BS 7913:2013



BSI Standards Publication

# Guide to the conservation of historic buildings

bsi. | IHBC · INSTITUTE · OF · HISTORIC · BUILDING · CONSERVATION

...making excellence a habit.™

# Foreword to BS 7913

The IHBC is delighted to join in partnership with the British Standards Institute (BSI) in the production of this co-branded manual of BS 7913. Its publication widens access to this conservation standard, particularly for IHBC members and their colleagues, and marks the IHBC's successful promotion of cross-sector conservation standards.

BS 7913 helps guide practitioners as they integrate understanding, management and change in a unified process of effective conservation. As such it serves as an accessible standard of good practice for works to older, traditional or valued buildings, settings and, as appropriate, places, all regardless of levels of formal designation, controls or regulation.

Similarly, this standard is for non-specialist users as well as specialist conservation practitioners. Its widespread recognition both as a British Standard and as a practitioner's manual is an especially important consideration today, especially as we see reductions in planning guidance.

Finally, this publication rounds off the IHBC's more recent successful promotion of conservation standards. Following the joint development of a National Occupational Standard (NOS) for conservation in 2012, and linked vocational qualifications in 2013, this joint publication with the BSI completes the infrastructure needed to establish built and historic environment conservation practice as a distinct and universally recognisable specialist discipline.

Mike Brown IHBC
Chair, IHBC

John Edwards IHBC
Lead author, BS 7913

*For more information on the IHBC see www.ihbc.org.uk*

IHBC
· INSTITUTE · OF · HISTORIC ·
BUILDING · CONSERVATION

© The British Standards Institution 2014 

# Contents

Foreword *iv*
0 Introduction *1*
1 Scope *5*
2 Normative references *5*
3 Terms and definitions *6*
4 Heritage values and significance *8*
5 Using significance as a framework for managing the historic environment *10*
6 Significance as part of operational care and other interventions *22*
7 Maintenance *34*
8 Heritage and project management *36*

**Annexes**

Annex A (informative) Conservation accreditation schemes *38*
Annex B (normative) Conservation manuals, logbooks and four/five-yearly inspections *38*

Bibliography *42*

**List of Figures**

Figure 1 – Conservation process *2*
Figure 2 – Magnitude of impact plotted against value *19*

**Summary of pages**

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 44, an inside back cover and a back cover.

# Foreword

## Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31st December 2013. It was prepared by Technical Committee *B/560 Conservation of tangible cultural heritage*. A list of organizations represented on this committee can be obtained on request to its secretary.

## Supersession

This British Standard supersedes BS 7913:1998, which is withdrawn.

## Information about this document

This British Standard does not cover the legislation required prior to undertaking many conservation works.

## Use of this document

As a guide, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification or a code of practice and claims of compliance cannot be made to it.

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

## Presentational conventions

The guidance in this standard is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is "should".

*Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.*

## Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

**Compliance with a British Standard cannot confer immunity from legal obligations.**

# 0 Introduction

## 0.1 General

The immediate objective of building conservation is to secure the protection of built heritage, in the long-term interest of society.

Issues relating to building conservation are often complex and interwoven.

The conservation of historic buildings requires judgement based on an understanding of principles informed by experience and knowledge to be exercised when decisions are made. British Standards that are applicable to newer buildings might be inappropriate.

The decision to conserve historic buildings can be justified on social, cultural, economic and/or environmental grounds, and usually a combination of these. Conflicting pressures often need to be balanced to assist good decision making. Good conservation depends on a sound research evidence base and the use of competent advisors and contractors.

See Figure 1 for a flowchart showing conservation process.

The history of building conservation is summarized in **0.2** to **0.9**.

## 0.2 Vernacular building

When people first began to build they built for themselves, without the aid of specialist builders. What they built was, in the precise meaning of the term, "vernacular" (i.e. native or of the country). The system by which the people of a particular place built was developed empirically over many generations, closely integrated with geology, climate, land use and seasonal patterns.

Even the more refined ways of building were subject to the same local and vernacular influences. This is the basis of what can be termed the architectural geography of the United Kingdom. The local and vernacular materials and construction of buildings contribute to a sense of place.

## 0.3 Architecture as cultural expression

The aim of builders throughout the ages has been to produce buildings which were as well-built as they could be with the materials and skills available. These served the needs of the people who used and occupied them, and their form and decoration were refined as a means of cultural expression. In the first century BCE the Roman architect Vitruvius defined the three essential attributes of architecture as "commodity, firmness and delight". The integration and balancing of function, sound construction, economics and aesthetics remains the objective of all architectural activity. Buildings of all types and periods contain information about the way in which people lived, worked and worshipped, how they built and how they thought and wished to present their own culture and their spiritual values.

**Figure 1 – Conservation process**

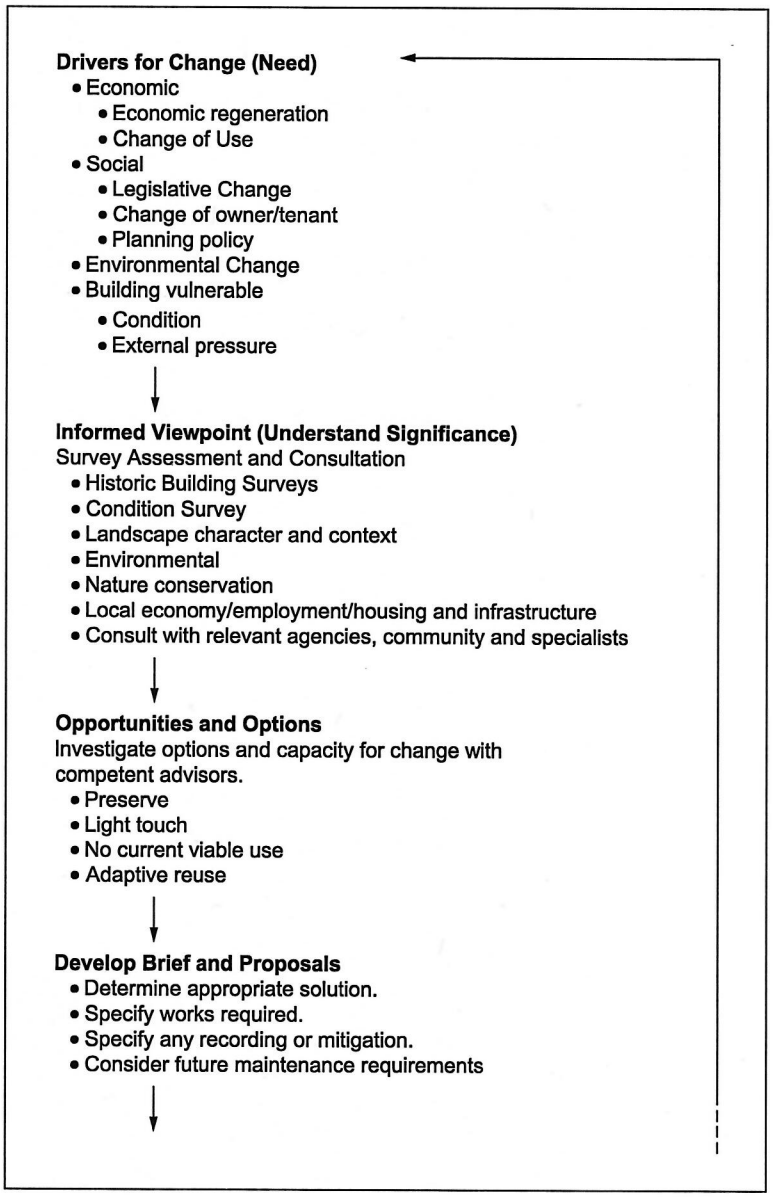
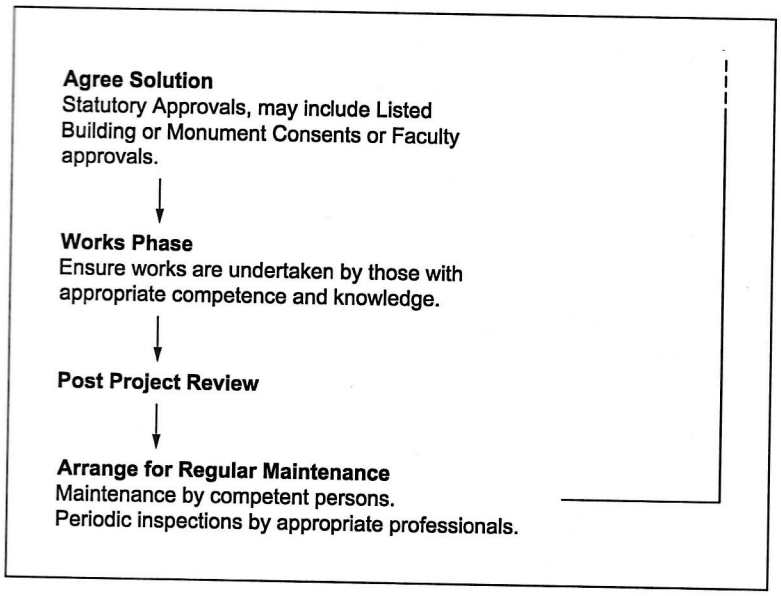


Figure 1 – **Conservation process** *(continued)*




## 0.4 The artisan tradition

With the growth of the trades, building practice advanced steadily and became more standardized and subject to regional, national and international cultural influences. While some rural buildings, particularly in more remote parts of the country, remained self-built in the local tradition (and therefore genuinely vernacular) until the beginning of the twentieth century, most ordinary town, village and estate building in the post-mediaeval period was by carpenters, masons and bricklayers, often with the aid of pattern books, and is therefore termed artisan. The empirical development and refinement of building practice in response to changing needs and circumstances was continued by the trades until the onset of the industrial age. The architecture and the craftsmanship of many of these buildings are of a very high order.

## 0.5 Fine architecture

Societies, communities and powerful people of all periods have used their principal buildings as a means of expressing their authority, sanctity, wealth and/or sophistication. The fine architecture that a society produces is a reflection of its culture and ethos. Although such buildings were commonly built from local materials and by the local trades, they were often designed by people who could be described as architects. The architecture of these buildings tended to be sophisticated, fashionable, and express

national cultural characteristics and often international influences which were representative of the intellectual orientation, political or trading alliances of the time. Fine architecture represents the high culture of the age in which it was created.

## 0.6 The age of industry

The rapid development of Britain's power in the 19th century through a combination of empire and industrialization led to a major increase in the total quantity of building, largely, but not only, in cities. This led to major technical advances in the mechanization of building in traditional materials, through the introduction of Portland cement and the use of iron and steel, particularly in large engineering structures such as bridges and train sheds, but also in the development of framed buildings. Throughout much of this period, however, the artisan building tradition continued. All types of 19th century buildings survive in use throughout the United Kingdom in very large numbers, and make up a substantial part of the fabric of present day towns and cities.

## 0.7 War, modernism and planning

Largely as a consequence of the two world wars, the 20th century has seen development and change at a rate of a different order to that of any previous period. In the course of the century the building trades, ways of building and attitudes to urban development changed substantially.

As the cost of labour and skill increased and the price of energy fell dramatically, builders increasingly used mechanized and industrialized methods based on the rapid assembly of large and small factory-made components and cast-in-situ concrete. Such was the confidence in the new technology, it was believed for a time that in the future all buildings would be replaced by new ones at least once per century. Traditional building methods were rejected, misunderstood or forgotten. Maintenance was superseded by renewal and towns were threatened with wholesale redevelopment. The rapid growth of the architectural conservation movement was in response to this, and became part of a wider environmental movement. Pressure for renewal receded and the desirability of retaining sound buildings, particularly historic buildings, gained wide acceptance. Modern architecture, as that of any other period, evokes the spirit of the age which produced it. As much of it was not designed to last or to be maintained, the conservation of post-war listed buildings presents new technical challenges.

## 0.8 The conservation movement

The conservation movement has its origins in 18th century enlightenment, antiquarianism and romanticism. It developed in the 19th century through The Manifesto for the Society for the Protection of Ancient Buildings [1] written in 1877 by

William Morris, The Ancient Monuments Protection Act 1882 [2] and the founding of the National Trust.

In the 20th century, the consolidation of ruins and the care of ancient sites by the State were developed by HM Office of Works, while accelerating change led to the growth of preservation and amenity societies. After 1945 the listing and legal protection of buildings was established through a succession of Town and Country Planning Acts [3]. This growth of interest in buildings and landscapes of cultural heritage was matched by increasing concern for the natural heritage and pressure to control pollution, ecological damage and resource consumption. Together these make up the modern conservation movement.

### 0.9 Conservation today

International recognition of the importance of building conservation was achieved in 1966 with the publication of the *Venice Charter* by ICOMOS [4], followed in 1981 by the Burra Charter of ICOMOS Australia [5] while the fundamental description of the process was enshrined in the 1993 ICOMOS *Guidelines for education and training in the conservation of monuments, ensembles and sites* [6]. This and subsequent standards on structural intervention on historic buildings remain the common standard for built and historic conservation, to which Great Britain and Northern Ireland have added their own conservation principles documents [7, 8].

## 1 Scope

This British Standard describes best practice in the management and treatment of historic buildings. It is applicable to historic buildings with and without statutory protection. It is not applicable to below ground archaeology or any other type of heritage asset such as movable objects or vehicles.

This British Standard is intended for those who own, use, occupy and manage historic buildings, the professional team's contractors and others employed to work on their behalf, and can be used by decision makers and funders. It is intended to provide building owners, managers, archaeologists, architects, engineers, surveyors, contractors, conservators, planners, conservation officers and local authority building control officers with general background information on the principles of the conservation of historic buildings and sites, when setting conservation policy, management strategy and procedures.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For

undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN 15898, *Conservation of cultural property – Main general terms and definitions*

# 3 Terms and definitions

For the purposes of this British Standard, the terms and definitions given in BS EN 15898 and the following apply.

## 3.1 archaeology

study and interpretation of the past, based on uncovering, retrieving, recording and interpreting information from physical evidence

## 3.2 conservation area

area of special architectural or historic interest, the character or appearance of which is desirable to preserve or enhance

## 3.3 conservation management plan

strategic document that defines what is significant about an individual heritage asset, establishes management principles and informs the approach to future work

## 3.4 conversion

alteration, the object of which is a change of use of a building or artefact

## 3.5 competent person

person with expertise and the ability to undertake work in an appropriate manner

*NOTE Users are advised to consider the desirability of accreditation or competency schemes for craft persons. See Annex A for examples of such schemes.*

## 3.6 evidential value

potential of a place to yield evidence about the past

## 3.7 fabric

material of which a historic building is made

## 3.8 heritage asset

building, monument, site, place, area or landscape that has significance

### 3.9 heritage impact assessment
practical assessment of the magnitude of the impact from proposed change on the significance of a heritage asset or historic building

### 3.10 historic building
building that has significance

*NOTE This is not related to age or statutory protection.*

### 3.11 intervention
action that has a physical or spatial impact on a historic building or its setting

### 3.12 management
planning, organizing, resourcing, leading or directing

### 3.13 patina
natural or manmade character derived from the ageing process

*NOTE For example the weathering of stone or the verdigris on bronze.*

### 3.14 preservation
state of survival of a historic building

### 3.15 record
description, depiction and analysis of a place in earlier condition or use

*NOTE This can include documents and photographs, etc.*

### 3.16 setting
surroundings of a historic building

### 3.17 strategic plan
plan that defines:

a) the position of the management organization at the start of the plan period;
b) the position aimed for at the end of the plan period;
c) what needs to be measured to ascertain whether or not it has achieved b); and
d) the resources required to get to defined positions

### 3.18 sustainability
ability to meet present needs without compromising ability to meet future needs

# 4 Heritage values and significance

## 4.1 Use of significance in the management of the historic environment

Significance represents a public interest, and the planning system, and the policy and legislation which support it reflect this.

*NOTE Historic buildings might be subject to statutory legal protection. Acceptable practice might be subject to statutory control.*

Research and appraisal into the heritage values and significance of the historic building should be carried out to ensure that decisions resulting in change are informed by a thorough understanding of them. The level of the research appropriate is dependent on the nature and history of the historic building, (for example, any statutory protection) and any proposed works.

Understanding the significance of a historic building enables effective decision making about its future.

## 4.2 Values contributing to significance

Heritage has cultural, social, economic and environmental values.

The attributes that combine to define the significance of a historic building can relate to its physical properties or to its context.

There are many different ways in which heritage values can be assessed. Some heritage bodies of the United Kingdom have suggested that these fall into the following groups:

a) *aesthetic value*, derived from ways in which people draw sensory and intellectual stimulation from a place;

   *NOTE 1 This encompasses things purposely designed for that effect and those that are not (e.g. the picturesque, the sublime).*

b) *communal value*, derived from the meanings of a place for people who relate to it in different ways, associations with social groups and individuals;

   *NOTE 2 This changes over time.*

c) *evidential value*, derived from the potential of a place to yield evidence about the past (e.g. archaeology); and

d) *historical value*, derived from the ability of a place to demonstrate or illustrate an aspect of the past or association with historic figure or event.

   *NOTE 3 For example a battlefield or memorial.*

An alternative approach is to think of a historic building's significance as comprising individual heritage values from a list that might include:

1) architectural, technological or built fabric value;
2) townscape characteristics;
3) spatial characteristics;

4) archaeological value;
5) artistic value;
6) economic value;
7) educational value;
8) recreational value;
9) social or communal value;
10) cultural value;
11) religious value;
12) spiritual value;
13) ecological value;
14) environmental value;
15) commemorative value;
16) inspirational value;
17) identity or belonging;
18) national pride;
19) symbolic or iconic value;
20) associational value;
21) panoramic value;
22) scenic value;
23) aesthetic value;
24) material value; and
25) technological value.

*NOTE 4 This list is not exhaustive, is in no particular order and is provided as guidance only.*

*NOTE 5 The significance of historic buildings can also be influenced by their context or their value as part of larger collections or assemblages.*

## 4.3 The assessment of significance

A wide range of factors can contribute to the significance of a historic building. As well as physical components, significance includes factors such as immediate and wider setting, use and associations (e.g. with a particular event, family, community, or artist and those involved in design and construction). The relative importance of these varies.

Examples of the characteristics that can be taken into account when assessing significance are:

a) attributes relating to the physical and spatial properties of a historic building (aesthetic, historic and evidential value):
   1) the original design of the historic building and how it has changed over time, including material patina;
   2) the materials used in construction; and

3) the presence of archaeological information in remains above and below ground (evidential value);

b) characteristics relating to the context of the historic building;
   1) how a historic building relates to its surroundings (e.g. other buildings, townscape or the wider environment); and
   2) how a historic building relates to similar buildings;

c) characteristics relating to wider associations – (communal value/ associative value):
   1) the use of the historic building over time and its connections with a significant person, family or community;
   2) associations with historical, scientific or artistic events or works (e.g. literature, paintings); and
   3) social significance, and the historical, cultural, economic, political and social factors that influenced the design.

### 4.4 Understanding heritage assets, historic buildings, values and significance

Understanding the contribution of a particular historic building to the wider historic environment allows significance to be taken into account when making decisions. How the significance of a historic building should be conserved is site specific. Those responsible for the curation of a historic building can affect its continued benefit through actions to conserve or manage any changes.

A thorough understanding of the significance of the historic building is important prior to reconciling work proposals with the existing built fabric and archaeological resource. This should be done by the avoidance of harm where possible. Where harm is unavoidable, a record of what was there should be created.

## 5 Using significance as a framework for managing the historic environment

### 5.1 Strategic and operational management in asset management

The application of asset management methodologies should be proportionate to the nature and history of the historic building, its ownership, use, the need for any repairs and any proposed works.

The management of a historic building occurs at two distinct levels, strategic management and day-to-day operational management (in practice, these can be given different labels).

Strategic management provides overall direction to the management operation, setting the vision, defining the mission statement, establishing values, goals and targets, planning strategy, delegating responsibilities, etc. It can be seen as involving three questions.

a) Where are we now?
b) Where do we want to be?
c) How do we get there?

Day-to-day operational management involves the effective organization and coordination of services and resources to deliver the vision and strategy, liaising with those whose input is required (this could include the general public and contractors), and anticipating and resolving service delivery issues. Operational managers plan and implement change in line with the strategic direction of the organization.

Recognition of the historic building's significance should be central to strategic and operational historic building management. At both these levels significance should influence decision making.

## 5.2 Heritage management principles

Historic buildings should be maintained for the benefit and enjoyment of current and future generations. The historic building's significance should be the basis of the management and planning of its continued well-being. Its specific value and attributes, its setting, and inter-relationships should be taken into account in management planning.

Where management planning involves change to the fabric or use of a historic building or its setting, the potential impact of that change on its significance should be identified and quantified. Impacts from change can be direct (i.e. affecting the fabric, attributes or character of the historic building), or indirect, (i.e. altering spatial qualities or relationships within its setting). Change that protects or reveals the historic building's significance should be encouraged. Change that could cause harm to the significance of the historic building should be avoided wherever possible.

The impact of any proposed changed should be justified. The approach taken to that justification should be proportionate to the nature and significance of the historic building and the scale and impact of the proposed works. For example, relatively minor alterations to a modest house might only need a simple statement to provide sufficient justification, while large scale interventions affecting a complex site might need a detailed conservation management plan. The information provided should be sufficient to ensure that the likely impact to the historic building can be assessed.

Work proposals should be based on an appropriate level of research into the historic building in order to understand its significance, structure, fabric, design, layout, services and other parameters. Where works are proposed to respond to or rectify problems with historic built fabric, the cause of the problems should be determined and the available range of possible solutions should be identified. Solutions should be designed and executed such that they cause minimal harm to the significance of the historic building and avoid unnecessary loss of historic fabric. Generally, this entails the use of

materials for repairs that match existing building closely, taking into account relevant issues of performance, durability and longevity. However occasionally alternative approaches might be justified.

The principle of minimum intervention (i.e. retention of as much fabric as possible of a building when repair or other intervention is required) is important. All interventions should be recorded to facilitate future understanding. Information gathered about the historic building during the planning and implementation of change should be recorded and made available for use by others. Conservation, repair and maintenance of historic buildings should be managed and carried out by competent persons. Typically this involves the application of traditional skills and materials rather than modern techniques.

## 5.3 Other influences on the management of heritage assets

### 5.3.1 Sustainability

Sustainable use of heritage assets is influenced by national and local economies, community interest and involvement, opportunities to benefit educational uses, health and well-being activities and facilities.

When a historic building becomes disused, under-utilized or where a change of use is considered for other reasons, a viable economic use might be required to allow for the conservation of the building. Any changes should be based on research to ensure a thorough understanding of significance. Economic sustainability should be balanced with other issues such as impact on significance. The sustainability of historic buildings is likely to be improved if they have a use that provides an income, (e.g. occupancy that provides an income, tourism etc.). Retaining and re-using existing buildings generally has a lower environment impact than replacing buildings in terms of embodied energy.

The most effective way of ensuring energy efficiency and sustainability is to keep historic buildings in good repair so that they last as long as possible, do not need replacement and do not suffer from avoidable decay that would require energy and carbon to rectify. They should provide occupancy in an efficient manner, involving minimal production of carbon and use of energy without harming significance or the physical performance of the historic fabric. Using natural ventilation and light, and proper temperature and humidity control for individual rooms are ways of minimizing energy usage that respect the building's material characteristics.

Keeping appropriate records of energy use can enable the comparative performance of the building and any changes to be evaluated.

Elements such as walls can be over a third less energy efficient if damp. Some energy efficient measures can have an adverse

effect on sustainability. The actual energy efficiency of historic buildings and their potential energy efficiency with the addition of energy efficient measures should be taken in account at the outset (see **6.3**). The need for energy efficiency and low carbon might also influence the selection of materials and work methods as they can impact on thermal performance and weather resistance. Building materials and products should be sourced and procured in a sustainable manner.

The historic building should be regularly inspected (see **6.2**) and maintained (see **6.7** and Clause **7**). This is important to avoid damage from blocked drainage and ventilation. Works identified from inspections should be managed in a sustainable manner in a reasonable time frame.

Sustainable management of historic buildings includes ongoing risk analysis for the hazards of fire and flood and to monitor measures put in place (e.g. warning or active systems) for the provision, checking and use of equipment and services. Many historic buildings with potentially vulnerable elements and contents that are highly significant require frequent environmental control and monitoring systems in order to provide optimum environmental conditions and aid the management and conservation of the historic building. The data from any monitoring systems should be regularly collected and analysed. Where the data analysis indicates further conservation works or a change in environmental conditions is required, these should be implemented in a timely fashion.

When the use of a historic building is changed it can result in changes to internal environmental conditions that have an adverse effect. An analysis on this should be carried out. This could include comparing current environmental with predicted environmental conditions.

New uses that involve an increased use of energy should be avoided where possible. The heritage bodies of the United Kingdom provide guidance on energy efficiency [9,10]. This guidance has a holistic incremental approach that promotes repair and alteration rather than replacement of elements such as windows. Change of use can also affect the sustainability of the structure and floor loading and this should be taken into account.

Research commissioned by the government and undertaken by the NHTG has shown that there are declining skills in the heritage sector and the age of the workforce is increasing [11]. This could lead to an inadequate level of labour and skill in traditional craft trades.

### 5.3.2 Materials

The correct choice of materials for conservation works is important for historic buildings. Where possible, existing materials should be investigated and tested so that good performance and aesthetic matches can be achieved. In cases where the existing material source is not available, re-use of suitable materials from salvage might give better results than newly formed materials. However sources should be verified to ensure this does not cause

degradation of other historic buildings and to ensure that repairs are identifiable. In cases where materials are vulnerable to theft or damage or where previous details have failed, substitute materials might be appropriate.

Protective measures should be taken for high value materials in areas where there is a high risk of theft or vandalism.

## 5.4 Strategic plans

Strategic plans vary significantly in structure and content depending upon the nature of the organization that is involved.

A strategic plan should define the following:

a) owners and stakeholders;

b) the position of the management organization at the commencement of the plan period;

c) the position aimed for by the end of the plan period;

d) what needs to be measured to ascertain whether or not it has reached this position; and

e) the changes and resources required to get from the starting point to specified positions proficiently.

The strategic plan should drive all the organization's operational plans by articulating its basic concepts of vision, mission, goals, objectives and activities.

At one level, the strategic plan is about the management organization and its core activities, not about the historic buildings in its care. However, significance can shape the strategic goals that an organization sets for itself within a plan. It might also impact markedly upon the timescales within which strategic changes are expected to be delivered, influence the skills that the organization needs to have, the nature of key stakeholders who need to be engaged and involved and the type of performance measures against which success is measured.

It might be advisable to appoint a heritage champion within senior management to ensure that conservation is taken into account when planning the onward strategic direction of the organization.

Stakeholders should be consulted when preparing strategic and operational plans. These can include the following.

1) Parties, bodies and individuals with an interest in the strategic direction and well-being of the management organization.

2) Those with an interest in the well-being of resources controlled by the organization, especially those who might have an impact on its ability to deliver the strategic plan.

3) Other individuals and groups holding information about the organization's assets that is critical to shaping new policy.

Generally, significance influences 2) and 3).

## 5.5 Conservation management plans

A conservation management plan (also known as conservation plan, heritage management plan, landscape management plan, collections management plan) should be created on the principle that a historic building cannot be protected through management without a thorough understanding of what it is that is important and why.

It should be a high level strategic document that defines what is significant about an individual historic building or group, series or portfolio of heritage assets. It should present coherent management policies with the aim of ensuring that significance is retained during the plan period, taking in account the strategic vision and direction of the management organization.

*NOTE It can be limited to this, although increasingly, hybrid conservation management plans are being produced that integrate strategic and operational management issues and requirements for the plan period in a single document. This can have many benefits for the management organization.*

Conservation management plans can be used for individual historic buildings, complete estates (including those of very mixed heritage asset content), and for historic areas exhibiting multiple property ownership (see also **5.6**). They can be an important document for strategic and day to day management of the historic building, estate or area, as well as providing a means for sustainable change.

Conservation management plans should be created by following the steps below.

a) Understand the heritage assets – What historic buildings do we have?

b) Assess and articulate their significance – Why are they important?

c) Define issues, risks and vulnerabilities that may potentially affect that significance – Who are they important to?

d) Establish appropriate conservation management policies to address the issues, risks and vulnerabilities that have been identified – How could the historic buildings and their significance be harmed and any impact mitigated?

A conservation management plan should, as a minimum, deliver a thorough understanding of:

1) the historic buildings and their settings, and their contribution to the significance of the asset and any group value of any associated assets;

2) the management organization and the availability of resources at the time of plan preparation;

3) the nature and distribution of its primary assets (i.e. how many historic buildings are in its care; do they form a majority or minority of its asset portfolio; do they lie on a single estate or are they dispersed?); and

4) the organization's and the historic building's stakeholders.

The conservation management plan should articulate the significance of the historic building(s) in a manner that can be extracted for use in other management documents. This should be a succinct standalone summary comprising a brief description of the historic building(s), an identification of their heritage values, and a list of their principal character-defining elements.

The assessment of significance should be wide ranging; all heritage values should be assessed within the plan. Various value systems have been published. Some comprise a long list of individual values, while others group values into categories such as evidential or aesthetic value. Whatever approach is chosen, the assessment should be comprehensive, balanced, and objective.

The assessment of significance should be a comparative exercise, relating the component heritage values of the historic building to each other (to enable prioritization of management action and funding, if necessary) and to external comparators to develop an understanding of the historic building's relative value compared to others. For this reason, the assessment of individual heritage values and overall significance within the conservation management plan should be graded hierarchically using levels defined in the plan. This hierarchy may be tailor-made for the plan, although there are a number of published value hierarchies available (e.g. *Design Manual for Roads and Bridges* [12]).

Wide ranging consultation and engagement should take place in preparing the conservation management plan, as the same historic building can be valued by different groups and individuals for different reasons. This should happen throughout the plan preparation process. For similar reasons, assessments of significance should be wide-ranging and driven by diverse professional interests. Conservation management policies derived from an imbalanced plan preparation process can result in bad management decisions, potentially causing harm to the historic building and its significance.

A conservation plan should include, preferably at the beginning, a clear explanation of how it is to be used so that it influences day-to-day management decision making.

What is valued about historic buildings often changes over time. This can be the consequence of social, political or other external change, causing attitudes to alter. Management organizations and their priorities and objectives also change. For this reason, conservation management plans should be monitored regularly and reviewed formally on a cyclical basis. The timing of these depends upon the organization and circumstance but it is unlikely that conservation management policies in an existing plan would all remain appropriate for more than one of an organization's strategic planning periods. Therefore, some measure of review might be required approximately every five years. The conservation management plan should define the intended period of its validity and define actions for its monitoring, review and amendment.

## 5.6 Conservation and historic area appraisals and management plans

### 5.6.1 General

A historic area appraisal should focus on both the historic buildings and the character of the area in which they are situated, including public areas and green spaces between the buildings.

Area-based assessments may be used for any historic area of potential significance (including urban or rural, designated or not, including conservation areas, registered parks and gardens). They often involve numerous properties in separate ownerships. They apply the same principles of understanding, assessment of significance and risk as other conservation planning tools. Management plans should identify policies for the future of the area.

The scope of a historic area appraisal should include:

a) an account of its evolution and development;
b) the surrounding landscape which affects the wider setting of the area;
c) the plan and layout of the area;
d) the character of the area, which might have a general coherent character which is the reason for the study and a number of character areas;
e) views and sight lines; and
f) historic buildings, sites of archaeological interest, green spaces, and their settings.

A multi-disciplinary approach should be used to assess all the relevant values in the area. For instance, the assessment of historic parks and gardens requires different skill sets than for the assessment of mid 20th century suburbs. However all assessments use a mixture of examining the physical environment and using archival and map-based resources.

The most effective management plans are prepared as part of a staged/phased process with the historic area assessment.

### 5.6.2 Consultation

A wide range of bodies and stakeholders should be consulted. These might include:

a) owners and occupiers;
b) local and other statutory authorities;
c) service and utilities providers;
d) national agencies and interest groups with responsibility for the historic and natural environments; amenity societies; and
e) local interest groups (such as civic societies and wildlife trusts), local businesses and residents.

The consultation should involve regular engagement with the relevant parties from an early time, through meetings and publicity in the local press and the internet.

### 5.6.3 Starting the project

The project should start with an initial scoping assessment by competent persons. This is a desk-based assessment using historic environment records and other resources to identify archaeological sites, designated heritage assets, historic buildings and other available data held nationally or locally.

The scoping assessment should produce an understanding the context of the area. It could, for example identify a mediaeval core with 17th and 18th century alterations. Larger centres tend to see distinct additions of later periods from the 18th to the 20th century, while in smaller centres the 18th and 19th centuries are likely to be represented by more limited additions and changes, alterations and amalgamations of plots.

### 5.6.4 Site-based work

Site workers should be provided with any equipment and resources needed and they should undertake research to ensure their survey is well informed.

The fieldwork should aim to identify different character areas within the wider area, and analyse these in terms of the individual units, and their sequence of planning and development.

It should:

a) establish dates of construction and alteration for buildings and other components of the landscape;

b) identify the uses of buildings, past and present;

c) identify the development of building types through their forms, typologies and construction methods;

d) understand the social make-up of the area and how this has changed dynamically over time. Household size, structure and occupations can help in this analysis; and

e) assess the condition of the buildings and the other components of the area.

### 5.6.5 Evaluation

The magnitude of impact of change should be assessed in relation to the significance and value of the historic building. The magnitude of impact can range from a neutral impact where the value is low or negligible and there is no change, to very large where the value is very high and the impact is major.

Figure 2 shows an example of how magnitude of impact can be plotted against value. Other similar matrices can also be used.

**Figure 2 – Magnitude of impact plotted against value**

| VALUE | | MAGNITUDE OF IMPACT | | | | |
|---|---|---|---|---|---|---|
| | | No change | Negligible | Minor | Moderate | Major |
| Very High | | Neutral | Slight | Moderete/ Large | Large/Very Large | Very Large |
| High | | Neutral | Slight | Slight/ Moderete | Moderete/ Large | Large/Very Large |
| Medium | | Neutral | Neutral/ Slight | Slight | Moderete | Moderete/ Large |
| Low | | Neutral | Neutral/ Slight | Neutral/ Slight | Slight | Slight/ Moderete |
| Negligible | | Neutral | Neutral | Neutral/ Slight | Neutral/ Slight | Slight |

### 5.6.6 Outputs

Area based assessments should take the form of a written report and map-based and graphic presentations. Geographical information systems (GIS) can aid the production of graphic information, which might include:

a) a map showing the area in its wider setting (e.g. in a larger settlement, or in the context of a rural landscape hinterland);

b) a map that demonstrates the area's historical development and identifies places or buildings with particular historical associations;

c) a map illustrating current uses, e.g. related to different historic building types (residential, commercial, industrial);

d) a townscape analysis map showing, spatial issues, e.g. important views into and out of the conservation area, landmarks, and open or green spaces; or temporal issues, such as the extent to which pre-urban landscape features (e.g. the lines of former field boundaries) survive in the current townscape; and

e) a map showing designated and non-designated historic building. Locally this might include;

   1) listed buildings and other buildings and spaces which contribute to the character of the area;

   2) photographic images or drawings of buildings and characteristic local details.

### 5.6.7 Management strategy

The proposed management strategy should be discussed with all stakeholders as an ongoing process.

The management strategy may include the following.

a) Guidance on the application of planning policy, whether local or national, on new development in historic contexts, alterations and additions to historic buildings, demolition. The guidance should relate to local planning policies, including any proposals for special planning measures.

b) Assessment of the resources needed to sustain the historic environment in the area concerned.

c) Procedures to ensure consistent decision-making, based on the published policies and guidance.

d) An enforcement strategy to address unauthorized development (see *Enforcement Concordat* [13] for guidance on best practice).

e) Policies to secure the repair and appropriate use of buildings at risk in the area.

f) Proposals for developing an economic development and regeneration strategy for the area, including grant-aid for the repair and restoration of architectural features to buildings.

g) Strategies for the management and protection of trees and green spaces and guidance on the need for an assessment of the area's ecology/bio-diversity value.

h) Strategies for maintaining and improving public spaces and urban design, including transport networks.

Procedures should be in place for updating and monitoring the plan. This should include the monitoring of changes in the area, changes in government law and policy, with the provision for updating the management policies.

## 5.7 The process of planning major change affecting historic buildings

*COMMENTARY ON **5.7***

*See **5.4** for guidance on the analysis and assessment of the historic environment and the development of management policies.*

The process of consultation is particularly important with projects involving major change.

Major projects require a wide range of skills and resources for planning and implementation. A planning policy framework should be developed at the beginning of the project with clear statements regarding the heritage outputs of the scheme.

Typically, those involved in larger schemes can include:

a) owners;
b) occupiers;
c) users
d) developers;
e) professional advisors;
f) funders;
g) local authorities;
h) national agencies; and
i) the local/wider community.

*NOTE This list is not exhaustive.*

The first stage is to prepare an options appraisal or feasibility study that looks at all the possible viable uses of the historic building. The uses should be taken into account and professional input from competent persons should be sought to cost and value the options. The options should be assessed on the basis of impact on the historic environment, public benefit and financial viability. A business plan should be developed which demonstrates how the running costs of the project are to be covered demonstrating the sustainability of the scheme/change. Funding packages should be planned well in advance, to demonstrate to decision-makers that the project is financially viable.

## 5.8 The role of significance within place shaping and utilization of local distinctiveness

Significance should be understood to reduce the risk of losing or compromising components of the site which are of value. A holistic approach should be undertaken to ensure that the sense of place and local identity is maintained.

Proposals for new work should take the significance of the historic building into account. However there should not always be a deferential approach to heritage. Design should be of high quality, using high quality materials.

Design should balance the scale, proportion, massing and materials of new elements with the historic elements. Designs may take reference from existing historic elements, be modern and contemporary, or both. There are a variety of ways in which a design can respond to the site.

Local distinctiveness should be encouraged and enhanced by the use of local materials. They may be used in a traditional contemporary manner to distinguish new work from old.

### 5.9 Heritage impact assessments

The purpose of heritage impact assessments (HIAs) is to gain an understanding of the effect of developments and changes on the historic asset, and how the impact of change might be mitigated.

HIAs can be carried out at various levels of scale and complexity, from the effects of building works on a small structure to the effects of major development in a world heritage site.

HIAs should identify the significance of the element concerned on the relative scale of values, the nature of the proposed change, an assessment of whether the change needs to be mitigated and if so how this can be achieved. The mitigation measures should be justified on the basis of the heritage asset's significance.

## 6 Significance as part of operational care and other interventions

### 6.1 Asset management

When managing historic buildings, significance should be taken into account at every stage from the business strategy of the organization that owns or occupies the historic building to physical work activities.

Asset management is the process by which property assets are managed so that they support business delivery of the organization that owns or occupy them. The asset management strategy identifies how this is to be done and the asset management plan puts this into practice.

Broadly speaking, asset management plans include corporate responsibilities of the business and operational needs. However, when they are for historic buildings there are also heritage responsibilities which should ideally be incorporated into a conservation management plan.

The asset management programme is produced in order to implement the asset management plan. This should be updated throughout the process and cover property management (from the individual historic building to the whole estate), operational projects, inspections and maintenance. It should also determine priorities (e.g. capital projects against maintenance). It is a long term activity ranging from three to more than ten years. The significance of the historic building is integrated via the heritage management processes.

Periodic inspection (see **6.2** and Annex B) is an important part of the asset management programme as from this, priorities can be determined and forward work plans produced. Forward work plans should comprise maintenance and projects.

## 6.2 Condition surveys and inspections

Surveys and inspections can be made on a planned or unplanned basis for individual elements, components or areas or of an entire historic building. Unplanned surveys and inspections can be as a result of a reported problem or defect. It is best practice to undertake planned inspections and surveys at intervals of four years or five years, though they might be required at other intervals in order to comply with legal or insurance requirements. Programmed surveys and inspections provide a basis on which to monitor condition, help to determine priorities and programme work which is an essential part of properly managing historic buildings (see **6.1**).

Condition surveys on historic buildings should be performed by competent persons with knowledge of traditional materials, construction techniques and decay processes. Larger and more complex structures surveys extended across various fields require interdisciplinary cooperation.

*NOTE Accreditation schemes exist for professionals of many disciplines. See Annex A for further guidance.*

Surveys and inspections should involve reference to a site plan and other suitable templates to reference locations, areas and components. Photographs and drawings may be included, and these should be annotated with reference points and areas consistent with the written and graphic data. The process involves inspection with recording of a narrative, sometimes with detailed analysis and identification of defects and the related causes (see **6.3**) to determine remedial works and priority timescales, measuring and quantifying works and estimating costs in a report and work schedules. There should be a consistent and logical process for the inspection, recording and reporting (see Annex B for further information).

Surveys and inspections can conclude with the need for more detailed analysis, often termed "targeted specialist investigations". Examples include architectural paint and plaster analysis, timber decay assessment, structural movement monitoring and environmental monitoring for dampness and humidity. Targeted specialist investigations usually go beyond a visual inspection and can involve destructive and non-destructive equipment and processes, involving data collection and assessment over a period in time. The survey and inspection findings can lead to a reconsideration of the ongoing use of a historic building and the inherent effects on the condition of the historic building.

For further information, see BS EN 16096.

## 6.3 Assessments of performance and pathology

### 6.3.1 General

A wide range of problems and defects are encountered in conservation work. A full understanding of the constituent components/materials and the origin of the problem is needed

when addressing these. Considerable resources can be expended in implementing measures that address the symptoms of a problem and not its cause, which can incur recurring costs. This could give a perception that older buildings come with a high maintenance cost and are inherently defective. Understanding the pathology of historic buildings, and implementing appropriate remedial measures can ensure historic buildings of any age can remain in good condition and fully usable.

The majority of historic buildings, particularly those built before 1919, were constructed from materials assembled using techniques which were well understood at the time. Knowledge of the pathology of materials used and the agents of decay should be sought so that corrective, preventative and remedial measures can be taken that allow the retention of original historic fabric and ensure its longevity.

### 6.3.2 Core principles and dynamics

Pathology is broader than the decay of materials. It also encompasses the way the components interact and, how the spaces are used. This is especially important in ventilation, where chimney flues, sub floor vents and cupolas contribute to a passively managed environment. Disruptions to this environment, and their potential consequences should be identified. Remedial actions should identify innovative solutions if the original elements or systems cannot be reintegrated.

Some decorative features are also functional, for example oversailing eaves, string courses and hood mouldings. Reinstatement of such features can fulfil a repair need.

### 6.3.3 External environment

Variety in temperature and humidity ranges has an impact on the durability and performance of building materials. A single site can have distinct micro climates as a result of topography and orientation. However, most parts of the UK experience a mild maritime climate so the issues associated with external conditions are similar, although they differ in extent (e.g. the western parts of Great Britain tend to be wetter and windier than the eastern parts).

Climate change can also have an impact on buildings due to differences in rainfall and wind direction. Examples of problems this can cause are:

a) inadequate drainage and rainwater goods due to flash flooding;
b) poor performance of lightning conductors;
c) settlement;
d) changes to water table;
e) freeze-thaw cycle;
f) excessive dampness; and
g) excessive drying out.

Buildings can be affected by atmospheric pollution from particle deposits or chemical reactions. Measures should be taken to ascertain any possible adverse effects of pollution and determine appropriate mitigation. Some buildings aquire a patina over time which contributes to the significance of the building and it can be harmful to remove this.

The full monitoring and understanding of these variables is essential to understand some environments. In other cases it is useful in understanding usage patterns and effects on fabric. Prior to monitoring, defects should be eliminated and the environmental variables should be researched.

In some cases defects are caused by a series of harmless alterations that are damaging in combination.

### 6.3.4 Extent and scope

Pathology is the identification of what needs to be left alone, or what needs to be undone, to retain the integrity of a historic building. It can allow limited resources to be directed to where the causes of defects are. Investigative works should be carried out to reduce the need to use contingency sums to allow for repair of inaccessible items.

### 6.3.5 Investigative techniques and equipment

Investigative equipment is required to understand the built fabric and its condition. The use of equipment should be proportionate to the information that is required and the circumstances – the more detailed analysis tends to form part of targeted specialist investigations. Some equipment is used for the undertaking of physical tests at a particular point in time and other equipment can be used to monitor a buildings condition over a period of time. Equipment should be used only by competent persons as misuse or misinterpretation of data can lead to incorrect conclusions.

### 6.3.6 Common defects and approaches to assessment

*COMMENTARY ON **6.3.6***

*Competent persons might be required to assess specific issues such as those in **6.3.6.1** to **6.3.6.4**.*

#### 6.3.6.1 Structural movement

Structural defects, such as cracking through masonry or bowing of roof finishes, should be investigated to ascertain whether they are likely to be due to a recent incident, an evolving situation or largely settlement from the past. Competent persons should examine the historic building and take account of the original design parameters in considering options for support and monitoring if required. Where there is evidence of cracking or deformation to interior materials and finishes, the source of the problem should be investigated to determine the cause.

#### 6.3.6.2 Water and moisture ingress

Dampness should be fully investigated to identify its cause(s) and specify a solution.

Where there is evidence of water ingress the source should be identified as soon as possible. Actions to stop or divert the water source should be taken before repair of damaged materials and finishes, for example a broken or decayed gutter should be repaired before repairs to the internal finishes are carried out, or adequate land drainage should be provided before an entranceway is altered. Sealing the built fabric at one point can lead to damage elsewhere so advice from competent persons should be sought, particularly where modern treatments would change the nature of the fabric.

Where the source might be underground, testing for mains water supply and pollution and salts in the external environment might be desirable.

Where there is evidence of moisture in the fabric of the building, the internal environment should also be examined for possible sources of condensate and appropriate ventilation measures should be taken. Condensation can often be due to the use of the building or actions of occupiers.

Moisture increases the risk of fungal and insect attack, see **6.3.6.3** and **6.3.6.4**.

#### 6.3.6.3 Fungal attack

The type and extent of fungal attack should be identified, and all actual and potential sources of moisture should be removed. Impervious finishes might need to be removed and ventilation should be introduced. It is advisable to obtain the services of an competent person as an adviser. Fungal attack can affect timbers, finishes and other organic materials.

Where there is evidence of timber decay, the source should be identified and remedial action should be taken as soon as is practicable. Moisture leading to dampness combined with lack of ventilation provides conditions in which fungal attack on timber can quickly advance.

#### 6.3.6.4 Insect attack

Damage caused by insects varies in extent and location. Analysis by competent persons should be carried out to identify the type of insect, its life-cycle and the extent of damage. In many cases the damage might be historical.

Where there is evidence of insect attack, an analysis of the extent of decay should be carried out, particularly where timber structures are likely to be weakened by wood-boring beetles.

Where the interior environmental conditions would support ongoing infestation it can be appropriate to control heating, humidity and ventilation.

#### 6.3.6.5 Corrosion of metals

Metals are often used in construction and their corrosion due to dampness can be exacerbated by other environmental factors.

This can reduce their performance and that of surrounding materials, e.g. rusting and expansion of metal cramps in stonework or failure of cast iron beams or wrought iron crosstrees in spires.

### 6.3.7 Fire strategy

The manner in which fire safety is addressed can have a large impact on the fabric of historic buildings. In most cases, a holistic fire strategy incorporates a combination of appropriate management systems, building interventions and technical hardware systems. The level of intervention should be appropriate to the level of risk. Fire engineering strategies that are over engineered might be disruptive and have continuing costs.

Fire safety management should include a comprehensive fire risk assessment to identify hazards and what is likely to cause harm, and from this determine what should be done to reduce the likelihood of a fire incident. This should include an outline of fire safety measures and the management policies required to ensure the safety of persons who could be affected.

Most documents that provide guidance on fire safety focus on life safety. Fire risk assessment in historic buildings also requires the identification of risks to historic fabric and contents.

The application of a structured performance-based approach allows for alternative solutions sensitive to the historic fabric and contents. This could include automatic detection and suppression systems in lieu of building alterations, the disruption involved should be balanced against the foreseeable loss of historic fabric and finishes.

Maintaining fire safety is imperative for the conservation of historic buildings, to protect the historic fabric and contents. There is very often an increased vulnerability and heightened risk during intervention, so measures should be put in place for that time. Fire safety should also be reassessed when there is a change of use or change in the management of use.

## 6.4 The purpose of repair

The main objective of repair is to bring a historic building into good condition, while retaining its significance.

The level of intervention should be the minimum necessary to stabilize and conserve the historic building, ensure its long-term survival and meet the requirements of any foreseeable new use.

## 6.5 Minimum work

In most cases the significance of a historic building relies heavily on its fabric so the unnecessary replacement of this can have an adverse effect. The level and nature of repair should be appropriate to the

particular situation and historic building. For example, some elements of a structure require periodic replacement, such as roof coverings, which can be justified by the need to protect the structure below. The level of intervention can be higher if the costs and complexities of access merit this. For example, high level repairs to major buildings could justify a greater level of intervention and replacement, because of the costs of scaffolding and access to that height.

A lower level of intervention might be more appropriate for other parts of the historic building because the implications of the processes of decay are less, and in these cases a much more selective approach to intervention should be taken.

## 6.6 Investigation

Before any intervention is specified and carried out, the history and fabric of the historic building, and the nature and causes of defects should be investigated by competent persons.

## 6.7 Proven techniques

A principal objective of repair is to retain the performance of the existing fabric. This is usually best achieved by using matching materials and traditional repair techniques. In some instances, modern methods might be appropriate, such as the use of synthetic resins for timber repairs, but their use should be thoroughly researched before they are specified. In other instances, the original design or construction might be flawed. If this fundamentally affects the performance of the historic building, then a modern approach might be required. For example, the replacement of an inadequately-sized down pipe or the reconfiguration of roofs and valleys to allow the efficient disposal of rainwater.

New materials and techniques should be used only when there is evidence that they perform satisfactorily in use.

## 6.8 Honest repair

The significance of the historic building should be taken into account when repairing it. Generally, repairs should be carried out without any attempt to disguise them, but should not be unduly obtrusive or unsympathetic. Different approaches may be adopted where aesthetic considerations are particularly significant.

## 6.9 Reinstatement of lost features

Elements of a historic asset which contribute to its design might have been lost and their replacement might be justified, for example, the loss of some pinnacles, sections of balustrades and sash windows. The significance of the replacement should be weighed against the original design concept. Reinstatement should be justified by strong evidence and research.

## 6.10 Some common repair issues

### 6.10.1 Dampness (see 6.3.6.2)

Dampness is often caused by:

a) the external ground levels being higher than the internal floor level; or

b) the insertion of modern non-porous materials.

It might be possible to remedy a) by improving the draining of the ground by a French drain or by creating a dry area or open trench. It might be possible to remedy b) by the selective removal of these materials where possible.

Archaeological advice from competent persons should be obtained before any excavation is made in the vicinity of a historic building.

The decay of timber in buildings is closely related to moisture levels. High levels of moisture modify the composition of timber in a way that makes it more susceptible to insect and fungal attack. The moisture content of timber should be kept below 20%.

### 6.10.2 Fungal attack

It is not necessary to remove timber that has been affected by fungus because fungus becomes inactive when the level of moisture is reduced. In most cases chemical treatment is unnecessary, but it might be advisable to apply a fungicidal barrier to prevent the spread of fungus while the structure dries. It generally takes a period of months for the building structure to dry and the condition of timbers should be monitored during this period.

### 6.10.3 Insect attack

Investigation to establish the extent of damage to timber and to assess the level of impairment of structural strength should be carried out. The principal objective should be to remove the sources of moisture.

Insecticidal treatment should only be used as a last resort as it can cause environmental damage and might require licences for protected species. Precautionary treatment should not be applied to unaffected timbers.

### 6.10.4 Repointing

The need for repointing should be assessed. It should only be carried out when the mortar has deteriorated leaving voids that leave the wall vulnerable to water penetration, or when the mortar is very soft.

Comprehensive repointing is rarely necessary, it should be restricted to areas of need. Mortar should be removed with unpowered hand tools; mechanical disk cutters should not be used for removing pointing in historic buildings. Narrow joints are particularly difficult to repoint.

The new pointing should match the existing colour and texture of the aggregates. In historic buildings of particular significance the mortar composition should be based on an analysis of the original mortar.

The general principle should be that the mortar is slightly weaker than the brick or stone that the wall is composed of. Many lime mortars are by their nature soft, and this should not be used as a justification for repointing.

The mortar should be regarded as sacrificial to avoid decay to the brick or stone. The use of hard cement mortars is rarely desirable as aggressive decay of masonary could result.

## 6.11 Intervention and judgement

### 6.11.1 Reconciling values

Historic environments and historic buildings are mainly in productive use, providing accommodation for businesses, residents and other uses, allowing a range of social, cultural and economic activities to take place. Those who own, occupy, or manage historic assets are key stakeholders. In many cases historic buildings are taken on for use or investment rather than conservation.

Interventions into historic buildings and areas are often required to ensure they remain fit for purpose or can be adapted to new uses. The need to improve building performance can also lead to need for interventions. For historic areas, interventions might be needed to improve the public realm or to enable regeneration and economic development.

*NOTE Interventions might also be required to respond to changes in building legislation.*

Interventions can also be necessary for the purposes of conservation, for example in the reinstatement of missing features or the reversal of harmful alterations.

Where interventions are planned, significance should be maintained or enhanced, whilst accommodating changing functional demands and working available resources.

### 6.11.2 Social and economic value

Historic buildings provide numerous social and economic benefits to society. They are mainly in productive use, forming part of the infrastructure of work, recreation and living. There is a demonstrable correlation between quality of urban environment and an area's ability to attract jobs, investment, development, population and economic growth.

Historic buildings can provide a local identity and reference for rural and urban communities, adding to social cohesion and a sense of place.

Historic buildings can be a powerful catalyst for physical and economic regeneration. Heritage-specific funding can lever high levels of investment. Historic buildings can give a competitive advantage to towns.

In some areas, historic buildings can provide suitable accommodation for business start-ups, residential, social enterprises, creative industries, community organizations and retail outlets.

Historic buildings can lend distinctive character to developments, helping to attract buyers or occupiers and can attract and support the visitor and tourism economy.

Refurbishment of historic buildings accounts for a significant proportion of the construction industry's activities and maintains traditional craft skills, creating skilled employment.

### 6.11.3 Environmental value and sustainability

Heritage areas often have sustainable characteristics. These can include:

a) pedestrian-orientated streets and spaces, including rear-of-the-footway frontages and entrances, and well-defined streets and spaces;
b) strong connections and choice of movement for pedestrians;
c) a finer grain of mixed use;
d) high-density party-wall urban form;
e) concentrations of community facilities in established centres.

Historic buildings also often have sustainable characteristics. These can include:

1) durable materials;
2) lower maintenance requirements;
3) proven ability to adapt to changing demands;
4) refurbishment places greater emphasis on skilled labour and less on use of new materials.

Building performance can be improved with minimal intervention for example by the installation of more efficient heating, the improvement of air-tightness and the installation of low-energy lighting.

Other measures can involve higher levels of intervention and the potential impact of these on the historic building's significance should be investigated. These include improving natural lighting to interiors (new openings), insulating walls and roof space and installing micro-generation equipment.

## 6.12 New development and other interventions

New development can take the form of new buildings or structures, new sections of townscape or additions and extensions to existing buildings. The context and setting should be taken into account

in order to ensure that new development complements existing buildings, townscape, streets, spaces and landscape.

## 6.13 Design considerations

Contextual analysis should be carried out so that a bespoke, site-specific design solution can be arrived at. This often indicates diversity and contrast in the nature, style, construction, materials and character of different buildings. This represents the different periods of their construction and the differing technologies, social and economic trends and fashions that prevailed at the time they were built.

New developments should complement their surroundings by connecting to surrounding pathways, reinforcing enclosure and other townscape characteristics and making a positive contribution to streets and spaces, topography, views, and site characteristics.

## 6.14 Context and setting

Analysis should focus on the character of the site and surrounding buildings, streets, spaces and landscapes and include:

a) the scale and massing of surrounding townscape;
b) the way in which surrounding development provides enclosure, definition and active frontages to streets and spaces;
c) the quality and character of the public realm and the ways in which it functions;
d) surrounding paths, patterns of movement and connections;
e) landmarks and other features that make the area distinctive, recognizable and legible;
f) diversity in style and construction, representing different periods of development
g) topography of the site and surroundings;
h) historic structures, features or ground surfaces in or near to the site;
i) views from and into the site;
j) trees, foliage and landscape within or around the site; and
k) the range and nature of uses around the site.

Available evidence on how the layout, buildings and townscape have changed over time should also be analysed.

## 6.15 Adaptation, conversion and extension

Where new development affects the context of historic buildings or involves their extension, analysis of the historic building should be undertaken, including:

a) the significance;
b) the style of the building, including any underlying design theories or principles;

c) scale, massing and composition;
d) features of interest;
e) materials and construction;
f) previous alterations, including an assessment of whether they enhanced or harmed the building's integrity; and
g) the relationship of the building to surrounding buildings and features.

New extensions should normally be subservient to the historic building in terms of scale, height and massing.

New works should not obliterate or destroy features of interest in the historic building. It might be necessary for extensions to be attached by a smaller link section rather than directly to the original building.

## 6.16 Alterations

Alterations should be carried out only if there is no suitable alternative option. They should be designed to minimize their impact on the significance of the historic building, and should avoid losing features that contribute to that significance.

The principle of reversibility should be used, for example, new insertions, such as sub-dividing walls, should be contoured around original features and mouldings so they can be removed in the future, leaving the original fabric intact.

## 6.17 Reinstatement

Where a historic building has been altered in the past and is being reinstated to its original form, elements of the historic building which contribute to its design might have been lost and their replacement might be justified, for example, the loss of some pinnacles, sections of balustrades and sash windows. Several factors should be taken into account. These include:

a) whether there is evidence of the original design;
b) the quality of the alterations relative to the significance of the original design;
c) the magnitude of the impact of alternations on significance;
d) retaining alterations as evidence of the historic building's history;
e) whether reinstatement would make the historic building more fit for purpose; and
f) archaeological interest/evidential value of a historic building's development that might be lost.

Reinstatement should be based on strong evidence and research. Where there is insufficient evidence of the original design, conjectural reinstatement should be avoided.

The impact of any reinstatement on significance should be assessed, see **5.8.1**.

# 7 Maintenance

## 7.1 Maintenance guidance

Maintenance is the continuous care of a historic building and is the most common and important activity in their conservation and preservation. It is the responsibility of owners, managers, users and occupiers.

Good maintenance is cost effective; systematic care can often prevent further decay and avoid the need for major intervention at a later date by establishing a consistent level of good repair.

Unbiased advice from competent persons based on best practice should be sought for the maintenance of a historic building, repair and ongoing day to day care.

Maintenance is a technical and management activity. Those involved should be competent persons and those directing the works should have an understanding of the significance of the historic building.

## 7.2 Maintenance strategy

The significance of the historic building should be taken into account when developing the maintenance strategy. Criteria should be set for the level and frequency of inspections and surveys, recording and monitoring. The aim should be to implement the strategy and budget in a planned and cost effective way in accordance with appropriate standards with methods and objectives. This should include occupier relationships where the historic building is in use.

The details and methods of managing maintenance are largely determined by the type of historic building strategy. They should specify preventative rather than corrective action with minimum intervention, and repair over replacement. However, some building materials and services have "run to failure" components that cannot be repaired. The means of access to some areas of a historic building can also influence the choice of components and life cycle replacement. Safe access to all areas requiring maintenance should be provided.

When maintaining historic buildings the best and most relevant methods should be identified and deployed. There should be sufficient time to undertake the works in the appropriate conditions.

## 7.3 Maintenance management

The most effective means of puttjng a maintenance strategy into practice is through a maintenance plan. Maintenance protects areas susceptible to damage from rain, ground water, vegetation

and plant systems, salt laden sea air, storm winds and floodwater, freeze-thaw weather conditions, rapid saturation and drying out, bird and animal guano, road salt treatments and other local pollutants. Typical problems such as ground and structural settlement, insect attack, fungal and rot infections lead to the destruction of fabric and loss of structural stability and integrity. Examples of this are blocked rainwater goods and drainage systems, missing sections of roofing, structural sections vulnerable to exposure, open masonry joints, cracked render, unventilated and inappropriately serviced spaces.

A maintenance plan should have a cyclical programme. Normally this includes routine daily, weekly and twice yearly activities to keep the fabric clear, and services with other more detailed works on a longer term cycle of one year to five years.

Maintenance requirements should be regularly identified and updated from:

a) condition surveys;
b) periodic inspections for key items including structure and services;
c) reporting by building users;
d) analysis of data from monitoring equipment;
e) analysis from data from breakdown and failures of components; and
f) lifecycle replacement.

Where defects are recorded, the time planned until remedial works are carried out should take into account the particular vulnerability of the historic building, including the significance of fabric, contents and furnishings, and the risks if the defects are left unattended.

## 7.4 Maintenance in practice

The significance of a historic building should be taken into account when determining the scope and extent of any maintenance works and when choosing methods. Those carrying out works on historic buildings should be competent in the type of work required. Adequate protection measures should be included to avoid damage to historic fabric during the works. Incremental damage to the significance of the historic building should be avoided as even relatively minor works can have a disproportionate and cumulative effect. The removal of historic fabric and patina should be avoided as far as possible to retain authenticity. Materials selected should be of appropriate quality, suitable for the intended use and sourced for the particular historic building to achieve best performance match as well as best aesthetic match.

A historic building should have a manual describing the maintenance requirements and a log book to record the maintenance and checks undertaken.

# 8 Heritage and project management

## 8.1 General

Project management should be undertaken for all projects. It should be as simple as possible, but sufficiently robust.

Where work is to be undertaken to a historic building, project management should be integrated with heritage management.

There should be a process in place to ensure all people working on the project are aware of the significance of the historic building.

## 8.2 Project supervision

Project supervision is a key element in the management of any type of work to a historic building. This is particularly relevant to physical work activities as only work which has been undertaken properly should be accepted. The role of the project supervisor should be defined at the outset. Without robust project supervision from a competent person there is a higher risk of defective work.

A contractor's site or works supervisor should be responsible for ensuring specifications are compiled in accordance with the required quality standards. The contractor should prepare a project execution plan that describes how this is to be achieved and how this is to be inspected/tested.

*NOTE This is not the same as the project manager's project execution plan.*

Project supervision should include approval of the contractor's project execution plan, including their test and inspection processes.

The project supervisor should monitor the contractors' compliance and undertake their own testing and inspection processes as required. This form of quality management should be based upon risk assessment of specification non-compliance and the potential frequency and implications of this. This also requires a breakdown of work processes, from which the risks can be ascertained and the means of risk mitigation developed.

Inspection and supervision should be carried out at appropriate stage(s), for example during the repointing of masonry.

## 8.3 Project records

Project records should be kept for conservation works. They are a record of works as they are carried out and use drawings, descriptions, photographs or other data as appropriate. They record change and highlight important issues found. They are similar to as-built records with a record of discoveries in the area of works in addition to any required amendments to the planned works.

They can add to the information known about a historic building, for example where further layers of historic materials and finishes are found, where an internal structural support system was not previously known in detail or where the current record is inaccurate.

Project records of works carried out in the conservation of historic buildings can be a useful resource when planning future works. Depending on the project this record can be made publically available and deposited in a regional or national archive. The conservation plan for the historic building should also be updated.

# Annex A (informative) Conservation accreditation schemes

There are a number of conservation accreditation schemes that identify individuals who have achieved a recognized level of competence in building conservation.

The following are examples of such schemes.

- *Building Conservation Accreditation*, Royal Institution of Chartered Surveyors (RICS).
- *Conservation Register*, Royal Institution of British Architects (RIBA)/Royal Society of Architects in Wales (RSAW)/Royal Society of Ulster Architects (RSUA).
- *Register for Architects Accredited in Building Conservation* (AABC), Accon Ltd.
- *Conservation Accreditation Register for Engineers* (CARE), Chartered Institute of Architectural Technologists (CIAT).
- *Conservation Accreditation*, Royal Incorporation of Architects in Scotland (RIAS).

This list is not exhaustive.

In addition, the Institute for Historic Building Conservation (IHBC) is a professional institution for individuals who have competence in working in building conservation.

# Annex B (normative) Conservation manuals, logbooks and four/five-yearly inspections

## B.1 Introduction

This annex contains guidance and recommendations for the systematic care of historic building based on a four or five year cycle. While it is intended primarily for historic buildings in institutional ownership or care, its principles can be applied in a simplified form and are relevant and applicable to the conservation of all historic buildings.

## B.2 Conservation manuals

It is good practice to establish a conservation manual. This is a permanent, standing document that contains essential information on the historic building, its history and architecture, materials and construction. It should also contain guidance on routine housekeeping, management and maintenance procedures and on the constraints which would be likely to be applied to any proposed repair or alteration work. Its content should be reviewed every four or five years, but only amended with good reason.

It should contain the following.

a) A statement of significance for the historic building and reference to the conservation management plan if there is one.

b) An introduction setting out its purpose, which is to inform the historic building owner or manager about the historic building and its historical or architectural importance, if any, and to describe a housekeeping and management regime which would keep it in good repair and protect it from avoidable damage or decay.

c) A written description of the historic building and its various parts; plans, sections and elevations, and drawings or diagrams of services installations. Architectural drawings are important records which are costly to prepare and likely to be of use in the future. They should be kept securely.

d) Specific guidance on management, housekeeping, fire safety and maintenance procedures.

e) A conclusion, summarizing the contents of the manual that emphasizes the principal recommendations and a timetable for implementation.

## B.3 Logbooks

A logbook should be kept for every historic building.

It should contain:

a) contact details of key people, including tradesmen and maintenance contractors;

b) instructions on maintenance and inspection routines;

c) actions to take in an emergency; and

d) routine diary entries that recordi inspections and their results; and

e) a record of any work carried out on the historic building.

Completed logbooks should not be destroyed; they should be retained with the historic building as part of its permanent record.

## B.4 Inspections

Historic buildings should be professionally inspected every four or five years, or at an appropriate interval. Prior to inspections the inspector should be made familiar with the contents of the conservation manual, the log book and the previous inspection report. The purpose of the inspection is to establish, on the basis of largely a visual inspection from reasonably accessible points, the following information:

a) the general condition of all parts of the historic building, with comparison to the results of earlier inspections;

b) the progress of repairs carried out since the previous inspection;

c) the need for further repairs and, where appropriate, other works or separated targeted specialist investigation; and

d) the urgency and importance of such works, under four degrees of priority.

The inspection should be carried out in a logical sequence. A complex asset can be broken down into wings or sections. The outside of a historic building should normally be inspected before the inside, and the sequence should generally be from top to bottom, starting from the same point on the floorplan at each level and working clockwise from room to room and within each room or volume. The materials and construction of each element should be described in as concise a way as possible and their general condition and any defects recorded separately. Extensive photographic coverage, particularly of defects, is likely to be helpful. For further information see BS EN 16096.

## B.5 Inspection reports

Reports should be written up as soon as possible after the inspection. The report should contain three main sections, and appendices if necessary. The three main sections should be

a) an introduction;

b) a description of the fabric and its condition, with recommendations for repairs for this and other works, if appropriate; and

c) the need for any targeted specialist investigation.

The record of the inspection [i.e. the descriptive section, b)], should be written first. This should be followed by the analysis and then the recommendations. Items of work required should be either identified individually or grouped into packages and arranged in four urgency or priority categories:

- *Priority 1 Ð Immediate*: Work that should commence without delay for public safety or health and safety reasons, to prevent imminent damage or to arrest rapid deterioration. This can include immediate further investigation.
- *Priority 2 Ð Urgent*: Work that should be carried out within weeks or months, and within 18 months at most. Failure to do so would be likely to result in significant further damage or deterioration and increased cost.
- *Priority 3 Ð Necessary*: Work that should be carried out before the next inspection, for which there is time to plan, and which can be integrated with other work. This is work that is due in order to keep the historic building in a state of good repair and to maintain its value and usefulness. Most repair work falls within this category.
- *Priority 4 Ð Desirable*: Work that is desirable, if not strictly necessary, but that might improve the functioning or performance of the historic building or enhance its architectural or aesthetic qualities. Alternatively, work that is not due, but is

likely to become so before the next inspection and can sensibly be incorporated with other work. Much minor conservation work, such as the reinstatement of suitable windows, should fall within this category.

In deciding on the category of any item of work, the extent or type of repair recommended, or the way in which individual items are grouped into packages, access and accessibility should be taken into account. Recommendations may also include further investigation or targeted specialist investigation. It is wasteful to repair or replace materials before it is necessary to do so. However, it can be even more wasteful to allow serious consequential decay to develop. Decisions on the timing and packaging of repair works require accurate judgement. Approximate costs should be set against each package.

The introduction to the report should include general information about the building and a statement outlining the purpose of the inspection. It should also include a record of any limitations or exclusions, an account of works carried out since the previous inspection and a brief summary of the conclusions and recommendations in the report.

# Bibliography

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

## Standards publications/

BS EN 16096, *Conservation of cultural property – Condition survey and report of built cultural heritage.*

## Other publications/

[1] THE SOCIETY FOR THE PROTECTION OF ANCIENT BUILDINGS. *The Manifesto for the Society for the Protection of Ancient Buildings*, London, 1877

[2] GREAT BRITAIN. The Ancient Monuments Protection Act, 1882

[3] GREAT BRITAIN. Town and Country Planning Acts

[4] INTERNATIONAL COUNCIL ON MONUMENTS AND SITES. *International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter 1964)*, 1964

[5] INTERNATIONAL COUNCIL ON MONUMENTS AND SITES. *The Burra Charter (The Australia ICOMOS Charter for Places of Cultural Significance)*, 1999

[6] INTERNATIONAL COUNCIL ON MONUMENTS AND SITES. *Guidelines for education and training in the conservation of monuments, ensembles and sites.* (1993)

[7] ENGLISH HERITAGE. *Conservation principles policies and guidance.* London (2008)

[8] CADW. *Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment in Wales. Crown copyright.* (2011)

[9] ENGLISH HERITAGE. *Energy efficiency and historic buildings; application of Part L of the Building Regulations to historic and traditionally constructed buildings English heritage.* London. (2011)

[10] CADW. *Renewable energy and your historic building – Installing Micro-Generation Systems: A Guide to Best Practice.* Crown copyright. (2010)

[11] NATIONAL HERITAGE TRAINING GROUP. *Traditional building craft skills – reassessing the need, addressing the issues.* NHTG. London (2008) [1)]

---

1) Available from http://www.nhtgskills.org/uploads/files/nhtg_skillsresearch_england_2008_summary_tcm27-11116.pdf

[12] HIGHWAYS AGENCY. *Design Manual for Roads and Bridges.* Highways agency. London. 2013 [2)]

[13] HEALTH AND SAFETY EXECUTIVE. *Enforcement Concordat, Good Practice Guide for England and Wales* [3)]

## Further reading

ENGLISH HERITAGE. *Informed Conservation.* (series) English Heritage. London.

ENGLISH HERITAGE. *The setting of heritage assets.* English Heritage. London (2011)

ENGLISH HERITAGE. *Understanding historic buildings: Policy and guidance for local planning authorities.* English heritage. London (2008)

ENGLISH HERITAGE. *Practical Building Conservation; BASICS.* Ashgate on behalf of English Heritage. London (2013)

ENGLISH HERITAGE. *Understanding historic buildings, A guide to good recording practice.* Swindon. (2006)

ENGLISH HERITAGE. *Understanding place: Historic area assessments in a planning and development context.* English heritage. London (2012)

HISTORIC SCOTLAND. *Conservation plans. A guide to the preparation of conservation plans.* Historic Scotland. Edinburgh. (2002)

HISTORIC SCOTLAND., *Measured survey and building recording.* Crown copyright 0(2003)

HISTORIC SCOTLAND. *Scottish historic environment policy.* Crown copyright (2011)

HISTORIC SCOTLAND. *Passed to the future.* Historic Scotland. Edinburgh. (2002)

---

2) Available from http://www.dft.gov.uk/ha/standards/dmrb/index.htm

3) Available from https://docs.google.com/viewer?url=http%3A%2F%2F www.berr.gov.uk%2Ffiles%2Ffile10150.pdf

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

# British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

## About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards -based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

## Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

## Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

## Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

**PLUS** is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email bsmusales@bsigroup.com.

**BSI Group Headquarters**

389 Chiswick High Road London W4 4AL UK

## Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

## Copyright

All the data, software and documentation set out in all British Standards and other BSI publications are the property of and copyrighted by BSI, or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI. Details and advice can be obtained from the Copyright & Licensing Department.

## Useful Contacts:

**Customer Services**
**Tel:** +44 845 086 9001
**Email (orders):** orders@bsigroup.com
**Email (enquiries):** cservices@bsigroup.com

**Subscriptions**
**Tel:** +44 845 086 9001
**Email:** subscriptions@bsigroup.com

**Knowledge Centre**
**Tel:** +44 20 8996 7004
**Email:** knowledgecentre@bsigroup.com

**Copyright & Licensing**
**Tel:** +44 20 8996 7070
**Email:** copyright@bsigroup.com

bsi.

...making excellence a habit.™