce the idea of conservation policies.

The paper will also present Trinity House's experience in practical uses for redundant lighthouse property with the example of Lizard Lighthouse

8.6.1.

INTRODUCTION

From the day that the very first lighthouse was built, man strived to find ways of improving its efficiency and performance in order to benefit the mariner.

The pace of change has never been so great than during the last century where world technology has developed so fast as to dictate the requirements of aids to navigation. Modern lighthouse equipment has kept pace through the use of modern technology and materials.

At one time lighthouse technology was at the forefront of man's achievements but now it has lost this privilege and has had to adapt technical achievements, which have been developed in other fields. This is particularly the case in the electronic and communication field where obsolescence occurs within five to ten years due to the development in components and circuitry.

The physical space requirements to house aids to navigation have reduced with the use of modern high efficiency light sources and small focal length lens assemblies. The role of the traditional aid to navigation has also changed moving from their need to provide long range landfall marks to that of supplementing radio navigational aids and adopting more of an insurance or confirmatory role.

The majority of Lighthouses we see today were built to accommodate the equipment of the early 20th Century such as compressed air fog signals, generating plant and keeper's accommodation.

In order to maintain an effective and cost effective service, Trinity House undertook a review of all its aids to navigation to ensure that they met the up-to-date needs of the mariner and identify where the new technology could be used to advantage.

A programme of automation was started in 1980 for the automation of all offshore lighthouses followed by the manned mainland stations. Advances in communications and reliability had reached a point where the removal of keepers would not be detrimental to the availability of the aids to navigation. The destaffing of the lighthouses and the introduction of central control offered the greatest potential financial savings with a typical pay-back of the automation costs within three to four years and a predicted life of 15 years.

Upon the completion of this programme attention turned to solar conversion of offshore stations that not only provided further savings over constant running generators but also offered environmental advantages. However one effect of this was to remove any electrical power for the conditioning of the station accommodation.

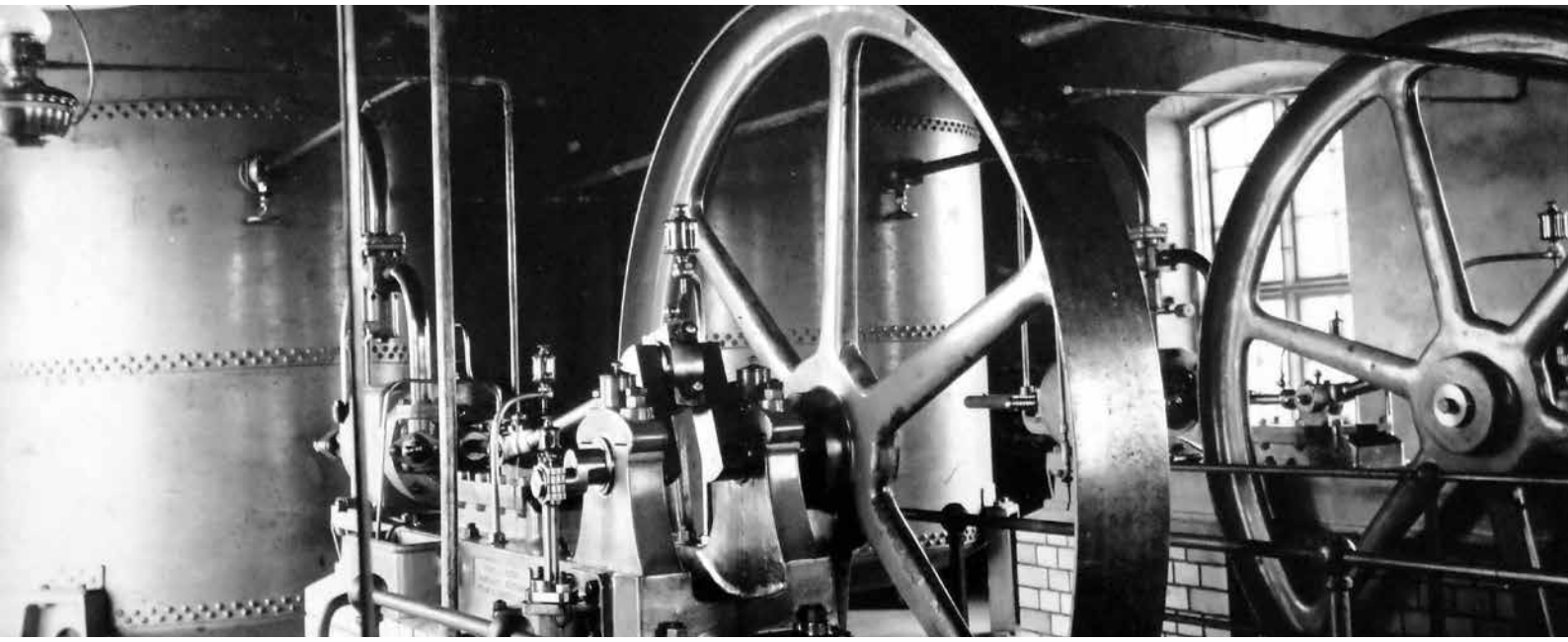
8.6.2.

CONSEQUENCES OF TECHNICAL CHANGES

8.6.2.1. The Effects on Equipment

The navigation light probably serves best to illustrate the speed of evolution. The first recorded lighthouse was The Pharos built around

“UNFORTUNATELY NOT EVERYTHING CAN BE KEPT SO SOME SELECTION PROCESS MUST BE INTRODUCED. THEIR FUTURE MUST BE REVIEWED IN ORDER TO ENSURE THAT THE SERVICE NEEDS ARE PROTECTED AND INFORMATION IS NOT LOST FOR FUTURE GENERATIONS”



Vinga steam compressor for fog horn 1891, Sweden

285 B.C. and a wood fire was kept burning on top to warn and guide ships. This continued virtually unchanged except with coal being burnt. Then to encourage the coal to burn more brightly and protect it from the weather the top of the tower was enclosed using glass windows to allow the light to be seen. This was the start of the lantern as we know it today.

The light source similarly evolved from the open burning of coal, to the use of candles, the use of reflectors to enhance the light and then on to oil wick burners and multi wick burners.

Developments continued increasing the intensity of the light sources using acetylene, paraffin vapour burners and up to today's electric lamps. The search for improvement still continues today. The use of polished reflectors gave way to the use of glass lenses.

However, it is no longer towards increasing the range of the navigation lights but to improving their efficiency. Complemented by the use of radio aids to navigation there no longer exists the need for such generous long range lights, in fact ranges are being reduced. This in turn allows the solarisation of many offshore and floating aids to navigation.

The same philosophy applies to the other aids to navigation where efficiency versus power consumption is equally important if the solarisation route is to be followed.

So what are the consequences of technical change?

New equipment will replace old, methods and practices will change. The old equipment will join other equipment that we already have on or off site that are already considered as 'artefacts'. Unfortunately not everything can be kept so some selection process must be introduced. Their future must be reviewed in order to ensure that the Service needs are protected and information is not lost for future generations.

8.6.2.2. Retention of Historic Artefacts and Equipment

There are no hard and fast rules as to how historic equipment and artefacts must be dealt with. Each must be considered in its own right as to what it is, its possible reuse, location, rarity and history. The preferred sequence is as follows:

- Can the equipment be modified and reused?

If not, then is the history of the equipment station specific:

- Left in position as an exhibit.
- Left on station as an exhibit.

If not, then:

- Exhibit elsewhere.
- Remove to Stores for use to provide spares support
- Scrap (last resort)

Such processes will involve costs.

8.6.2.3. Examples of what can be done

8.6.2.3.1 Large Filament Lamps

Large filament lamps are no longer available as they have become unique to lighthouse use. They were hand made and prohibitively expensive.

In order to retain the large glass optics that require these large diameter light sources the following can be done:

- Install modern energy efficient lamps;
- Use glass spreaders to increase divergence of the beam;
- Use lamp clusters to recreate the large size light source;
- Etch the glass envelope of the lamp(s);
- Use a glass spreader around the light source.

8.6.2.3.2 Traditional Glass Optics

Traditional glass optics, either rotating or fixed, can continue to be used after automation/ modernisation. The options available are:

- If it is a rotating optic then use stepper motor drive motors to replace standard electric motors and gearboxes.
- To avoid damage from the sun:
  - For drum lenses ensure that the lamp holder, lamp changer and wiring are properly shielded against the heat.
  - For rotating optics maintain rotation

during the day.

- Mercury baths can be retained however a safe working procedure must be followed for the handling and cleaning of the mercury baths.

8.6.2.3.3 Fog Signals – Air Fog Signals

There is no alternative equipment that can provide the long-range fog signals. Trinity House have not been able to automate the traditional air fog signal equipment and as a result have been replaced with short-range electric signals. Fog signal buildings complete with the compressors, air receivers and trumpets have become museum pieces. If conserved them public demonstrations can be arranged.

8.6.2.3.4 Fog Bell

Original carbon dioxide driven bells can be solarised using electric stepper motor drive and cam. An example of this can be seen at Trwyn Du Lighthouse in North Wales.

8.6.2.3.5 Radio Direction Finding Beacon

The system is no longer used but in the United Kingdom the transmitters are now used to transmit differential signals for GPS. Early examples of the equipment need to be kept for museum display.

8.6.2.3.6 Radar Beacons

Again equipment has developed over the years. Early examples should be retained for exhibit purposes.

8.6.2.3.7 Diesel Generators

Early models and types of engines should be retained. In many cases they can be exhibited along side air fog signal equipment.

8.6.3. OBSOLETE EQUIPMENT

Up to 20 years ago it was standard practice to remove and scrap all redundant equipment in some cases this included the large glass optics. Some optics were dismantled, crated and removed from site. They were then given on loan to museums for public display.

The problem was that when a station was being re engineered the old equipment was considered obsolete, it looked old fashioned and no longer had any use and often was in the way of the new equipment being installed. At that time the design drawings, photographs and manuals still existed, but it is amazing how quickly these details are destroyed or lost.

How should the decision be made as to what is kept or scrapped?

Originally this was done on an informal basis left to the Engineer in charge of the project, often not even mentioned in the scheme. Cost of removal was not even considered and was lost under the heading “Clear site”.

Today the profile of retaining artefacts has been raised to such an extent that a procedure has been included in Trinity House’s handover document so that every redundant piece of equipment is properly considered to determine whether it is to be retained as an artefact, returned to stores for use as spares or for potential re-use, or just scrapped.

Looking outside some of the offshore lighthouses it was obvious that the sea was used in the past as a dumping place with the remains of broken glass battery cases, wire, engine flywheels and even cannons on the seabed.

The smaller items perhaps fared less well as, if they were attractive they fell prey of the souvenir hunter otherwise were scrapped. But again they tell a story and show a method and practice. It is too late to preserve a complete installation but perhaps somewhere sufficient components exist that would allow an exhibit to be assembled within a museum environment.

It is the duty of every organisation to have a clear policy statement in place to detail how redundant equipment should be dealt with and a procedure to be followed avoiding the decision being left to the whim of an individual person who may have other interests.

8.6.4.
EFFECT ON STRUCTURES

Automation and re-engineering has led to the use of less space at the lighthouse properties. There is no need for family accommodation on mainland stations and the required day facilities for visiting personnel can easily be accommodated within the tower. On offshore rock stations, although accommodation was generally not so extensive, providing overnight accommodation for visiting personnel has still left some surplus accommodation.

The type of surplus accommodation can be divided into living accommodation and equipment space.

8.6.4.1. Living accommodation

Trinity House is most fortunate that the majority of lighthouse cottages are situated in easily accessible areas and are connected to the main services – electricity and water. Some properties were sold off in the past to private individuals as Freehold and Leasehold but in all cases problems have been experienced in the failure of the new occupants to maintain the properties to Trinity House's required standard. Unfortunately the corporate identity remains with the property and associates the service with a fall in standards!

Where the properties, and in some cases included the lighthouse tower, have been sold to a national organisation, such as the National Trust, it has not been a problem as they have maintained them to a high standard, as public attractions. However there is a limit to the number they want and can satisfactorily exploit.

Trinity House put together a business plan covering the development of visitor centres, focusing on the lighthouse itself, and the public holiday letting of lighthouse cottages. This plan showed that it was economically viable, providing a financial return, yet retaining the properties in the lighthouse estate. Work on implementing this is well underway with nine visitor centres up and running during 2001, all showing increasing visitor numbers, and the letting of cottages being introduced over the next two to three years. The handling of the hiring and the management of the day- to-day logistics of this latter operation have been put out to a third party specialising in letting holiday cottages.

The plan also allows for the adventurous use of some of the larger island sites where mains facilities are not available. This may include the idea of specialist holidays, such as bird watching.

Lighthouse cottages have a particular character having been built substantially to withstand the elements with heavy wooden internal finishes. They are located at some of the most picturesque and environmentally interesting locations around the English and Welsh coastlines.

8.6.4.2. Equipment space

This usually consists of redundant fog signal and engine rooms that were often separate buildings housing the equipment. Other rooms within the tower that have become surplus to needs have been cleared and used for storage. Most stations have outbuildings such as oil stores, pigsties and workshops. Some have explosive magazines dating from the days of explosive fog signals.

The way the majority of these buildings were dealt with in the past was for the equipment to be scrapped and the buildings demolished. The only reprieve for the building was if part of it continued to have a specific service use, in which case the redundant equipment was pulled out and scrapped but the building kept.

Luckily most of the smaller buildings have been left untouched over the years and provide an insight into life on the stations in years gone by. It is difficult to persuade maintenance departments that these need to be maintained but luckily they have survived. However where the Lighthouse is listed then they fall "within the curtilage of the building", usually taken to mean within the boundary walls, then it is a legal responsibility on the service to maintain them. Once the conservation initiative had been realised then such buildings and equipment are retained.

Options available are:

8.6.4.2.1 Retain the building with the

“HOW SHOULD THE DECISION BE MADE AS TO WHAT IS KEPT OR SCRAPPED?”

Skomvær Lighthouse 2010, Norway

equipment in place as an exhibit

This is quite easy to do by mothballing the equipment and ensuring that the building is properly conditioned. This is not so easy to do on island sites and the cost of maintaining the exterior and interior will continue to be a burden for years to come.

An example of this is the Acetylene Accumulator House at Hurst Point Lighthouse, on the south coast of England, which still houses the Moyes acetylene generators, the last surviving example of the equipment in the United Kingdom. Drawing and operating instructions are included in Appendix 3. Twenty years ago the importance of the equipment was realised and it was proposed to move it to the Lighthouse Museum at Penzance. This was not going to be easy the site can only be reached using a passenger ferry. This was never carried out and so today the equipment remains in its original building which in this form was a functional part of the equipment design. The plan now is to open it to the public as part of a visitor initiative jointly with English Heritage who own the adjacent Hurst Castle. Such a joint venture may provide some income to offset the on-going maintenance costs. The building is Listed and as a result Trinity House has a legal responsibility to maintain it. Documentation concerning its operation has also survived but only because these were archived with the drawings.

In other cases complete air fog signal buildings have been made redundant through the introduction of short-range electric fog signals. The equipment has been retained, where possible, in working order so that they can be demonstrated to the public as their sound and loudness is quite unique and would otherwise be lost forever. Such demonstrations form part of the visitor attraction hopefully raising funds for the preservation of the equipment. The engine room at Nash Point Lighthouse, South Wales is fine example where the fog signal building and the equipment form part of the lighthouse attraction

8.6.4.2.2 Retain the building for an alternative use after removal of equipment

If a building can still be used for a lighthouse use then it should be properly maintained and under go the minimum modifications to allow for its new use. At Nash Point Lighthouse a detached outbuilding in the yard adjacent to the tower, previously used as a workshop, has now been converted into an engine and control room for the station's mains standby alternator set. This is a small stone building with a slated pitch roof, sliding sash windows and entrance doors at both ends. Only minor internal modifications were required and it is now well suited to its new use.

8.6.4.2.3 Retain the building

A decision may be made to retain the building for its historical value. For this reason many such buildings have survived as a store only later to be converted for a more useful purpose.

8.6.4.2.4 Demolish the building

As a last resort the building may have to be demolished due to its structural condition. This was common in the years gone by but today all the other alternatives must be exhausted. Once demolished it is final. Also in the UK the legal right for the existence of the building through the planning rules is lost. A structure that is listed as being of special architectural interest or importance cannot be demolished without the approval of the Local Authority and the Secretary of State.

8.6.5. PROPERTY CONSERVATION

The maintenance of the lighthouse estate is a significant task. Although at the time of each re-engineering project the light towers are brought up to standard through external painting, overhauling doors and windows and remedying any defects within the fabric of the building, on-going maintenance is essential. In days gone by there was a tendency to save costs by using building materials which were of an inferior standard to those previously used. Windows are a prime example where softwood woods were used instead of hardwood. The mistakes were soon realised, not only within the service but also within

the building industry itself where the old skills and expertise have re-appeared. Some changes such as replacing cast iron gutters with plastic, reducing the need for painting and the problems of rust staining.

What is there to stop repairs being undertaken on a least cost basis using inferior material and unqualified operatives? The developments in modern building materials have tended to cater for the installation by the non-skilled labour. Part of the 'Do it yourself brigade'!

A decision has to be made in order to balance conservation against cost. The following need to be considered.

- The least cost route in the short term will most likely not be so in the long term.
- A responsibility exists to maintain the estate for future generations.
- A legal responsibility exists in the case of Listed buildings to maintain them in a satisfactory state of repair.
- Automation of lighthouses has removed the human presence on station capable of attending to minor defects before they become out of hand.
- Traditional aids to navigation are becoming less important and may well no longer be required in twenty years time.

It must be recognised that some lighthouses figure more highly than others as being part of our heritage and are therefore of national importance and must be shared with the public. Reviewing the estate, a list of such stations has been identified, the most important is considered to be Lizard Lighthouse.

The lighthouse is situated on the Lizard headland in south-west England and is the most southerly point of the British Isles. Its potential lies in it being a working lighthouse, its location, the size of the premises, its history, and the retained equipment on site. In order to record the station a conservation plan has been drawn up recording all features of historical and architectural interest. It also contains policy statements on repair and new works.

The policy contains statements that can equally be applicable to the Service in general. The implications of adopting such policies Service wide should not be dismissed lightly as they will have a significant cost implication.

A full list of the Policies drawn for Lizard Lighthouse is contained in Appendix 1.

The other purpose of the Plan is to focus on the cultural significance of the lighthouse and the policies that need to be put in place to retain this. It also provides a detailed schedule of items of significance. This considers the main components of the structure under the following headings

- Detailed area/location of component.
- Element - with description of any detail and loss of detail.
- Documentation, and its implications; indications for further research (further Information if not documented). Drawing numbers refer to Trinity House numbering.
- Significance:
    - [S1]= Exceptional significance.
    - [S2] = Considerable significance.
    - [S3] = Some significance.
    - [S4] = Little significance.
    - [S-] = Detrimental to site.
- Condition and vulnerability (and case for removal of detail if of negative significance).
- Policy proposed and/or any proposals for conservation or re-presentation.

An example is included within Appendix 2.

It would seem logical to produce global polices and undertake the preparation of schedules of items of significance for the whole lighthouse estate. The degree to which this is done will be dictated by the architectural and historic importance of each station. It also allows a schedule of items to be drawn up as part of the planned maintenance of the station identifying what must and what would be "nice to do" if finances become available. This can also be linked into formal condition surveys of the individual properties, something not routinely done within Trinity House.

Global policies for service properties should cover at least the following headings: (Reference

in brackets refers to Lizard Policies in Appendix 1).

- an effective approach to repair (Policy 2),
- the required standard of services installations and other minor works (Policy 3),
- surveying of property and the actioning of the necessary remedial work (Policy 5),
- the extent of site and boundaries (Policy 7),
- the standards of detailing in relation to the effects of the elements (Policy 9),
- protection against fire (Policy 10),
- the presumption against the commissioning of new buildings on the site where existing can be used (Policy 12),
- the long term consequences of any proposed alterations (Policy 13),
- the identification of any activity or practice that should be avoided or continued (Policies 14,15,16…),
- consideration of all aspects of the natural environment in relation to the site and its surrounds (Policy 18),
- the survival of any surviving original details (Policy 21),
- identification of any existing activities that need to be maintained (Policies 21-25).

Although these policies are generic, some will inevitably become station specific.

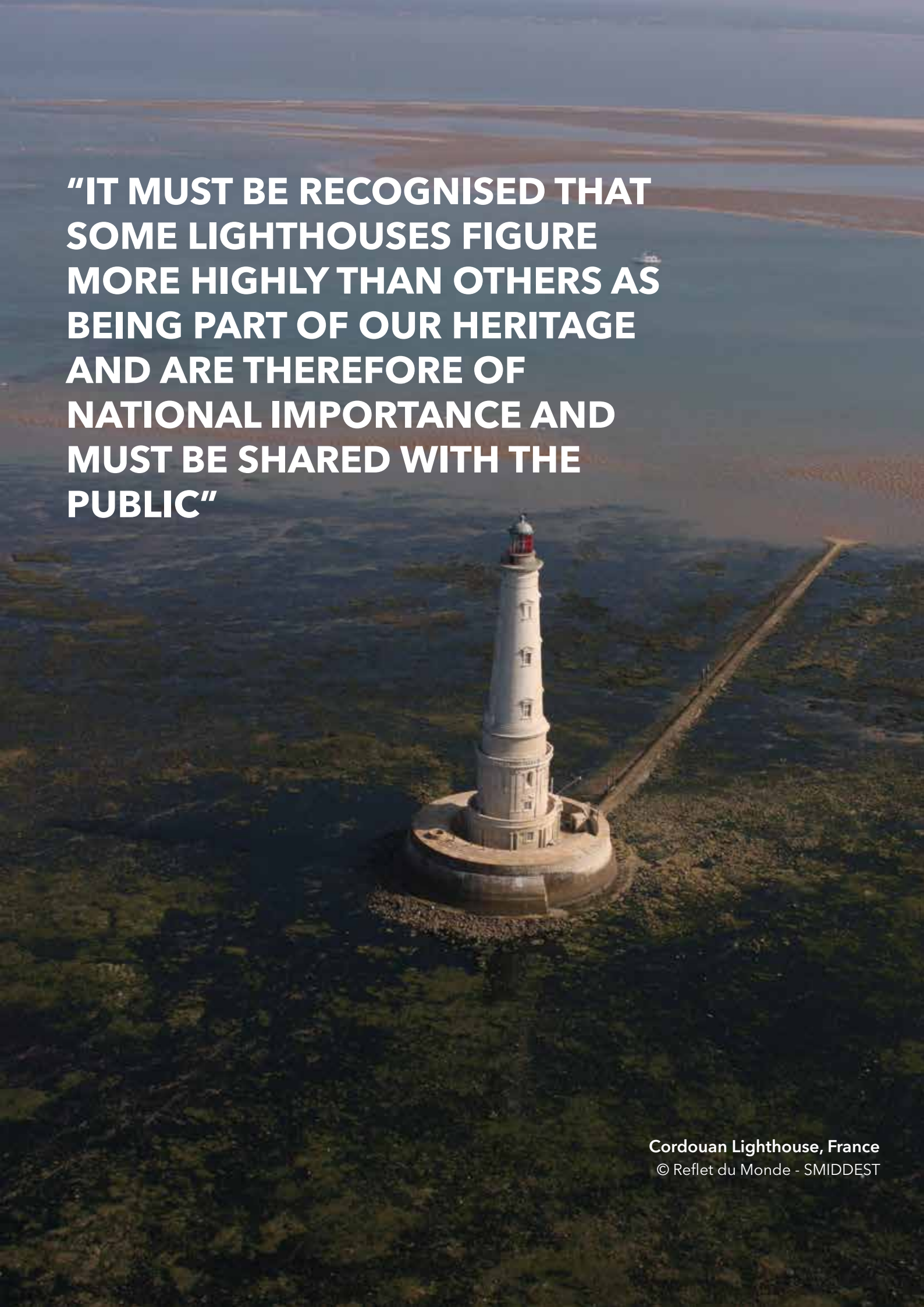
8.6.6. SUMMARY

The paper has attempted to set out the reasons for the decline in the need for traditional aids to navigation and the resulting effects on the lighthouse estate. A duty exists to record and maintain the lighthouse heritage for future generations. Procedures and policies have to be produced to ensure this so that we can move away from the decisions being left to 'the whim of an individual person who may have other interests'.

Maintaining a lighthouse estate that now exceeds the requirements of the service has significant financial implications and presents the need to look for alternative uses. The preparation of conservation plans for the significant historic lighthouses within the estate provides a basis for seeking heritage funding and recording the features and maintenance requirements. By adopting a series of generic conservation policies the process can be extended to the rest of the service, something that should be the desire of any competent Lighthouse Authority.

The setting up of the IALA Panel for the Preservation of Lighthouses, Aids to Navigation and Related Equipment of Historical Interest confirms that this is of international concern.

“IT MUST BE RECOGNISED THAT SOME LIGHTHOUSES FIGURE MORE HIGHLY THAN OTHERS AS BEING PART OF OUR HERITAGE AND ARE THEREFORE OF NATIONAL IMPORTANCE AND MUST BE SHARED WITH THE PUBLIC”



Cordouan Lighthouse, France

8.6.7.

APPENDIX 1: CONSERVATION POLICIES FOR LIZARD LIGHTHOUSE

Policy 1

The Lizard Lighthouse is to be conserved where ever possible either as a working lighthouse, which part of it currently remains, or conserved as it was at the point where it ceased to function fully as such, which might be taken as the date when keepers were withdrawn [1998].

Policy 2

All repairs are to be undertaken to a conservation specification utilising the original materials of construction unless a clear case to the contrary can be made. They shall be professionally designed, resourced and inspected by persons with appropriate building conservation experience and training, and executed by contractors with appropriate conservation skills.

Policy 3

All building services installation work shall be professionally, and carefully designed, specified and inspected, and resourced that the conservation implications of the intervention, however small scaled, are fully taken into account. In particular, all service runs, drilled holes and chases are to be agreed in advance.

Policy 4

All future major or structural building work should be formally assessed following the thinking and policies set out in this plan

Policy 5

The Authority will continue to monitor the condition of this historic station on a regular basis to produce a written quinquennial condition survey and act where appropriate on its recommendations.

Policy 6

Specific management measures and adaptations will be made to maximise accessibility to as much of the station as is possible, for all persons including those with physical disabilities, within the constraints imposed by the safety and security requirements of the station (including any operational requirements), and unavoidable physical limitations to parts of the station (eg steps in the light towers).

Policy 7

The site area and the boundary walls are to be maintained in their present (historic) form.

Policy 8

The Lighthouse Authority will seek to maintain, formally or informally, effective consultations with all the stakeholders for the Lizard Point area to ensure the maximum coordination of the objectives of the several organisations, owners and bodies involved.

Policy 9

To preserve this historic station from damage the highest standards of detailing against the weather should be adopted at this site including in the following areas:

- wind loads on roof structures;
- wind uplift on the roof coverings, ridges and flashings;
- securing and handling of windows and doors in extreme weather;
- regular checks on the structural integrity of exposed elements, especially:
  - chimneys
  - lantern and wind vane
- maintenance of lightning conductor system with extension to dwellings. Reinstate;
- protection to W tower;
- condensation and humidity;
- reduction of risk of fire spread in strong winds.

Policy 10

The best fire prevention systems and advice should be procured in consultation with the Fire Service.

Policy 11

No further property is to be sold off or acquired without a full assessment in conjunction with the completed Conservation Plan for the station in question.

Policy 12

There will be a presumption against new

buildings being commissioned on the lighthouse site where existing accommodation might be used instead.

Policy 13

Assessment of any proposed adaptation or alteration work to the site should look beyond any immediate effect to include an assessment of the impact of any possible further developments that might reasonably evolve from these changes.

Policy 14

Tenants and staff will adhere to the approved Trinity House colour scheme in all respects.

Policy 15

There will be a presumption against the fixing of signs to the exterior of building by either the Lighthouse Authority or tenants.

Policy 16

Avoid parking near light towers and control parking on site generally. Use boundary walls to the full to contain parking.

Policy 17

All options will be considered to maintain the in service use of traditional light/optic.

Policy 18

Attention will be paid to all aspects of the natural environment on and around the site, and best conservation practice in maintaining and enhancing it will be taken as a starting point in respect of the planning and execution of any alteration or maintenance work that might affect that environment. If the site merits it, an ecological audit of the site and/or surround areas may also be commissioned.

Policy 19

Everything will be done to maintain the two towers at the Lizard symmetrically as far as this can be done.

Policy 20

To maximise the possibility that their character will be retained, the dwellings should if possible remain in residential use, whether it be for custodial staff, local people or holiday accommodation.

Policy 21

Any work on the dwellings will ensure that any surviving original detail is retained in situ in some way and that in addition to this, it is used to help increase the legibility of the station (in terms of clarifying the two main phases of work).

Policy 22

The previous history of adaptation should if possible continue, viz the rear extensions, which are less formally composed, will continue to bear the brunt of necessary adaptations while the two storey S part of each dwelling remains as intact as possible.

Policy 23

The engine house should remain as it was intended, an engine house.

Policy 24

At least one of the exhibited engines will be kept in working order, to include the use of one of the historic circulating water tanks for cooling.

Policy 25

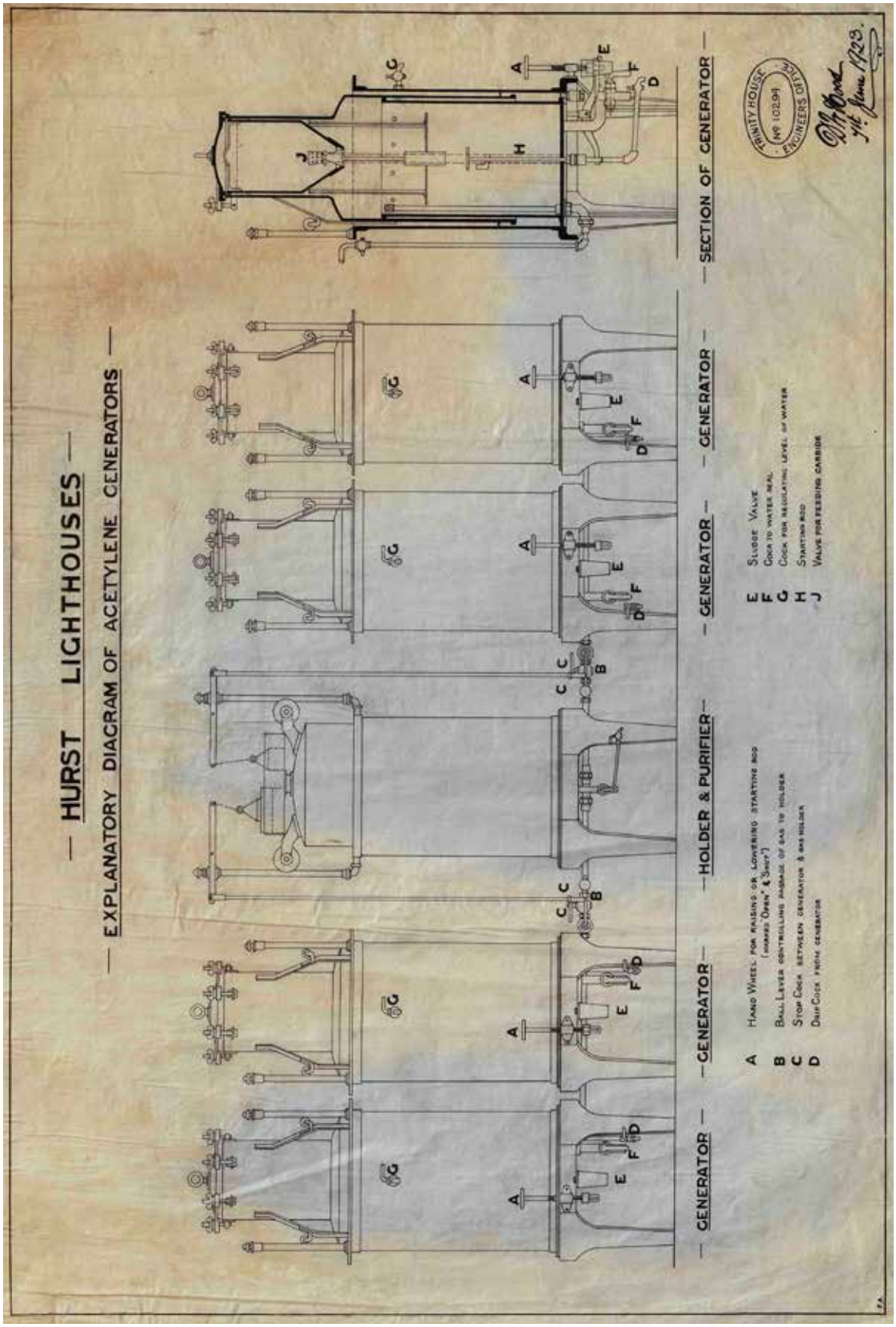
The 1897 foghorn will be kept in working order.

8.6.8.

APPENDIX 2: EXAMPLE OF THE DETAILED SCHEDULE OF SIGNIFICANCE

Conservation Plan for: The Lizard Lighthouse: Appendix 6: detailed schedule of significance

Ref No. in survey	Main component	Detailed area/location of component	Element with description of any detail, including any lost detail	Documentation, and its implications; indications for further research (further information if not documented). Drawing numbers refer to Trinity House numbering	Significance: [S1] = Exceptional significance [S2] = Considerable significance [S3] = Some significance [S4] = Little significance [S-] = Detrimental to site	Condition & Vulnerability (and case for removal of detail if of negative significance)	*Policy proposed, and/or any proposals for conservation or re-presentation*
1	**Light towers**						
1	**Light towers generally**						
			Rendered, C18 towers built of rubble stonework, significantly modified in C19 with ashlar dressings to openings etc . lantern to W tower removed in early C20 and tower capped off with concrete roof	1752 construction effectively confirmed by 1810 drawing 10/26	S1 overall for paired, once symmetrical and identical C18 coal light towers, possibly unique worldwide. E tower which is intact is rated as S1 generally, Western which has lost significant detail perhaps as S2	Deterioration of W tower of concern, especially rust expansion of iron floor structures. Retention of two towers likely to be guaranteed given listing [Grade II] but a higher listing [II*] is deserved for this station	*Retention of two towers without loss of detail essential to any future plans for this site*
1.1	**LIGHT TOWERS: EXTERIOR ELEMENTS**						
1.1.1	**Lantern & high level features**						
1.1.1.0	Lantern & high level features	W tower: generally	The only high level features surviving are the gallery rail [discussed at 1.1.6 below] and lightweight modern electronic navigation equipment, mostly bolted onto the railings	Missing lantern indicated on several drawings from the 1874 re-lanterning work and subsequently, showing E and W lanterns to be of similar or identical design	The W lantern was removed in 1903 when the establishment of a rotating optic in the E tower meant that the W tower light was [a] redundant and [b] now obstructed the new light. Its absence is therefore highly significant in telling this story [S2]. The mutilation of the symmetry of previous architectural ambitions that the removal of the E lantern represents, while aesthetically unsatisfactory, is arguably outweighed by its significance as a witness to the history of light development.	The works that were undertaken in 1903 remain unsatisfactory as discussed at 1.1.4 below, leaving the tower vulnerable to ongoing deterioration	*If at a future date the light becomes non-operational, any proposal to reinstate the lantern with a replica to regain the symmetry of the station's architectural form should still be resisted, given the significance lying behind its removal*
1.1.1.1	Lantern structure: East tower	Glazed section of lantern	Cast iron or gunmetal helically arranged glazing with blanked landward sector. Standard C19 detail glazed with curved quarries of polished plate glass held by non-ferrous beading. Integral handles and detachable purpose made ladder for external cleaning	Based on Douglass' helical design of the 1870s which he developed and promoted as an advance in lighthouse engineering. Helical layout shown on drawing 4331 dated 5 February 1874 which reveals that blank arc was proposed from the beginning.	One of the earliest applications of Douglass' helical glazing bar arrangement, thus its deployment forms part of the `state of the art' installations at the Lizard in the 1870s. [S2] for its overall visual, historic and technological importance	A long life structure given sensible maintenance and treatment. Regular painting and inspection is needed. Spare glass is kept on station but further spares may need to be made given possible losses from uneven bedding, hurricane damage and bird strikes	*Good maintenance and regular inspections needed. Ensure adequate spare glass to correct specification is available. Ensure ladder is not removed off site.*


— HURST LIGHTHOUSES —
— EXPLANATORY DIAGRAM OF ACETYLENE GENERATORS —
— GENERATOR — — GENERATOR — — HOLDER & PURIFIER — — GENERATOR — — GENERATOR — — SECTION OF GENERATOR —
A Hand Wheel for raising or lowering starting rod (marked "Open" & "Shut")
B Ball Lever controlling passage of gas to holder
C Stop Cock between generator & gas holder
D Drip Cock from generator
E Sludge Valve
F Cock to water seal
G Cock for regulating level of water
H Starting rod
J Valve for feeding carbide
TRINITY HOUSE (No 10294) ENGINEERS OFFICE
14th June 1923.

Telegraphic Address:
"ACETYLENE," GLASGOW.
"CARBIDE," EDINBURGH.

DIRECTIONS

TELEPHONES:
GLASGOW—
Central, - - 1104 and 1105
WORKS, CATHCART—
Queen's Park, - - 212
EDINBURGH—
Central, - - - - 5774

. . FOR MANAGEMENT OF . .

MOYES' PATENT 'ACETYLITE' GENERATORS

Do not allow a Light in Generator House.
Do not examine Generator with a Light even when Bell is removed.

TO PUT GENERATOR OUT OF ACTION.

1. Raise hand wheel (this lowers starting rod inside of Generator).
2. Lift Lever Ball Crane to allow Gas from Generator to Holder.
3. Shut Cock between Generator and Holder to prevent Gas getting back to Generator.
4. Open Drip Cock under Generator.
5. Unscrew Fly Bolts and take off Cover of Generator.
6. TAKE OUT CARBIDE CHAMBER. If a quantity of Carbide is still unused it is unnecessary to remove same.
7. Open Sludge Cock on Front of Generator. This runs off all lime and water from inside of Generator.
8. Open Seal Cock every charge, as water in seal becomes foul.
9. Open Water Level Cock on Front of Generator.

TO CHARGE GENERATOR.

1. Wash out Generator through Bell neck with bucket or hose pipe (if no water supply is in Generator), till water comes clean through Sludge Cock.
2. Close Sludge Cock (No. 7) and Seal Cock (No. 8).
3. Fill Generator till water runs out at Water Level Cock (No. 9). Make certain that Inner Tank is full, as, if water is run into Seal, it will show at Level Cock before Inner Tank is filled.
4. Close Water Level Cock (No. 9) when water stops running. Put Carbide Chamber (No. 6.) in place and fill to top with Carbide after cleaning Valve and Seating. See that Valve is down properly on Seating. Soft soap washer on cover and screw down with fly bolts as tight as possible with fingers only. Shut Drip Cock (No. 4).

TO PUT INTO ACTION.

1. Lower Hand Wheel slowly. This raises Starting Rod and allows Carbide to drop into water, thus generating Gas and raising dome.
2. Open Drip Cock (No. 4) for a few seconds to allow air or water to escape.
3. Open Cock between Generator and Holder (No 3).
4. Lift Lever Ball Crane (No. 2), and see that Gas passes freely from Generator to Holder.
5. Wash out Generator House and clean down Machines. It is essential that the Plant be kept clean, and all working parts must be constantly lubricated. Open all Drip Cocks on Generator and Holder for a few seconds after Generator has been re-charged.

SHOULD PLANT FREEZE, THAW WITH HOT WATER ONLY.

WM. MOYES & SONS,

ACETYLENE ENGINEERS,

Head Office and Showrooms, 142 WATERLOO STREET, GLASGOW.

Works: CATHCART. Branch Carbide Store, 23 HOPE CRESCENT, EDINBURGH.

8.6.10.
DEFINITIONS

The following word definitions have been used for the purposes of this paper:

Freehold: A property where the owner of the property also owns the land on which it stands.

Leasehold: A property where the occupier of the property does not own the land on which it stands.

Listed: A building that has been placed by the Local Authority on the list of buildings, as being of special Architectural or historic interest.

Automation: the process of automating a lighthouse, after which the lighthouse keepers are removed.

8.6.11.
BIBLIOGRAPHY

Conservation Plan for The Lizard Lighthouse (Prepared by: Frans Nicholas RIBA Chartered Architects & Historic Buildings Consultants)

Trinity House Lighthouse Service - Milestones in Lighthouse Engineering (By Ebbe Almqvist & Kenneth Sutton-Jones. Published by Pharos Marine Ltd/Automatic Power Inc.)

Lighthouses & Maritime Aids of the World (By Kenneth Sutton-Jones. Published by B & T Publications)

9.0

RECORD KEEPING

Lighthouse authorities focus primarily on providing cost-effective aids to navigation services, frequently at the expense of managing their heritage and documenting their records with a view to posterity. As a result, historical documents which are a wealth of information for present and future generations are often overlooked and in some cases lost forever.

The pressures of manning and resourcing are typically an impediment to recording and maintaining archives. The following is intended to form a basis for the development and implementation of a process to appraise, organise and make available documents of historical importance.

9.1. WHAT SHOULD WE DO IF NEW TECHNOLOGY IS INTRODUCED?

This section will help organisations consider two aspects pertinent to the introduction of new technology.

Firstly, new equipment can be added to enhance the lighthouse as a navigational aid, or secondly existing equipment can be replaced with new technology. Both of these situations require a similar approach.

9.1.1.

ENHANCEMENTS TO THE LIGHTHOUSE

- Where practicable, produce digital photographic record of changes being made; at a minimum, produce a paper version;
- Produce an inventory of new equipment that has been installed;
- Preserve original drawings and produce updated drawings;
- Archive all material

9.1.2.

REPLACING EXISTING EQUIPMENT

- Where practicable, produce digital photographic record of changes being made; at a minimum, produce a paper version;
- Produce an inventory of new equipment that has been installed;
- Preserve original drawings and produce updated drawings;
- Archive all material;
- Once equipment is removed, consideration must be given to appropriate storage (refer to Chapter 8: Managing the Consequences of Technical Change).

9.2. WHY SHOULD WE KEEP RECORDS?

This section will help organisations manage record keeping, a legal requirement in some countries.

9.2.1.

HISTORICAL RESEARCH PURPOSES

- To retain an important part of maritime history for future generations;
- To have accurate accounts of events, original designs, equipment, living conditions, historical figures, etc;
- To educate and enhance the awareness of current and future generations;
- To provide reference information in response to public enquiries.

9.2.2.

CONSERVATION

- To retain documents such as log books, drawings, correspondence;
- To have an accurate record of construction materials for renovation/restoration;
- To support heritage organisations in the

designation and protection process.

9.2.3.

MARITIME AUTHORITIES' EXISTING REQUIREMENTS

- For maintenance purposes;
- To learn from past experiences;
- For personnel training;
- For environmental assessment purposes, to establish existence and location of hazardous materials;
- For the preparation and updating of site Health and Safety File;
- For legal issues with regard to design and construction;
- For property title searches in order to confirm boundaries and ownership of the property.

9.2.4.

ALTERNATIVE USE

- For marketing as a tourism product;
- For branding and merchandising;
- To keep historical links with local community;
- To retain or return to the original character of the site;
- To assist maritime authorities in the divestiture process.

9.3. TYPES OF RECORDS

This section will help organisations consider which types of record to retain. The following list is not exhaustive.

- Log books, such as lighthouse keepers' records;
- Visitors' books;
- Audio:
  - Sound recordings of equipment such as fog signals;
  - Oral history recordings;
  - Recordings of radio interviews, news reports.
- Visual media:
  - Video;
  - Photographs;
  - Paintings.
- Correspondence (personal or official);
- Personnel records;
- Drawings and engravings;
- Books, monographs, leaflets (for example: historical, technical, autobiographies, keeper's diary).
- Newspaper clippings;
- Manuals (operations, materials and supplies);
- Standing orders (lighthouse keeper instructions);
- Administrative records (invoices, ledgers);
- Minutes of meetings (strategic decisions).

9.4. HOW AND WHERE DO WE KEEP HISTORICAL RECORDS?

This section will help organisations consider the means and methods of retaining and retrieving long-term records.

9.4.1.

THE LOCATION OF ARCHIVE MATERIAL FOR DIFFERENT COUNTRIES VARIES

- National archives or record office;
- Regional/local archives or record office;
- Maritime authority archives (national and local).
- Museums and libraries;
- Heritage bodies and authorities;
- Private collections;
- Manufacturers;
- Media industry archives (newspapers, television broadcasters).

9.4.2.

FORMAT USED TO KEEP THESE RECORDS

Care must be exercised when deciding which media is most suited to the long-term storage of particular information. Changing hardware and software technology should be monitored to ensure appropriate improvements are utilised.

Original documentation (if it can be properly stored, managed and conserved) is ideal, but to do so can often be demanding in terms of cost, time and space.

Digital scans are very convenient (especially in terms of cost, time and space) but this convenience comes at the expense of long-term file integrity; the popular image format .JPG (for instance) is not lossless and tends towards file degradation and corruption over time. Lossless formats such as .TIFF are preferable, but file size can be significantly large compared to .JPG.

Video files are especially prone to becoming redundant in short periods of time; the VHS format is one example.

File format is one issue to be aware of; file storage is also prone to technological redundancy. CD-ROMs, MiniDiscs and floppy disks are all examples of once-ubiquitous storage devices that are now generally obsolete. External hard disk drives are a relatively safe and sensible option, but this will change as times passes. Please consult archive professionals at your local or national record office for timely advice.

9.5. WHAT ARE THE BEST PRACTICES FOR KEEPING RECORDS?

This section will help organisations consider best practice for keeping long-term records, an important function for any organisation.

- Identify an appropriate secure storage facility with appropriate environmental considerations for the type of data being stored, considering that nation's archival standards if applicable;
- Determine appropriate laws for archiving historical information in your country, taking special care with sensitive personnel records;
- Seek advice from professional archivists;
- During office re-locations pay particular attention to preserving historical data;
- Seek advice before destroying previous methods of storage of information;
- Carefully consider your government record retention policies, as they may not be consistent with preserving historical records;
- As plans are produced electronically and retention dates highlighted, one must pay particular attention to the possibility of losing valuable information;
- Procure or develop an appropriate cataloguing, indexing and retrieval system;
- Consider adjusting your archiving system as technologies for storing data;
- Avoid handling original drawings on a day-to-day basis. Original drawings should be scanned and indexed and the digital copies used to avoid damage to the originals;
- Where available, use International Standards.

9.6. ANNEX A: CHECKLIST

The following provides an aid to check that all points have been considered.

Items to be considered	Applicable? Yes/No	Comment
What should we do if new technology is introduced?		
Record enhancements to the lighthouse		
Record the replacement of existing equipment		
Why should we keep records?		
Assess requirement for keeping records for historical research purposes		
Assess requirement for keeping records for conservation		
Review your maritime authority's existing requirements		
Consider the full range of alternative uses		
Consider types of records		
Decide how to keep your historical records		
Consider appropriate repository for archive material		
Consider appropriate format used to keep records		
Review best practices for keeping records		

10.0

METHODOLOGY FOR EVALUATION

The intent of this chapter is to provide a template for easy reference in evaluating the potential success or failure of a project. Please note that this is not an exhaustive list of questions but should provide a reasonable methodology for assessment.

10.1. PROJECT DESCRIPTION

Project title and description (aim)

Who are the partners directly involved (if any)

Who are the principal stakeholders (interested parties) and were they involved?

Outline of the Agreement

What were the principal challenges in the project?

Did the project have the support of the community, heritage bodies and the maritime administration?

10.2. TECHNICAL MERIT

Technical experts required e.g. architect, historian

What were the infrastructure challenges and how were they addressed (power, water, sewerage, access etc.)?

Were physical alterations made and are they reversible?

10.3. OPERATIONAL CONSIDERATIONS

What were the security concerns in regards to the property and how were they addressed?

Has the original lighthouse estate been altered?

Is the lighthouse still in use as an aid to navigation and what impact has this had on the project?

If the lighthouse is an operational aid to navigation has the project had an impact on this service?

What were the accessibility problems and how were they addressed?

10.4. FINANCIAL OVERVIEW

Was a business case prepared?

Is the project economically viable?

Are running costs allowed for and what are they?

Does liability coverage exist (insurance)?

What is the economic impact on the local community

Were capital funds a major issue, if so how was this overcome?

10.5. HEALTH AND SAFETY

Was there a health and safety risk assessment conducted? What problems were identified and how were they addressed?

Was an environmental impact assessment carried out (including site contamination)? What problems were identified and how were they addressed?

Was an emergency response assessment conducted and a plan prepared?

10.6. CONSERVATION

In the project evaluation what heritage issues were identified?

Were heritage bodies consulted and what their requirements?

Did you have access to all necessary historical documentation such as plans, equipment specifications?

How were the heritage issues addressed?

Was there any impact from alterations?

Was documentation retained related to all alterations?

Has the historical or cultural significance of the site been affected, whether negatively or positively?

What degree of restoration was required?

10.7. CONCLUSION

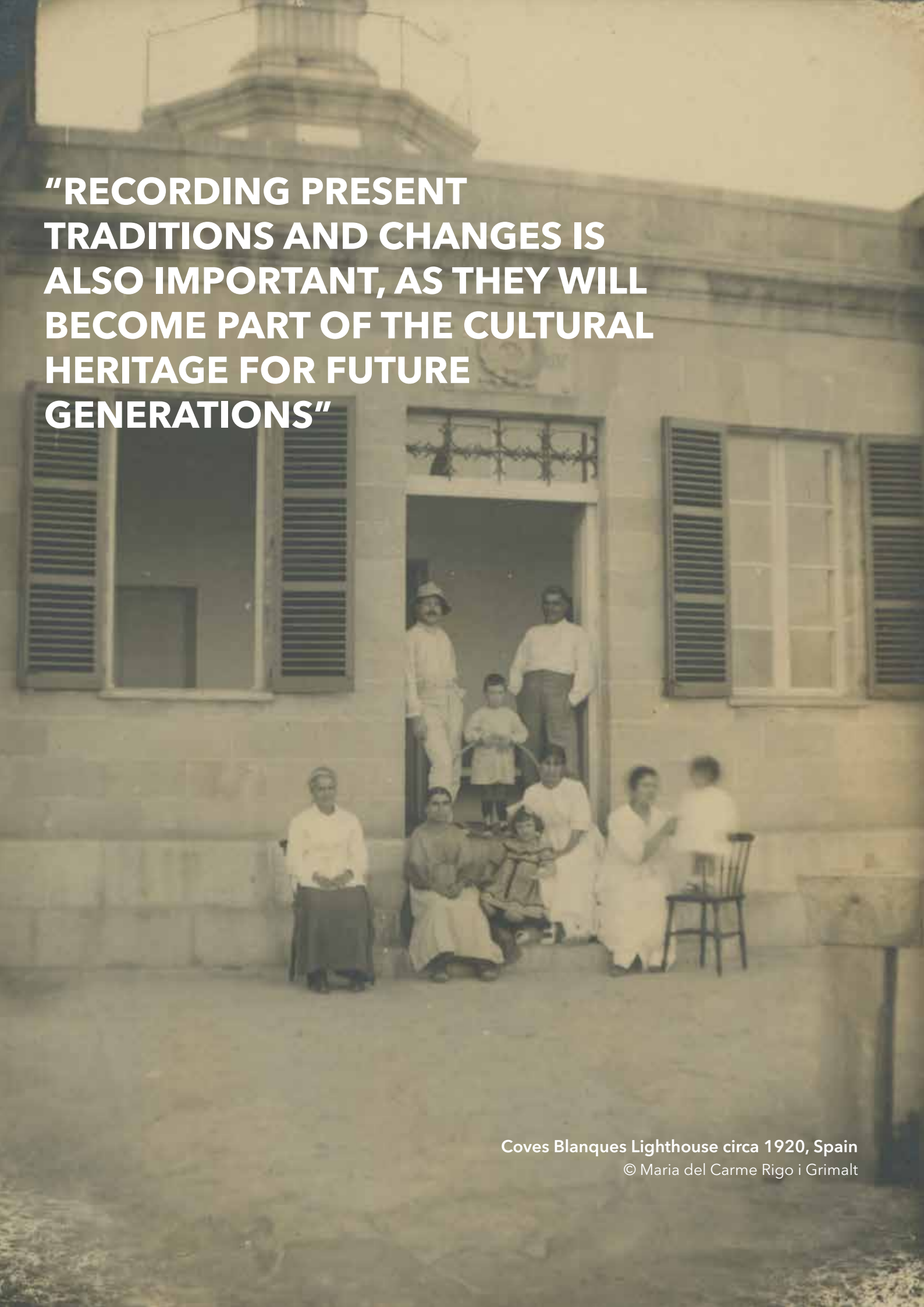
Are there links to other tourism or heritage projects in the area, and if so, what has been the impact?

What were the successes and failures of the project?

What changes could have been made to make the project more successful?

Could problem areas been solved differently?

What are the threats and possible opportunities for the future of this project?



“RECORDING PRESENT TRADITIONS AND CHANGES IS ALSO IMPORTANT, AS THEY WILL BECOME PART OF THE CULTURAL HERITAGE FOR FUTURE GENERATIONS”

Coves Blanques Lighthouse circa 1920, Spain

11.0

DEFINITIONS

The definitions of terms used in this Manual can be found in the International Dictionary of Marine Aids to Navigation (IALA Dictionary) at www.iala-aism.org/wiki/dictionary and were checked as correct at the time of going to print. Where conflict arises, the IALA Dictionary should be considered as the authoritative source of definitions used in IALA documents.

12.0

ACRONYMS

None.


IALA